CBS Confident Pharmacy Series

Second Edition

Community Pharmacy Management

for Second Year Diploma in Pharmacy

Course Code: **ER20-22T**

As per the latest syllabus prescribed by Pharmacy Council of India

Including
Board Examination Question Papers and Specimen Answer Papers

VN Raje





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Preface to the Second Edition

Second edition of this book includes Board Examination Question Papers and Specimen Answer Papers. These additional contents are of great importance to the students which gives an exact idea about the framework of Question Paper Pattern and Specimen Answers as per the format of Pharmacy Council of India (PCI).

This book builds self-confidence in students which helps to get success in the examinations. The book has been written to meet the requirements of students of Diploma in Pharmacy (DPharm) in accordance with the new revised syllabus ER-2020 prescribed by Pharmacy Council of India.

This book is small and humble effort has been put in for compiling necessary information on the subject. An attempt has been made to demystify and simplify the basic concepts for the students of pharmacy and to enable them get an evergreen success in all the board examinations and all other qualifying examinations throughout India.

The salient features of the present book are:

- Lucid and easy language
- To the point answers
- Remembering facts in the simplest way
- Infusing confidence in the reader to appear in the board examinations

Hence the series is named

CBS Confident Pharmacy Series

I am confident that this book will be useful to both the students and the teachers of Diploma in Pharmacy as well as the candidates desiring to succeed in competitive examinations for better job opportunities in pharmacy profession such as hospital pharmacists in PHCs, civil hospitals, etc.

Vijay N Raje

to

my beloved family

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I wish all my beloved students to have a great success in the board examinations.

Vijay N Raje

Syllabus

(As per PCI New ER-2020)

Community Pharmacy and Management

Course Code: ER20-22T

1. **Community Pharmacy and Practice:** Definition, history and development of community pharmacy—International and Indian scenarios.
2. Professional responsibilities of community pharmacists. Introduction to the concept of Good Pharmacy Practice and SOPs.
3. **Prescription and Prescription Handling**
   - Definition, parts of prescriptions, legality of prescriptions, prescription handling, labelling of dispensed medications (main label, ancillary label, pictograms), brief instructions on medication usage.
   - Dispensing process, good dispensing practices, dispensing errors and strategies to minimize them
4. **Community Skills**
   - Definition, types of communication skills
   - Interactions with professionals and patients
   - Verbal communication skills (one-to-one, over the telephone)
   - Written communication skills
   - Body language
   - Patient interview techniques
5. **Patient Counselling**
   - Definition and benefits of patient counselling
   - **Stages of patient counselling:** Introduction, counselling content, counselling process, and closing the counselling session
   - **Barriers to effective counselling:** Types and strategies to overcome the barriers.
   - **Patient counselling points for chronic diseases/disorders:** Hypertension, Diabetes, Asthma, Tuberculosis, Chronic obstructive pulmonary disease, and AIDS
   - **Patient package inserts:** Definition, importance and benefits, scenarios of PPI use in India and other countries
   - **Patient information leaflets:** Definition and uses

6. **Medication Adherence**

   Definition, factors influencing non-adherence, strategies to overcome non-adherence

7. **Health Screening Services in Community Pharmacy**

   Introduction, scope, and importance of various health screening services – for routine monitoring of patients, early detection, and referral of undiagnosed cases.

8. **Over the Counter (OTC) Medication**
   - Definition, need and role of pharmacists in OTC medication dispensing
   - OTC medications in India, counselling for OTC products
   - Self-medication and role of pharmacists in promoting the safe practices during self-medication
   - Responding to symptoms, minor ailments, and advice for self-care in conditions such as – pain management, cough, cold, diarrhoea, constipation, vomiting, fever, sore throat, skin disorders, oral health (mouth ulcers, dental pain, gum swelling)

9. **Community Pharmacy Management**
   - Legal requirements to set up a community pharmacy
   - Site selection requirements
   - Pharmacy designs and interiors
   - Vendor selection and ordering
   - Procurement, inventory control methods, and inventory management
   - Financial planning and management
   - Accountancy in community pharmacy – Daybook, Cash book
   - Introduction to pharmacy operation softwares – usefulness and availability
   - Customer Relation Management (CRM)
   - Audits in Pharmacies
   - SOP of Pharmacy Management
   - Introduction to Digital Health, mHealth and Online pharmacies

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Chapter

1

Community Pharmacy Practices

Q.1. Define community pharmacy. Give the scope of community pharmacy practice. Explain the role of community pharmacist.

Community Pharmacy (W. 23)

"Community pharmacy means any place under the supervision of a pharmacist where the practice of pharmacy occurs or where prescription orders are compounded and dispensed other than a hospital pharmacy or a limited-service pharmacy."

- Community pharmacy is also known as retail pharmacy.
- Community pharmacy is a diverse, dynamic and constantly changing practice environment comprising of several different practice settings and offering many opportunities for pharmacy practitioners.
- The main aim of community pharmacy is to educate the community about health and disease.
- Community pharmacy is a pharmacy that deals with people in local area.

Scope of Community Pharmacy Practice

The community pharmacy practice has a scope in various areas of healthcare system which are as follows:

1. **In processing prescriptions:** In the community pharmacy practice, the legality, safety and appropriateness of the prescription order is verified and the patient medication record is checked before dispensing the prescription. This helps to ensure that the quantities of medication dispensed are accurate, and decide whether the medication should be handed to the patient.
2. **Clinical pharmacy:** The community pharmacies seek to collect and integrate information about the patients medication history and dosage regimen.

3. **Patient care:** The community pharmacies provide advice on the mode of administration and precautions to be taken while taking prescribed medicines to the patients based on their records of medication history.
4. **Drug monitoring:** The community pharmacies are involved in research projects and schemes to analyze prescriptions for the monitoring of adverse drug reactions.
5. **Extemporaneous preparation:** In community pharmacy, medicines are prepared in small quantities following good manufacturing and distribution practice guidelines.
6. **Alternative medicines:** In some community pharmacies, traditional medicines and homeopathic prescriptions are dispensed and supplied to the patients.
7. **Checking symptoms of minor ailments:** Community pharmacies supply non-prescription medicine with advice to consult a medical practitioner, if the symptoms persist for more than a few days. Additionally, patients are advised on the symptoms of minor ailments without supplying medicines.
8. **Healthcare professionals:** Community pharmacies provide the necessary information to other healthcare professionals and to patients, and use it in promoting the rational use of drug by providing advice and explanations to physicians and to members of the public.
9. **Counselor:** Community pharmacies provide an advisory, supply and counselling service to residential homes for the elderly, and other long-term patients.
10. **In prophylaxis and health promotion:** They take part in health promotion campaigns at local and national levels, on a wide range of health-related and drug-related topics and topics concerned with other health problems and family planning.

Role of Community Pharmacists

Community pharmacist: A community pharmacist (drug specialist) is the professional who is in direct access to the public and whose duties are widely required for the public and patients.

Community pharmacist plays an important role in reducing the mortality and morbidity in the public.

The community pharmacists play following roles in the healthcare system:

1. **Processing prescription:** Community pharmacists check prescription order from the physicians and prepare medicines for the patient.

2. **Checking for drug interactions:** Community pharmacists make sure that the medicines and doses are appropriate, considering health factors and other medicines under use by patients.
3. **Dispensing of medicines:** A community pharmacist, labels the medication correctly with instructions for the patient about how and when to take the medicines. He dispenses medicines with a prescription and in certain cases without a prescription as for OTC drugs.
4. **Disposal of medicines:** Community pharmacists collect unwanted used/unused medicines from patients and dispose them safely as per disposal guidelines.
5. **Providing advice:** Community pharmacists help patients to understand their health and medicines and give appropriate advice for rational use of drugs and provide information on the administration and storage of the medicines.
6. **Counselling:** Community pharmacists support patients through personal counselling to make healthier choices such as food habits, importance of exercise, regular checkups, etc.
7. **Women welfare and infant care:** Community pharmacists guide the mother in the matters of personal hygiene and management. They encourage breastfeeding and can play a major role by guiding the mothers for the protection of the child by following proper immunization schedule.
8. **Patient education:** Community pharmacist can educate people in the prevention of HIV/AIDS by explaining to what HIV is, its transmission, risk reduction, etc.
9. **Alcohols, drug abuse and smoking cessation:** Community pharmacists help individuals who are dependent of alcohol and drug abuse. They take an active role in helping the smokers to stop smoking and advising on the products available to assist the patients in giving up smoking.
10. **Family planning:** Community pharmacist talks about various family planning measures available in the market and educates the people and convinces them about the advantages of having small families.

Q.2. Write a note on "history and development of community pharmacy". (S. 23)

History and Development of Community Pharmacy

- History of community pharmacy (drugstore) is as old as human development where man adapted the speciality of recovering through cool water, a leaf and soil or mud.

- Middle Easterners were the primary who began proficient drugstore setups.
- The primary ever sedate store in the world was built in Baghdad.
- The preparatory type of drugstore spread later to Egypt, antiquated China and furthermore to Europe.
- In 1763, Benjamin Franklin contacted the Principal community pharmacists in Pennsylvania Doctors facility, for the drugstore calling.
- In 1729, the first community pharmacy was founded in Philadelphia.
- The first college in India where professional training was given to students for treating patient with drugs was Madras Medical College established in 1835.
- The first two years professional course 'chemist and druggist diploma' was started in Madras Medical College in 1874.
- In 1932, pharmacy education was started at Banaras Hindu University and introduced Bachelor's Pharmaceutical Chemistry and was the first university to start a 3-year bachelor's program in pharmacy.
- Proficient drugstore instruction began in Banaras Hindu College in 1937. In the same year in Punjab, Lord Edward Douglas MacLagan began a similar entire drugstore program. This prompted the creation of community pharmacists equipped for running a community pharmacy.
- Community pharmacists (drug specialists) offer an asset to take part in instructive projects that encouraged and enhanced collaboration between group drugstores and private offices.

Q.3. Discuss international and Indian scenario of development and community pharmacy practice. (S. 24)

International and Indian Scenario of Development of Community Pharmacy

- Pharmacy is a multidisciplinary profession, which connects health sciences with chemical sciences and aims to ensure the safe and effective use of pharmaceuticals.
- Pharmacists comprise the third largest healthcare professionals in the world.
- Today, community pharmacist's role has been transited from dispensing to pharmaceutical care by maximizing the benefits of medications and their safety.

International Scenario

In developed countries, community pharmacy is positioned at top second contrast to other alternate professions. In developing countries only 10% of

entire pharmacists works in community pharmacies, while in sub-developing countries only 2% of aggregate personnel and community pharmacists are working as community pharmacists.

Developed Countries

Developed countries have clearly established the role of community pharmacists by providing them with knowledge and techniques to counsel patients, provide information about medicines and disease conditions or advice about lifestyle modifications, drug administration, dosage side effects, storage of drugs and drug–drug and drug–food interactions.

Developing Countries

In contrast to developed countries, community pharmacy practice in developing countries is underutilized. In developing nations, difficulties include deficiency of community pharmacists, underutilization of community pharmacists, poor acknowledgement of community pharmacy and pharmacists as a human services supplier, poor education to these professionals and appointment of poor attendants (laymen) to run community pharmacies.

Sub-developing and Underdeveloped Countries

The absence of assets and associations, it is hard to obtain the real scenario of community pharmacy practice in underdeveloped and sub-developed countries.

These nations include Ghana, Bangladesh, Afghanistan and Tanzania.

Indian Scenario

- The pharmacy profession in India is evolving due to industrialization and increase in patient needs, leading to an increase in the demand of pharmacists.
- According to the PCI New Delhi, there are about 8 lakh registered pharmacists in India. Presently, there are around 7 lakh retail pharmacies in India and most of them are located in the urban areas.
- The community pharmacy sector is the prime source of medicine for both ambulatory and hospitalized patients.
- The activity of community pharmacy practice is regulated by Pharmacy Act, 1948 and Drugs and Cosmetics Act, 1940 and Rules, 1945.
- In developed states of India, such as Maharashtra, Tamil Nadu, Kerala and Karnataka, the key role that pharmacists offer is patient counselling.

- Community pharmacists play an important role in providing quality healthcare through patient counselling.
- The pharmacy officers are working under a medical officer at the Community Health Centres (CHC) and Primary Health Centres (PHC) levels.
- The problem faced by community pharmacies includes inadequate incentives and profit margin, overcrowding of pharmacies in urban and semi-urban areas.
- Community pharmacy includes corporate pharmacy chain, pharmacy department in supermarket, and independently owned retail pharmacy.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. Pharmacists are registered under the **Clause (i) and Section (2) of the Pharmacy Act, 1948**.
2. Community pharmacy is the pharmacy which links between the **community and health**.
3. Pharmacists working in India must have a pharmacist registration certificate issued by the state comes under **provisions of the Pharmacy Act, 1948**.
4. To obtain a registration certificate, the pharmacist must acquire the minimum **diploma in pharmacy**.
5. Community pharmacy is also known as **retail pharmacy**.
6. A community pharmacy is a pharmacy that deals directly with people in **local area**.
7. The history of community pharmacy in India starts with opening of chemist shop in **1811**.
8. The first regular two-year course for "chemist and druggist diploma" was started at **Chennai**.
9. All India Organization of Chemists and Druggists (AIOCD) was formed in **1979**.
10. In 1729, the first community pharmacy was founded in **Philadelphia**.
11. **John Buchner** discovered salicin in willow bark.
12. The first pharmacopoeia of world is published in **Nuremberg, Germany**.
13. The first degree pharmacy program was started in BHU in the year **1932**.
14. In **1993**, the International Pharmaceutical Federation adopted the guidelines for GPP.
15. WHO published the first International Pharmacopoeia in **Geneva, Switzerland** in 1951.

Chapter

2

Professional Responsibilities of Community Pharmacists

Q.1. Describe/explain various professional responsibilities of the community pharmacists. (S. 24, W. 23)

Professional Responsibilities of Community Pharmacist

1. Dispensing of Prescription

To check the dosage and ensure that medicines are correctly and safely supplied and labelled. Dispensing of prescription includes verification of the prescription, solving medication-related issues, selection of appropriate product, proper labelling and supply with proper counselling on its use.

2. Communication

Pharmacist must have a good communicative skill that will allow more effective interaction with patient and physician. Effective and efficient communication is required to community pharmacist within the public. When the prescription order is unclear or potentially harmful for the patient, then pharmacist needs to communicate with prescriber.

3. Patients Safety

A community pharmacist should take medication history of each patient, every time before dispensing the medication. In addition, effective communication is essential for patient's medication safety.

4. Patient Counselling

Patient counselling includes training the patients about how to use the drug, to minimize side effects and maximizing benefits and listening to all of the patients concerns. Patient counselling also involves advising patient about adverse reactions, and interactions with other medications, food alcohol and other beverages like grapefruit juice, milk, etc.

5. Dealing with General Health of Patients

Community pharmacists are responsible for patients to heal and stay them away from getting sick by sharing advice on using non-prescription remedies, taking health supplements such as vitamins, using herbal and natural health products, good diet and doing exercise. They also advise on the smoking and drinking alcohol, immunization, etc.

6. Report Important Data to the Physician

The pharmacist has a moral and professional obligation to report to the prescribing physician about any drug interaction and adverse drug reactions that appear to be clinically significant.

7. Drug Information Source

The pharmacist must be able to integrate his pharmaceutical knowledge of accurate and important information to the patient and members of healthcare team.

8. Healthcare Accessories

Community pharmacist should assist the patients in providing information regarding healthcare accessories as well as supply of commodity itself.

Pharmacist should supply and inform about health accessories such as dressing, first aid supplies, infant baby supplies, atomizers and nebulizers, hearing aids, etc.

9. Preventive Health Services

It includes monitoring of drug utilization, health promotion programs and health screening services.

10. Formal Education and Training

Community pharmacist should undertake the job of educating pharmacy students in community pharmacy service. They should also attend or participate in formal education and training programs such as, continuing education, seminars, correspondence courses.

11. Women Welfare—Pregnancy and Infant Care

The community pharmacists can encourage breastfeeding and guide the mother for protection of child by following proper immunization schedule.

12. Expert in Pharmaceutical Care

As community pharmacists are medicine experts, they hold the responsibility to deliver effective, safe and quality medicines and services to achieve

optimal health outcomes. Therefore, pharmacists are responsible for ensuring the efficacy, integrity and security of medicines, devices and vaccines to safeguard a patient's health.

13. Managing Staff

Pharmacists have the ultimate responsibility to ensure right drug to the right patient and right dose. So to meet and fulfil the requirement, pharmacist should manage, supervise and train the pharmacy supportive staff.

14. Stock and Inventory of Medicines

Community pharmacist must maintain stock and inventory of medicines and other operations in pharmacy. To monitor the expired drugs and return to the respective vendors.

15. Updation of Knowledge

Community pharmacist must keep up to date with current pharmacy practice, new drugs and their uses.

16. Other Responsibilities

i. In mental healthcare
ii. In oral healthcare
iii. In diabetic education
iv. In immunization program
v. In use of OTC products
vi. In smoking cessation
vii. In hypertensive cares
viii. In prevention of drug misuse
ix. In maintaining accurate records and documentation
x. To manage finance and budgets

Q.2. Discuss the "concept of Good Pharmacy Practice" (GPP) or give requirements, principle elements and standards of GPP. (W. 23)

Good Pharmacy Practice (GPP)

- Good pharmacy practice defines pharmacists that provide quality pharmacy service to every patient.
- GPP is the practice of pharmacy that responds to the needs of the people, who use the pharmacist's services to provide optimal, evidence-based care.
- GPP guidelines are based on the pharmaceutical care given by pharmacists.

- The GPP guidelines recommended that national standards should be for the promotion of health, the supply of medicines, medical devices, patient self-care and improving prescribing and medicine used by pharmacists activities.
- WHO has made certain recommendations about GPP that clarifies and meet that obligations to ensure that quality service to the patient to be provided.
- In order to satisfy these requirements, WHO recommended that:
    a. Professional responsibility should be main philosophy underlying the practice.
    b. Pharmacist's input is essential component in decisions on medicine use.
    c. Professional interactions particularly with physicians should be seen as therapeutic partnership involving mutual trust and confidence.
    d. Relationship with other pharmacists should be as colleagues and should favour improvement in pharmacy services and not as a competitor.
    e. Pharmacist must be aware of importance of providing information to patient and to ensure this, patient's medication profile must be generated and maintained.
    f. Pharmacist should try to gather and use comprehensive, objective and current information about therapeutics and medicines in use.
    g. Pharmacist should continually try to maintain professional competence throughout his professional life.
    h. It is necessary to have national standards of GPP, that should be adhered to by the practitioners.

Elements of GPP

GPP addresses the following elements:

1. Promoting good health, avoiding ill health and achieving health objectives.
2. Supply of medicines and their rational use.
3. Self-care activities involving advice and where appropriate supply of medications for self treatment.
4. Activities influencing prescribing and medicine use.
5. In collaboration with other healthcare professional's health promotion activities for community at large, prevention of abuse, misuse, etc.
6. Involvement of clinical trials in all stages.

Good Pharmacy Practice (GPP) Organizes the Following Major Roles for Pharmacists

1. To prepare, obtain, store, secure, distribute, administer, dispense and dispose the medical products
2. To provide effective medication therapy
3. To maintain and improve professional performance
4. Contribute to improve effectiveness of healthcare system and public health.

Requirements for the Good Pharmacy Practice (GPP)

1. Premises/layout/furniture
2. Equipment
3. Manpower
4. Storage
5. Inventory control
6. Services
7. Documentation

1. Requirements of Premises/Layout/Furniture

- The location of pharmacy should be such that it is easily identified by the public.
- The environment in the pharmacy should be neat and clean.
- It should have clearly marked word "pharmacy".
- The pharmacy should also be accessible to disabled people using wheelchairs.
- It should have display counter, shelves, for medicine storage, counselling area, waiting area, billing area, adequate space for movement and waste collection boxes.
- Counselling area should have furniture (table and chairs) and cabinets for keeping patients medication records (PMR).

2. Requirements for Equipment

- The pharmacy should be equipped with refrigerator for storage and medicine in cold temperature and validated from time to time.
- Counselling area should be equipped with demonstration chart, patient information, leaflets, reference materials, etc.
- It should contain basic equipments such as thermometer, sphygmo-manometer, glucometer, stethoscope, weight and height scale.
- It should have telephone, computer software facilities.

3. Requirements for Manpower

- The pharmacy should be managed under the supervision of pharmacist and other personnel working in pharmacy should be well trained.
- The pharmacy should have well documented guidelines and procedures for personnel set by management with pharmacist consultation.
- The personnel in the pharmacy should wear neat apron/coat and wear a badge displaying his name and designation.
- All pharmacy personnel should be medically examined and adequately immunized periodically.
- The chief pharmacist must be bachelor/master in pharmacy.
- Assistant pharmacist must be at least diploma in pharmacy.

4. Requirement for Storage

- All the medicines coming into the pharmacy should initially be quarantined and then checked for quantity, batch number, expiry, integrity, etc. After checking, they should be transferred to their respective storage location.
- All the medicines should be stored at appropriate temperature protecting from excessive light, dust and humidity.
- The medicines and shelves should be clean and dust free following standard operating procedures (SOPs).
- Narcotics and psychotropic should be stored and of labelled as per norms.
- Shelves should be checked periodically for expiry of medicines and expired medicines should be kept separately labelling "expired goods", "not for sale".
- Expired, unused and unopened medicines are either returned to the suppliers or destroyed as per the norms.

5. Requirements for Inventory Control

- The pharmacy should develop and maintain safe, effective, operational and socio-economically acceptable procurement and inventory management.
- Pharmacist should ensure medicines and healthcare products readily available in the pharmacy in sufficient quantities.

6. Requirements of Services

- Service strategies include home delivery of medicine special care and attention to patients like elderly patients, regular patients, etc.
- Service manual should state in detail service offered, service time and pharmacy operation schedule.

7. Requirements of Documentation

- Documentation is one of the activities for maintaining and achieving quality.
- Pharmacist shall maintain all necessary documents like registration, permissions, etc.
- All operational documents like purchase invoices, sales invoices, etc. must be maintained properly.

Q.3. Describe the concept of "standard operating procedures" or what do you mean by SOPs? Give the objectives, ideal qualities, importance or advantages or benefits and contents of SOPs.

Standard Operating Procedures (SOPs)

- Standard operating procedures are the set of instructions that document a routine or repetitive activity.
- SOP in health care is defined as written set and instructions that health-care worker should follow to complete a job safely to produce beneficial health outcomes.

Aim/Objectives of SOP

1. SOPs aim to achieve efficiency, quality output, and conformity of performance
2. To ensure regulatory compliance
3. To carry out process correctly and always in the same manner
4. To provide quality service
5. SOPs are essential to implement GPP.

Ideal Qualities of SOP

1. It should be precise.
2. It should not include irrelevant information.
3. It should be short but comprehensive.
4. It should be written in professional language. Avoid informal language.
5. It should be reviewed by third person.
6. It should be clearly worded, easy to read and having short and simple steps.
7. It needs to be validated.

Importance/Advantages/Benefits of SOPs

1. Get insight into the procedure and thus enable organization to better understand their tasks.
2. Identify the areas that need improvement.
3. Utilize safe and efficient procedure.

4. Achieve regulatory compliance.
5. Produce product/provide service consistent and predictable.
6. Useful as a tool for training the employee (save on training cost).
7. Assist in quality assurance ensuring that patient receives a service that meets predefined standards.
8. Maintain GPP at all times.
9. Clear accountability ensuring that staffs are aware of their own responsibilities.

Content of SOP

1. Objective: Purpose of SOP.
2. Scope: Area of work to be covered.
3. Stages of process: Description of how task is carried out.
4. Responsibility: Who is responsible for carrying out procedure?
5. Other useful information: How SOP is audited.
6. Review: Shows how process is monitored to ensure that it remains up-to-date and relevant.

Preparation of SOPs

The following is an example of preparation of SOP for good dispensing practice.

SOPs for Good Dispensing Practice

1. **Objective:** To provide SOP for dispensing prescription drugs. This insists use of generic equivalent drugs which are cost-effective in nature.
2. **Scope:** It encompasses the areas of work to be covered by the SOP such as all prescriptions, generic equivalent drugs and OTC drugs. It is advisable that this should not be over-complex.
3. **Responsibility:** Preparation of SOP in community pharmacy is responsibility of pharmacist and pharmacy assistant/s.
4. **Procedure:**
   a. Greet the client with a smile.
   b. Prescription reception: Receive the prescription in a dignified manner.
   c. Professional check: Read the prescription properly; the name, strength, dose and quantity. If in case of doubt, ask other pharmacists in pharmacy to clarify. Check the legality and legibility of the prescription.
   d. Intervention and problem solving: If the prescription is illegible and in case of doubt, confirm with the doctor over phone. Do not dispense a prescription drug without a proper prescription order and when in doubt.

e. Accuracy checking: Verify availability of the stock and make sure, it is as per prescription order. Collect items from stock and make sure that the product is under the good condition and not yet expired.
f. Give the client the chance to choose what is the cheapest but should have quality and effectiveness when in use.
g. Obtain the medicines from the tray, double check whether these are in the prescription order, and ask for the quantity to be bought.
h. Check the product in front of the customer and interpret the instruction of the doctor to him or give relevant information regarding the dose, method of administration and storage, etc.
i. Handling out prescription item(s): Handover the medicines to customer, and proceed to the billing and issue official receipt.
j. Dealing with the situation when prescription forms are incompletely filled.

5. **Quality of records:** The pharmacist should file the fully filled prescription and should input entries in the prescription book. The prescriptions should be kept for 2 years.
6. **Review:** It shows how the process is monitored to ensure that it remains up-to-date and relevant.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. GPP stands for **good pharmacy practices**.
2. SOP is recognized abbreviation for **standard operating procedure**.
3. GPP requires that a pharmacist's first concern in all settings is the **welfare of the patients**.
4. GPP is the practice of pharmacy that responds to the **needs of the people**.
5. FIP means **International Pharmaceutical Federation**.
6. The preparation of SOPs in pharmacy is responsibility of **pharmacist**.
7. PMR means **patients medication records**.
8. The GPP guidelines (2011) framed by WHO/FIP on **standard for quality of pharmacy services**.
9. The GPP guidelines are based on the **pharmaceutical care** given by pharmacists.
10. Standard operating procedures (SOPs) are the **set of written instructions**.

Chapter

3

Prescription and Prescription Handling

Q.1. Define prescription. Describe different parts of the prescription in detail. (S. 23, W. 23)

Prescription

Prescription is an order written by physician, dentist or any other Registered Medical Practitioner (RMP) to the pharmacists to compound and dispense a specific medications for the individual patient.

Parts/Components of Prescription

A complete prescription must have the following parts:

1. Information of prescriber
2. Date of the prescription
3. Patient data (name, age, sex and address of the patient)
4. Superscription
5. Inscription
6. Subscription
7. Signatura
8. Renewal instruction
9. Registration number and seal.

1. **Information of prescriber:** This part of prescription contains a name of doctor, address of prescriber, contact number of prescriber.
2. **Date of the prescription:** The date of the prescription should be at the top of the prescription. Date must be written on the prescription by the prescriber at the same time when it is written. The date on the prescription helps a pharmacist to find out the cases where prescription is brought for dispensing long time after its issue. Prescriptions containing narcotic or other habit-informing drugs must bear the date. This part is useful to know when the medicines were dispensed at last time as well as it prevents the misuse of the drug by the patients.

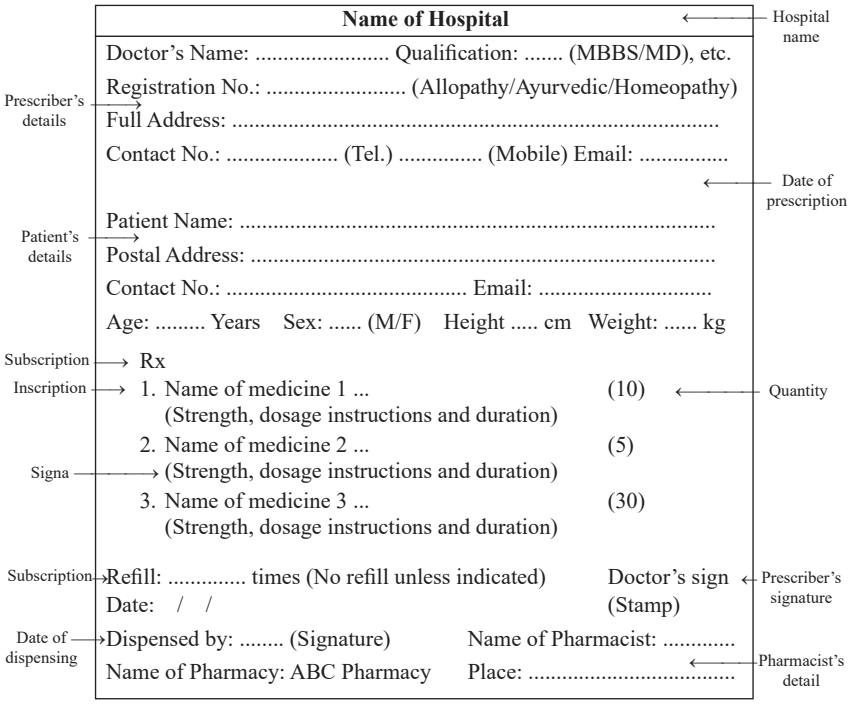
3. **Name, age, and weight of the patient:** The name, age, weight of the patient should be written in this part. This one part is very important because of the identification purpose. Name, age, sex and address of the patient must be written on the prescription. If it is not written, then the pharmacist himself should ask the patient about these particulars and put down at the top of the prescription. This avoids the possibility of giving the finished product to a person other than the one it is meant for. Patient's full name must be written instead of surname or the family name.

   Age and sex of the patient especially in the case of children helps the pharmacist in checking the medication and the dose. Therefore, there will be less danger of its being administered to the wrong member of the family or the hospital ward having similar names. The address of the patient is recorded to help for any reference at a later stage, to contact the patient or to deliver the medication personally.
4. **Superscription:** The superscription is represented by a symbol, Rx, which is always written at the beginning of the prescription. In the days of mythology and superstition, the symbol was considered as a prayer of Jupiter, the God of healing, for quick recovery of the patient but now this symbol is understood as an abbreviation of the Latin word recipe, meaning "take thou" or engligh meaning "you take". Basically, the writer of the prescription praying to the god to get the patient well soon.
5. **Inscription:** The inscription is the part of the prescription; contains the composition of the medicine and amount of dosage. It contains the names and quantities of the prescribed ingredients. The names of the ingredients are written each on a separate line, followed by the quantity ordered and the last item written is generally the vehicle or diluents. For example, paracetamol 500 mg; paracetamol 650 mg. In complex prescriptions containing several ingredients the inscription is divided into three parts:
   i. The base or the active medicament which is intended to produce the therapeutic effect;
   ii. The adjuvant which is included either to enhance the action of the medicament or to make the produce more palatable;
   iii. The vehicle which is either used to dissolve the solid substances and/or to increase the volume of the preparation for ease of administration.
6. **Subscription:** The subscription is the part of the prescription; contains the direction to dispense the dosage form. The number of dosage units

and the quantity to be given. For example, tab paracetamol-10 (that means 10 pieces paracetamol tablet). This part of the prescription contains prescriber's directions to the pharmacist regarding the dosage form to be prepared and number of doses to be dispensed.

7. **Signatura or transcription:** The signatura is the part of the prescription, contain the direction by the writer to the patient, how and when should the medicines are taken. The directions are given in Latin shortcuts. For example, "TDS" means three times a day; "BID" means "bis in die" or twice a day; "a.c" means before a meal, etc.
8. **Renewal instructions:** The prescriber indicates in every prescription, whether it should be renewed, and if renewed, for how many times. It is very important particularly for the case of habit forming drugs to prevent its misuse.
9. **Registration number and seal:** In this part, there is a registration number of the medical practitioner, who writes the prescription as well as signature and stamp of the same medical practitioner.

A Model/Typical Prescription (W. 23)



Q.2. Discuss/mention the legal requirements of the prescription.

The legal requirements for a valid prescription are as follows:

1. Prescription should be written in indelible (cannot erased) ink (may be handwritten or computer generated).
2. Prescription must be signed in indelible ink by the practitioner.
3. Prescription must be dated by the prescriber.
4. Prescription should state address of the practitioner.
5. Prescription should contain a name and address of patient.
6. If issued by a dentist, the words 'for dental use only' must be written.
7. Prescription always writes legibly.
8. Prescription always space out words and numbers to avoid confusion.
9. Prescription always contains complete medication orders.
10. Prescription always specify the age for children less than 12 years.
11. Avoid abbreviations.

The following information also needs to be written on the prescription:

1. The approved or generic name of the medicine. To prevent misinterpretation, the name should be written clearly and unabbreviated.
2. The brand name should be written when there is a clinically significant variance in bioavailability of the same products between each manufacturer.
3. The form of the medicine and the route of administration.
4. The strength of the drug in medicine (tablet, capsule, liquid, etc.). In case of liquid preparations, this must be clearly stated as, for example, 250 mg/5 ml.
5. The dose and dosing frequency.
6. For medicines to be taken as required, the minimum dose interval must be specified along with the maximum daily dose as well as the indication.
7. Treatment courses should specify the duration of administration, for example, for antibiotics or steroids.

Legal Forms of Prescription

1. Handwritten and hand-signed (in prescriber's handwriting) on paper
2. Printed on paper and hand-signed in prescriber's handwriting
3. Mediation charts for hospital inpatients
4. Direction given face-to-face, by phone, fax or email by prescriber
5. Image-based prescriptions by prescriber
6. Electronic prescriptions in community practice.

7. Paper-based or electronic medication chart prescriptions in residential care facilities.

Illegal Forms of Prescription

1. Prescriptions on forms printed by pharmacy, prescription broker, clerical assistant, patient.
2. Prescriptions sent through companies, websites or software applications other than electronic prescriptions using conformant systems with conformance identification numbers.
3. An image of a prescription provided to a patient.
4. An image provided to a pharmacy by anyone other than the prescriber.
5. Paper prescriptions with digital signatures.
6. Electronic or image-based veterinary prescriptions.
7. Prescriptions ordered by the patient in response to websites offering to arrange supply of contraceptives/infertility treatments medicines.

Q.3. What are various types of prescriptions? Or explain various types of prescriptions.

Types of Prescriptions

1. **Simple prescription:** Those that are written for a single component or prefabricated product do not require pharmacist compounding.
2. **Compound or complex prescription:** Those that require compounding and are written for more than one component.
3. **e-prescription (electronic prescription):** The use of electronic means for generating and transmitting prescriptions is known as e-prescription.
4. **In-patient prescription:** A medication order form for use in a hospital. In addition, specialised units such as infectious disease, cardiac care, paediatrics, and others may use other forms within a hospital. In patient-controlled anaesthesia, drug-specific forms may be used for heparin dosing, electrolyte infusions, and morphine sulphate.
5. **Narcotic prescription:** A narcotic prescription is one that contains a narcotic or other habit-forming drug. It must also include the patient's address and the prescriber's narcotic registration number, in addition to the contents of the simple prescription. Ink or a typewriter should be used to write such a prescription. The narcotic substance's quantities must be written in both words and numbers.

Q.4. Write a note on "handling of the prescription". (S. 23. 24)

- The pharmacist is responsible for proper handling of the prescription within the framework of professional ethics and legal regulations.

- First of all, patient must be made to feel attended and comfortable by pharmacist's friendly gesture and ambience when they visit the pharmacy.

Steps Involved in the Handling of Prescription

1. Receiving the prescription
2. Reading the prescription
3. Checking the prescription for:
   a. Legibility
   b. Legality
   c. Correctness
   d. Completeness
4. Consulting the prescriber if needed
5. Proceed for dispensing

1. Receiving the Prescription

Prescription handling begins when a prescription is presented. The friendly personality of a pharmacist with professional look is of great importance. Greeting each patient in a respectful, professional manner indicate the feeling of caring to the patient. Using effective communication skills, receive the prescription and initiate communication with patient that will lead to establishing rapport with patient.

2. Reading the Prescription

A brief examination of the prescription should be made immediately upon receiving it to verify the authenticity, correctness, completeness of prescription. Careful examination of the prescription should be attempted and if there is any doubt, consult other pharmacist or even the prescriber without arousing doubts or fears on the part of the patient.

3. Checking the Prescription

Pharmacist should check the prescription with major objective of determining safety and accuracy of the prescription. Thorough examination of the prescription for the following characteristics should be done:

a. **Legibility:** Illegible handwriting of prescriber makes it difficult for pharmacist to read the prescription. Every prescription should be read and understood completely before being dispensed. Every word, abbreviation and mark have a meaning. In case of doubt, consult experienced pharmacist or the prescriber.
b. **Legality:** Gross errors and omissions may occur in the prescription. Such prescriptions are not legally correct. A prescription becomes legal document only when it is signed by the prescriber, who is registered

medical practitioner. Moreover, the prescription should contain the information regarding all the parts of a typical complete prescription.

c. **Correctness:** One of the major responsibilities of a pharmacist are ensuring the rational use of medications. Ensuring five Rs, viz. Right drug, to a Right patient, in a Right dose, by Right route of administration, and for Right duration of time, helps the pharmacist to achieve this goal. Correctness of prescription in these terms need to be examined.

d. **Completeness:** Prescription is a vital link of communication between prescriber and pharmacist. A complete information regarding patient, prescriber, medications, their doses, strength, dosage form, frequency and duration of administration, directions for use, etc. is needed in the prescription. Pharmacist should be sure about these details before dispensing.

4. Consulting the Prescriber, if Needed

If the prescription cannot or should not be filled as written or if there is doubt regarding its meaning, intent or safety, the pharmacist should consult the prescriber to obtain the clarity. It needs to be done politely, tactfully and in dignified manner. Though this communication ultimately benefits patient, it is also in the interest of pharmacist and prescriber too. Hence, pharmacist should not hesitate to consult prescriber under such circumstances.

5. Proceed for Dispensing

Upon completion of first four steps of prescription handling, the last step is actual process of dispensing. Dispensing needs to be done with utmost care, full attention and following good dispensing practices.

Q.5. Write a note on "labelling of dispensed medications" or write in brief about 'main label' and 'auxiliary label' of dispensed medications.

Labelling of Dispensed Medications

- Labelling is defined as written, printed or graphical matter on any article or container which provides adequate and necessary information about the product.
- Drug labelling is also referred to as prescription labelling.

Importance of Drug Labelling

1. Drug labelling is important for identification of active ingredients or excipients of known drug and also the provision for guidance for patient to ensure safety and appropriate administration of the medicine.

2. Drug labelling is an informative tool for healthcare professionals, patients and pharmacists.
3. Labelling of dispensed medications is important for patient safety.
4. The drug labelling acknowledges patient's right to know and achieve optimum utilization of medicine.
5. The drug labelling provides health professionals with the necessary information for prescription and dispensing.

Drug Labelling Requirements in India

The drug labelling requirements in India are provided in Drugs and Cosmetics Rules, 1945; under Sections 96 and 97. The following particulars shall be printed on the label as per the rules:

1. Name of the drug (generic name, brand name)
2. Pharmacopoeia
3. Schedule
4. Warning of schedule
5. Net contents
6. Active ingredients
7. Manufacturer's name and address
8. Batch number
9. Manufacturing license number
10. Date of manufacturing
11. Date of expiry
12. Presence of R_x symbol
13. Red line
14. Warning about drug
15. Storage instructions

Main Label

- The place of the main label/dispensing label on the product is largely determined by the design of the medicine package and the manufacturers label.
- The main label/dispensing label is to be firmly attached to the immediate container.

  The main label includes the following information:

  i. Generic name
  ii. Year of first FDA approval
  iii. Severe "black box" warnings
  iv. List of approved indications
  v. Dosage details

vi. Contraindications
vii. Less severe warnings
viii. Adverse reactions
ix. Drug interactions
x. Use of specific population

Auxiliary/Ancillary Label (W. 23)

- It is also known as cautionary advisory label or prescription drug warning label.
- This label is added on to a dispensed medication package by a pharmacist in addition to the usual prescription label (main label).
- Auxiliary labels are defined as cautionary labels added to dispensed medicines to provide extra information to patient on the safe administration, use and storage.
- Auxiliary label includes warning and instructions such as:
  i. keep in refrigerator
  ii. Shake well before use
  iii. Do not take dairy products, milk, antacid or mineral supplements within two hours of each dose of this medicine.
  iv. Do not chew or crush
  v. For rectal use only
  vi. For external use only
  vii. Protect from sunlight
  viii. Take an empty stomach
  ix. For ophthalmic use only
  x. May cause urine discolouration
- Auxiliary labels are placed on a prescription vial may be placed vertically, horizontally or on the vial cap.
- Coloured axiliary labels are most popular among various pharmacies.
- Auxiliary label should only be used to remind or enhance instructions for use of warnings that have already been given by the pharmacist or doctor to the patient verbally.

Q.6. Define pictogram. Give the ideal features, importance and characteristics of pictogram. (S. 24)

Pictogram

- Pictogram is also called pictograph.
- Pictogram is a simple drawing, a chart or graph that uses pictures to represent data in a simple way.

- Pharmaceutical pictograms are the images that convey proper ways of storing, taking medications and precautions that need to be taken by patients taking medicines.

Importance of Pharmaceutical Pictograms (W. 23)

1. Pharmaceutical pictograms represent proper ways to take or store medications, precautions or other important information about a medication.
2. Pharmaceutical pictograms have been used to give instructions or warnings regarding health product usage.
3. Pharmaceutical pictograms are useful tools to recall of medicine-related information, attract attention and reduce misunderstandings regarding the drug treatment.
4. Pictograms are used in patient counseling to support the proper use of medicines.
5. Pictograms are useful to convey information especially to low-literate patients.
6. The pictograms are useful to remind people who cannot read when to take their medicines.

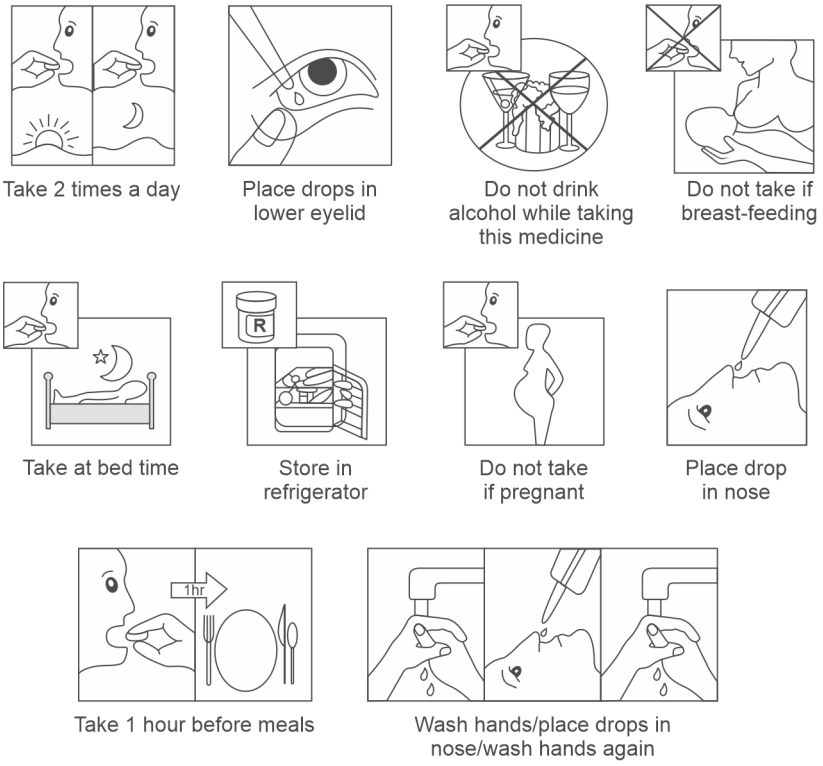
Ideal Features of the Pictogram

- It should be simple and clear.
- The graphic symbols that represent words or phrases.
- If possible, should be written in regional languages.
- It should be good illustrative.
- It should be very effective.

Based on recommendations given in several guidelines following are the most common characteristics in designing pictograms:

1. Collaborate with the target population and gain insight into their knowledge, beliefs, attitudes and expectations.
2. Use familiar objects and symbols.
3. Design simple, realistic pictures with a limited content.
4. Use the whole body image as isolated organs may cause confusion. However, pictures showing the face and the hands are well interpreted.
5. Use multiple-stage pictures with caution.
6. Use abstract symbols, depicting motion and conveying perspective with caution.
7. Use background space appropriately.
8. If used, colours should be as realistic as possible.
9. Use the appropriate size and magnifications.

10. Pre-test new pictograms in the target population.



Some examples of USP pictograms (US Pharmacopeial Convention, 1997)

Q.7. Describe the brief instructions on medication usage.

Brief Instructions on Medication Usage

1. Follow the instructions provided by healthcare professionals strictly.
2. Take medicines at right time.
3. Take exact dose of the medicine. Especially in case of oral liquids, take exact quantity as directed.
4. Stick to the dosage regimen.
5. Keep medicines away from the reach of children.
6. Store medicines in cool and dry place.
7. Keep your medicines in their original container tightly closed.
8. Do not remove, destroy the label of the medicine.
9. Read the label before taking out dose from the container.
10. Strictly follow the instructions regarding when to take medicine, e.g. half an hour before meals, on empty stomach, after eating food, etc.

11. Follow the instructions like, 'shake well before use', 'for external use only'.
12. Modern sustained release dosage form should be consumed as whole without crushing, breaking and cutting.
13. Use eye drops, eye ointments, eardrops, etc. as directed by the healthcare professional following hygienic conditions.
14. Understand and follow the instructions regarding use of rectal and vaginal medicines. Get your doubts clarified. Do not hesitate to ask pharmacist regarding use of such preparations.
15. Learn completely how to use nebulizers, inhalers, etc. from dispensing pharmacist.
16. Do not hesitate to consult healthcare professionals, if you have any doubt about taking medicines.
17. Do not forget to refill the prescription in time, if indicated.

Q.8. What do you mean by dispensing of medicines? Explain dispensing process of medication.

Dispensing

The process of preparing and supplying of medicines to a person, along with clear instructions, advice and counselling on how to use those medicines, is referred to as dispensing.

All the activities that occur between the time a prescription for medicine is presented and the time, the medicines issued to the patient are included in the dispensing process.

Steps Involved in Dispensing Process

1. Screening of Prescription

- Prescription is checked for its authenticity as it is a legal document.
- Prescription should be written, dated and signed by RMP as he is a legal person.
- Date, name, address, age and gender should be checked to ensure that medications are given to the right patient.
- Signature of prescriber, full name and registration number should be checked as it is a legal document.

2. Preparation and Assembling of Medications

- After checking the correctness of the prescription, the availability of medication is confirmed.
- The required quantities of medications are removed from the shelves and assembled in the containers.

3. Preparation of Bill and Supply of Medicines

The number of prescribed medications and quantitywise bill should be checked and rechecked to avoid introduction of any error in the dispensing process.

4. Counselling the Patient

- Patient counselling is an important step while dispensing the medications.
- A separate counselling area should be provided.
- Counselling rewinds the instruction given to the patient by the prescriber.
- Counselling will mainly focus on ensuring the compliance to medication by the patient.

5. Issue of Medications to the Patient

- Finally the bill shall be checked and signed by registered pharmacist.
- The salesperson then packs the medicines in a final suitable package and alongwith the copy of bill shall handover the medications to the patient.
- The second copy of the bill shall be retained in the pharmacy.

Q.9. Describe the concept of "Good Dispensing Practices".

Good Dispensing Practices (GDPs)

Good dispensing practice ensures that the right medicines of the desired quality are delivered to the right patient at the right time, with the correct dose, strength, frequency, dosage form and quantity as well as clear written and verbal instructions and appropriate packaging to maintain the medicine's quality and efficacy.

The foundation for good dispensing practice is a safe, clean and well-organized working environment. The dispensing environment consists of the following elements:

i. Qualified/trained staff
ii. Appropriate physical surroundings
iii. Adequate shelving and storage areas
iv. Proper work surfaces
v. Suitable equipment
vi. Necessary packaging materials.

Aims and Objectives of Good Dispensing Practices (GDPs)

1. To ensure that medications are dispensed in accordance with laws.
2. To supply patient the right medicines and improve patient's medication adherence.
3. To minimize occurrence of adverse drug reactions.
4. To avoid medication errors.

Good Dispensing Practices

1. Working Environment

It includes qualified trained staff, appropriate physical surrounding, adequate shelving and storage area, proper workplace, suitable equipment and necessary packaging material.

2. Receiving Prescription

Pharmacist shall have a professional look which receiving the prescription from the patient and shall create a long lasting impression in their minds.

3. Review and Interpretation of Prescription

Pharmacist should review and interpret the prescription following the "tips for pharmacist for efficient review".

4. Filling of Prescription

i. **Selection of medicines:** The medicines should be selected by reading the label at least twice to ensure accurate medicines.
ii. **Labelling:** All dispensed medicines should be labelled according to the requirements by law. Patient information leaflet (PIL) should be printed wherever possible.
iii. **Checking:** Checking and crosschecking of the prescription and filled medicine should be done to ensure that filled medicines are correct as prescribed in the prescription.

5. Issuing Medicines to the Patient

Issuing of medicines should be done by registered pharmacist by ensuring five Rs namely, Right patient, Right medicine, Right dose, Right route of administration and Right duration of time.

6. Medication Counselling

Medication counselling is important to the patient to ensure proper use of medicines dispensed. The records of patient counselling should be maintained.

Q.10. What are dispensing errors? Give the types and causes of dispensing errors. (S. 23, 24)

Dispensing Error

- Dispensing error is defined as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient or consumer.
- A dispensing error is an unintended failure in the patient's drug treatment process.
- These errors are made by the pharmacy staff, including the pharmacist, when dispensing medications to the patient.

Types of Medication Errors

1. Prescribing faults
2. Prescription errors
3. Transcription errors
4. Dispensing errors
5. Administration errors
6. Across setting errors

Categories/Types of Dispensing Errors

1. Dispensing medication for a wrong patient
2. Dispensing wrong medicine
3. Dispensing wrong drug strength (dose)
4. Dispensing the wrong quantity
5. Dispensing wrong dosage form
6. Dispensing with wrong information on label
7. Dispensing at wrong time
8. Failure to dispense
9. Dispensing medicines of inferior quality
10. Dispensing expired or almost expired drug

Reasons/Causes of Dispensing Errors

1. Wrong prescription evaluation
2. Dispensing the wrong medicine
3. Poor handwriting of the prescriber and poor communication amongst healthcare professionals
4. Ambiguities in product names, directions for use, medical abbreviations or writing
5. Poor dispensing procedures or techniques

6. Inadequate knowledge regarding drug usage and treatment
7. Poor understanding of the directions for use of the medicine
8. Inadequate knowledge regarding the adverse effect(s) of the drug
9. Unsafe working environment, lack of communication and a non-cooperative staff
10. Incorrect abbreviation use
11. Incorrect dosage and dosage form
12. Similar packaging and labelling
13. Wrong labelling
14. Providing a patient with the wrong quantity or strength of a medication
15. Dispensing medicine for the wrong patient
16. Putting incorrect information on the label
17. Dispensing of expired medicines.

Some of the common dispensing errors are:

1. Look-alike and sound-alike (LASA) drug names can lead to the unintended interchange of medicines that can result in patient injury or death.
2. Incorrect selection of a drug name that may appear close when entering orders into electronic order entry systems may lead to incorrect dispensing.

Q.11. Discuss various strategies to minimize dispensing errors.

Strategies to Minimize Dispensing Errors

1. **Confirm contents of prescription:** It is important to call and verify with the prescriber to clarify any uncertainties or doubts regarding the prescription, if any.
2. **Beware of LASA medicines:** A new, unfamiliar drug may be read as an older, more familiar one. Some of these errors can be fatal.
3. **Be cautious while interpretation:** Inappropriate abbreviations, misplaced zeros, decimal points, and faulty units are common causes of medication errors due to misinterpretation.
4. **Organize workplace:** Proper lighting, adequate counter space, and comfortable temperature and humidity in pharmacy can help facilitate a smooth flow from one task to the next, thus reducing the chances of dispensing errors.
5. **Reduce distraction when possible:** Avoid multitasking and distractions by improving the pharmacy's internal work environment.
6. **Reducing stress and balance workloads:** Give regular breaks and freedom from certain secondary responsibilities.

7. **Store medicines properly:** Store look-alike drugs away from each other, lock-up drugs with a high potential of error.
8. **Thoroughly check all prescriptions:** Repeated checks and counterchecks is an important strategy to minimize dispensing errors. It is advisable to have the rechecks done by another person, typically a pharmacist. If not possible, delay self-checking rather than continuous self-checks.
9. **Always provide thorough patient counselling/guidance:** Counselling should involve providing information and instructions on how to take the medication by appropriate route of administration.
10. **Educating patients:** Educate patients about safe and effective use of their medicines to promote patient involvement in their health care to reduce medicine errors.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. **Superscription** is represented by a symbol R_x.
2. **Inscription** is a part of prescription which contains names and quantities of prescribed ingredients.
3. Subscription contains **directions to pharmacist to dispense the dosage form**.
4. **Signatura or transcription** contains directions given by prescriber to the patient about, how and when to take the medicines.
5. The **pharmacist** is responsible for proper handling of the prescription.
6. Drug labelling is also known as **prescription labelling**.
7. **Prescription** is an order written by physician, dentist or any other registered medical practitioner (RMP) to the pharmacist to compound and dispense a specific medication for the individual patient.
8. The drug labelling requirements in India are provided in Drugs and Cosmetics Rules 1945, **under Sections 96 and 97**.
9. Main label is also known as **dispensing label**.
10. **Auxiliary label** is also known as ancillary label/cautionary advisory label/prescription drug warning label.
11. Pictogram is also called **pictograph**.
12. **Pictogram** is a simple drawing, a chart or graph that uses pictures to represent data in a simple way.
13. GDPs stand for **good dispensing practices**.
14. Prescription is a written order from **registered medical practitioner**.
15. R_x is used to denote **superscription**.

16. Signatura is a direction given to **the patient**.
17. The meaning of R_x is **'you take'**.
18. The prescription must be received and checked by the **pharmacist**.
19. The abbreviations in the prescription are written especially in **Latin** language.
20. In the day of mythology, the symbol R_x was considered as a **prayer to Jupiter**.
21. The last item written in the inscription is **vehicle, diluent**.
22. The part of prescription called subscription contains **direction to the pharmacist**.
23. BID means **twice a day**.
24. Prescription is derived from the latin term **'*praescriptus*'**.
25. PIL stands for **patient information leaflet**.

Chapter

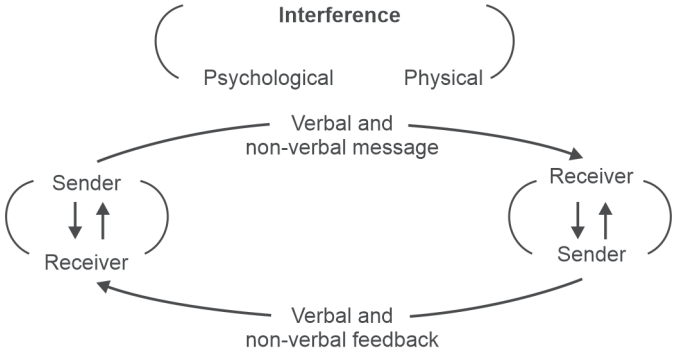
4

Communication Skills

Q.1. Define communication. Name the major elements of communication. Give the model of communication and principles of communication. (S. 23, 24)

Communication

- Communication is the act of giving, receiving and sharing intended information.
- Communication is the sharing of information, ideas, thoughts and feelings.
- Communication is nothing but passing the information from one person to another.
- Communication involves speaking, writing, listening and reading.
- Communication is a process in which messages are generated and transmitted by one person and subsequently received and translated by another.
- Communication process consists of five elements:
  a. Sender
  b. Message



Model of communication

c. Receiver
d. Feedback
e. Interference

Principles of Communication

1. **Effective:** Every communication should have a clear purpose and should achieve that purpose to be effective.
2. **Comprehensive:** The information communicated should be adequate and complete.
3. **Clarity:** The purpose of messages should be clear, worded in such a way that the receiver understands the same thing which sender wants to convey.
4. **Attention and style:** In good communication the receiver's attention is drawn to the message.
5. **Timeliness and urgency:** Communication should be done at proper time with the appropriate level of impact and urgency, to ensure that messages can be understood and achieve their objective.
6. **Communication is a bidirectional process:** For effective communication, a good communicator has to be a good listener.

Q.2. Define communication skills. Give the types of communication skills.

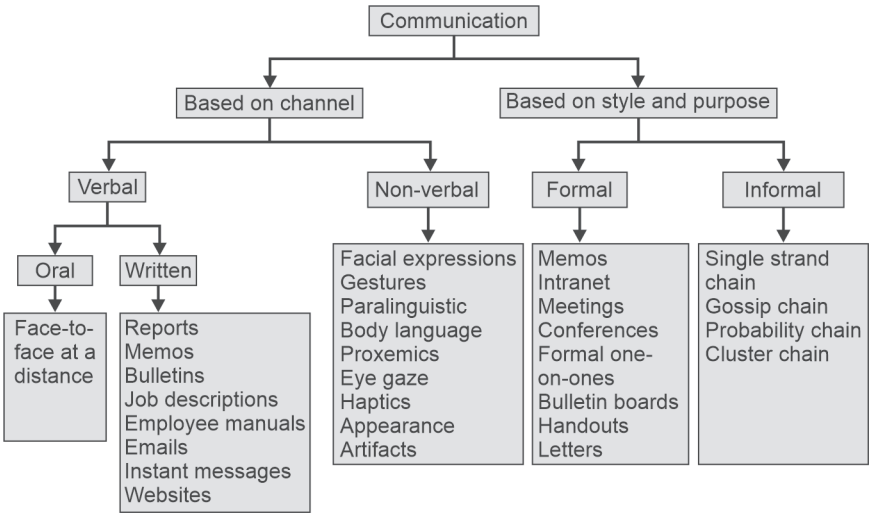
Communication Skills

- Communication skills are the abilities used while giving and receiving different kinds of information.
- Communication skill is the ability to use language and express information.
- Communication skill involves listening, speaking, observing and empathizing.
- Communication skill is helpful to understand the differences in how to communicate through face-to-face interactions, phone conversation and digital communications like e-mail and social media.

Types of Communication Skills

1. Verbal Communication Skills (W. 23)

- Verbal communication is the most common type of communication.
- Verbal communication occurs when we engage in speaking with others.
- It involves face-to-face, via mobile phones, radio and video conferencing.
- Verbal communication use words to convey message.



Types of communications

- In community pharmacy, communication between pharmacist and patient during patient counselling is the best example of verbal communication.

Limitations of Verbal Communications

1. Inability of patient to understand.
2. Patients with hearing and vision problems.
3. Environmental barriers such as disturbances due to noise, etc.

Steps to Improve Verbal Communication Skills at Community Pharmacy

1. Think before speaking
2. Use concise language
3. Understand audience
4. Mindful tone
5. Pay attention to body language
6. Active listening
7. Confident speaking
8. Show honesty
9. Practice skills
10. Acquire feedback

Types of Verbal Communication

a. One-to-one verbal communication
b. Communication over the telephone

a. One-to-one Verbal Communication

- One-to-one communication occurs when one person speaks with or writes to another.
- Communication in one-to-one situation is most effective when both parties are relaxed and take turns talking and listening.
- One-to-one communication also occurs when care professionals meet with and talk each other or with partners, relatives or friends of people receiving care.
- Effective communications are good at:
  i. Beginning the one-to-one information with a friendly, relaxed greeting.
  ii. Focusing on the objective of the interaction.
  iii. Ending the interaction in a helpful and positive way.
- Effective communication and interactions are important in the role-play of all healthcare professionals.
- In community pharmacy, pharmacists may use their one-to-one communication and interaction skills to find out information about health problems, may give advice or guidance to the patient.

b. Communication over the Telephone

- Communication over the telephone is an integral part of lives of the individuals.
- Telephone communication is one of the most important forms of communication within the community pharmacies.
- Telephonic communication is the transmission of information, over significant distances using a phone.
- The telephone is an important communication tool used to communicate with patient, patient's family members, physicians, nurses, other pharmacist and other healthcare professionals.
- The following are some tips for community pharmacists to enhance their telephonic communication skills:
  i. Speak slowly and clearly
  ii. Listen actively
  iii. Attention and clarify the content
  iv. Be friendly and welcoming
  v. Privacy protection
  vi. Be professional

Advantages of Telephonic Communication

1. We get immediate feedback to things we say.
2. The conversation is relatively private between us and the caller.

3. We can call someone anywhere on the planet.
4. Calls can be made 24 hours.

Disadvantages of Telephonic Communication

1. The person must be available to take your telephone call.
2. The line might be engaged when we call so we cannot speak to the person when we want.
3. We generally have to pay for every minute we spend on the call. In the case of overseas calls, it can be expensive.

2. Non-verbal Communication

- Non-verbal communication is the use of gestures, tone and voice, body language and facial expressions to communicate your thoughts and feelings without using words.
- It involves complex mix of behaviours, psychological and physical environment.
- Non-verbal expressions convey attitudes and emotions.

Q.3. What do you mean by verbal communication? Give advantages and disadvantages of verbal communication.

Verbal Communication

Verbal communication refers to the form of communication in which message is transmitted verbally, communication is done by word of mouth and not in writing.

Advantages of Verbal Communication

Following are the advantages of verbal communication:

- It saves time in communication.
- It is quick in obtaining feedback once delivered.
- It provides complete understanding of communication delivered and there is chance to make it more clearly in case of doubts in interpretation of words or ideas.
- It is more reliable method of communication.
- It is flexible and effective for all.
- It is cheaper way of communication and hence saves money.

Disadvantages of Verbal Communication

- Emotions are visible and hence lead to trouble in certain cases.
- It has no legal validity and hence will lead to problems in certain situations.

- It does not provide permanent record unless it is recorded with modern means of storage.
- It has issues when communicating with distant people.
- It is difficult for certain people to understand speech due to various speech tones used in verbal communication.
- This form of communication is not suitable for lengthy message.
- There is chance of leak of secret information with the help of modern devices such as polygraph or lie detector.

Q.4. Define written communication skills. Give the types, advantages and disadvantages of written communication skills or write an account of written communication skills. (S. 23)

Written Communication Skills

Written communication skills are those skills that use written words for conveying a message to other person.

- Written communication is the best channel for communicating with a large group of people, transmitting a large amount of data or keeping a record of the communication.
- Effective written communication is required for the creation of valuable promotional materials for business growth.

Types of Written Communications

1. Emails
2. Letters
3. Contracts
4. Briefs
5. Memos
6. Meeting agenda
7. Bulletins
8. Announcements

Advantages of Written Communication

1. **Easy to preserve:** The documents of written communication are easy to preserve. Oral and non-verbal communication cannot be preserved. If it is needed, important information can be collected from the preserved documents.
2. **Easy presentation of complex matter:** Written communication is the best way to represent any complex matter easily and attractively.

3. **Permanent record:** The documents of written communication act as a permanent record. When it is needed, important information can be easily collected from the preserved documents.
4. **Prevention of wastage of time and money:** Written communication prevents the waste of money and time. Without meeting with each other, the communicator and communicate can exchange their views.
5. **Accurate presentation:** Through the documents of the written communication, top executive can present the information more accurately and clearly. As it is a legal document, everybody takes much care to draft it.
6. **Use as a reference:** If it is needed, written communication can be used as future reference.
7. **Delegation of authority:** Written communication can help the authority to delegate the power and authority to the subordinate. It is quite impossible to delegate power without a written document.
8. **Effective communication:** Written communication helps to make communication effective. It is more dependable and effective than those of other forms of communication.

Disadvantages of Written Communication

1. **Expensive:** Written communication is comparatively expensive. For this communication, paper, pen, ink, typewriter, computer and a large number of employees are needed.
2. **Time consuming:** Written communication takes time to communicate with others. It is time consuming media. It costs the valuable time of both the writer and the reader.
3. **Difficult to maintain secrecy:** It is an unexpected medium to keep secrecy. Secrecy is not always possible to maintain through written communication.
4. **Lack of flexibility:** Since writing documents cannot be changed easily at any time. Lack of flexibility is one of the most important limitations of written communication.
5. **Delay in response:** It takes much time to get a response from the message receiver; prompt response is not possible in case of written communication that is possible in oral communication.
6. **Cost in record keeping:** It is very difficult and expensive to keep all the records in written communication.
7. **Complex words:** Sometimes, the writer uses complex words in writing a message. It becomes difficult to meaning out to the reader. So the objectives of the communication may lose.

8. **Lack of direct relation:** If there is no direct relation between the writer and the reader, writer communication cannot help to establish a direct relation between them.

Q.5. Discuss interactions with professionals and patient.

Interaction with Professionals and Patient

The pharmacist should communicate and cooperate effectively with the other members of healthcare team.

A. Interaction with Professionals

- Effective interaction between pharmacists and healthcare professionals is essential.
- Community pharmacists and doctors as well as their counterpart should adopt more interactive approaches to healthcare delivery.
- The interprofessional interaction involves individuals from different disciplines of healthcare system working together while contributing to patient care from their own professional perspective.
- Pharmacist should make interaction with other healthcare professionals for effective, safe and quality medicines and services to achieve optimal health outcomes.
- In institutional setting, the physician–pharmacist–nurse–patient professional relationship is established and effective interaction amongst them results in provision of better healthcare, improving patient's quality of life.
- Interaction between pharmacist and other healthcare professionals helps to improve therapeutic goals and enhance medication management.

Interactions with professionals are useful for:

1. Sharing specific medicine-related information.
2. Monitoring and assessing response to pharmacological treatment and progress towards therapeutic goals.
3. Ensuring safe procurement, adequate storage and dispensing of medicines as per regulation.
4. Providing information about drug-interactions and adverse effects.
5. Discussing medicine-related problems.
6. To overcome the problems of prescription errors, etc.

B. Interaction with Patients

- Effective interaction between pharmacists and patient is essential to improve the use of medications by patients to ensure optimal therapeutic outcomes.

- Pharmacist can improve patient adherence to drug therapy through appropriate strategies, including patient counselling and education.
- Pharmacist in all practice settings have opportunities to interact with patients through counselling, interviewing or educating.
- Pharmacist should utilize their knowledge, expertise and skills to provide best care for their patients.
- Community pharmacists openly communicate with patients and are accessible to provide advice and knowledge to the public and patient.
- During interaction with the patient, pharmacist should be able to:
  1. Understand the patient's illness experience.
  2. Know patient's social, psychological and biomedical factors.
  3. Perceive the experience of each patient as unique, and conceive the patient as a person.
  4. Promote impartial relationship with all patients.
  5. Develop self-awareness of the personal effects on patients.

The goals of effective and efficient pharmacist–patient interactions are:
- To improve the quality of care.
- To improve clinical outcomes.
- To improve medication adherence.
- To reduce healthcare cost.
- To reduce adverse drug reactions.

Q.6. Write a note on "body language is a type of communication". (S. 24, W. 23)

Body Language

- Body language is a type of communication in which physical behaviour, expressions as opposite to words are used to express or convey the information.
- Such behaviour includes facial expressions, body postures, gestures, eye movements, touch and the use of space.
- Body language is arranged of non-verbal signals that pharmacist can use to communicate his feelings and intentions towards patients and other professionals.

Features of Body Language

1. Body language is an art of communication without any use of words.
2. Body language is an expression of one's feeling and status.
3. Body language involves use of eyes, head, face, gestures, bodily movements, etc.

4. Body language tends to be the most popular means of communication.
5. Body language does not require any formal education for being understood.

Types of Body Languages

1. **Facial expressions:** The face is a mirror of the mind and can reflect your thoughts, worries and desires. Additionally, your face may reveal your feelings, such as disgust, happiness, sadness, excitement or boredom, no matter how much you try to hide them. Even subtle movements, such as pinching of the nose, narrowed eyes, smiling, pursued lips or the angle of the mouth, are means of nonverbal communication.
2. **Hand gestures:** We often use our hands to explain things. Hand movements and gestures often portray your clarity of thoughts, knowledge and confidence. For example, rubbing your palms together may be a sign that you are all geared up to start some work. These hand gestures may also reveal your nervousness.
3. **Eye movements and contact:** Eyes speak volumes. Not looking straight at the person or audience you are addressing, may signal a lack of confidence. Also, the size of your pupils may reveal a lot. For instance, widened pupils may represent interest.
4. **Head tilts:** Tilting your head towards the speaker suggests interest and concentration on the subject.
5. **Posture and body movements:** Movements and postures such as sitting cross-legged, shaking a foot, shrugging and slouching contribute to create an impression.
6. **Manner of walking:** The way a person walks may reveal a lot about their inner emotions, such as excitement, confidence or nervousness.
7. **Touching the face or hair:** Rubbing or touching the face or playing with your hair is also a means of nonverbal communication. For example, twisting your hair may seem like flirting, and pulling one's ears may look like indecisiveness.
8. **Way of talking:** This includes your voice modulation and volume, speed of talking and pronounciation.
9. **Space:** Standing too close or too far from the person may look awkward, which makes the space between each person is also important.
10. **Touching the other person:** Your touch reveals your emotions and personality which can include handshakes and hugs.

Q.7. What is patient interview? Explain various patient interview techniques. (S. 23)

Patient's Interview

The patient's interview is the primary way of obtaining comprehensive information about the patient in order to provide effective patient-centred care and the medication history component is the pharmacist's expertise

Patient Interview Techniques

The pharmacist can use the following tips during patient's interview:

1. **Building rapport:** The first impression you make on your patient will weigh the rest of the patient interview as well as affect your relationship with the patient. Building a good rapport sets the tone for the interview and allows the patient to feel comfortable with you, thereby making the lines of communication more open and honest.
2. **Active listening:** The first communication skill to be mastered is listening, specifically active listening.
3. **Respect patient's privacy:** When pharmacists ask more difficult questions, patient's privacy should be considered. He should not think about private or delicate questions, if an honest answer is goal. It is good to consider patient's situation before asking questions like possibility of pregnancy, psychiatric conditions, etc.
4. **Recognize face value:** Pharmacist should pay attention to patient's facial expressions. It may give clues regarding things they are not saying and may alert pharmacist about the problem and its severity.
5. **Consider your appearance:** Pharmacist's physical appearance is equally important as with their actual speech. The way pharmacist present himself determines the amount of information he would obtain from a patient.
6. **One thing at a time:** Pharmacist should make sure to ask their questions one at a time to avoid confusion of the patient while answering.
7. **Ask open-ended questions:** Open-ended questions are questions that require the patient to answer with more than a simple yes or no.
8. **Silence:** The role of silence during your interaction with the patient is more significant than you may realize. By allowing moments of silence after asking a question, the patient is able to reflect upon your question and provide more thoughtful and accurate response.

Q.8. Differentiate between formal and informal communication.

Formal communication	*Informal communication*
1. It is preplanned.	1. It is unplanned.
2. It follows the officially established chain of comments.	2. It is independent of the official chain of command.
3. It is slow due to the prescribed path.	3. It is fast due to no prescribed path.
4. It consists mainly of work-related messages.	4. It consists of both work-related and social messages.
5. The direction of flow is orderly and systematic.	5. The direction of flow is erratic and unsystematic.
6. It is easy to fix responsibility for messages.	6. It is possible to fix responsibility.
7. It stresses on authority and status.	7. It stresses on interpersonal relations.
8. It is generally in the written form.	8. It is usually verbal.
9. It is authentic, rigid and predictable.	9. It is unofficial, flexible and inflexible.
10. It does not carry rumors.	10. It may carry rumors.
11. It serves the needs of the organization.	11. It serves the social needs of the members, as well as the organization.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. **Communication** is the act of giving, receiving and sharing intended information.
2. Emails and websites are the types of **written communications**.
3. Communication is a part of **soft skills**.
4. **Sender** is the person who transmits message.
5. **Receiver** is the person who notices and decodes and attaches some meaning to a message.
6. Response to senders message is **feedback**.
7. **Social** context refers to relationship between the sender and the receiver.
8. Email is an example of **written communication**.
9. **Noise** refers to all disruption of communication.
10. **Formal** communications are preplanned.

Chapter

5

Patient Counselling

Q.1. Define patient counselling. Give the benefits of patient counselling. Give the objectives of patient counselling. (S. 23, W. 23)

Patient Counselling

Patient counselling is defined as providing medication information orally or in written form to the patients or their representative on direction of use, advice or side effects, precautions, storage, diet and lifestyle modification to give maximum benefits to the patients.

Benefits of Patient Counselling

1. Counselling is beneficial in understanding the patients and their illnesses, and to frame strategies to deal with the health issues.
2. Patient will have a better understanding of the purpose for the prescribed therapy and the appropriate use of the medication.
3. Counselling helps to ensure that correct medicine is supplied to the correct patient.
4. It helps in improving patient adherence to the treatment plan.
5. It helps to generate positive therapeutic outcomes that assist them to verify compliance.
6. It is beneficial in verifying patient's understanding, knowledge, and ability to self-manage therapy.
7. It helps to seek ways to encourage patients to learn about their treatment.
8. It helps to reduce medication error, improve prescribing practices and enhance patient monitoring.
9. It helps to decrease medication errors and misuse.
10. It helps to reduce healthcare costs of individual, society and government by preventing of adverse events.
11. Counselling provides an educational experience to both pharmacist and a patient.

12. It gives a pharmacist sort of satisfaction of having fulfilled their professional duty.
13. It helps to build trusting relationship with patients.

Objectives of Patient Counselling

1. The patient must be aware of the importance of medication in his overall health.
2. It is necessary to establish a working relationship that allows the continuous interaction and consultation.
3. It is necessary to improve patients' understanding of how to deal with medication side effects and drug interactions.
4. In disease treatment and self-care management, the patient becomes an informed, efficient, and active participant.
5. The pharmacist should be regarded as a healthcare provider who specialises in pharmaceuticals.
6. Adverse drug reactions and drug interactions should be avoided.

Q.2. Describe various stages involved in patient counselling. (S. 23)

Stages Involved in Patient Counselling

1. Introduction
2. Preparing for counselling session
3. Opening the counselling session
4. Counselling contents
5. Closing the session

1. Introduction

The patient counselling should begin with the introduction, wherein pharmacist introduces himself to patient. This builds trust among them.

2. Preparing for Counselling Session

The success of counselling depends on the knowledge and skill of the counsellor. The pharmacist should know as much as possible about the patient and his or her treatment details. If the patient is receiving a medication which is unfamiliar to the pharmacist, then a drug information reference should be consulted before counselling process.

3. Opening the Counselling Session

The pharmacist introduces himself to the patient and obtain his consent to advise the patient. Pharmacist should avoid asking awkward or curious questions, as this can affect the patient's emotional state.

4. Counselling Contents

The counselling content is considered as the heart of patient counselling. The pharmacists are required to provide following information during patient counselling:

- The medication's name and strength.
- Reason, why it has been prescribed or how it works.
- How to administer the medicine.
- The treatment's expected duration.
- Anticipated treatment benefits.
- Potential side effects.
- Possible dietary or medication interactions.
- Suggestions for proper storage.
- Minimum time required to demonstrate therapeutic benefit.
- What to do if the patient forgets to take a dose?
- Special monitoring needs, such as blood tests and arrangements for additional supplies.

5. Closing the Counselling Session

Closing is the final stage of counselling session and marks the close of the relationship. Closing session comprises clearing the patient's doubt about the session. If required, pharmacist offer their contact information to inspire the patient's concerning doubt about the same.

Q.3. Write in detail about "Patient Counselling Process".

Patient Counselling Process

- The counselling process is a plan that the pharmacist and the patient work together.
- Pharmacist should provide other supportive information asked by the patient.
- Pharmacist can note down the point, collect information and communicate using any suitable means.

Patient counselling process includes the following points:

1. The pharmacist must demonstrate how the medication can be removed from the container.
2. The pharmacist should clearly mention to the patient, how and by which route the medicine has to be administered.
3. In case of ophthalmic preparations, pharmacist should explain or if needed demonstrate instillation of an eye drop or administration of eye ointment.

4. Pharmacist should demonstrate the use of inhalers particularly to the new users, children and elderly.
5. Pharmacist should advice upon importance of timing of the dose for better outcomes.
6. Pharmacist should counsel on duration of using a medication.
7. He should provide information on storage conditions of medications and highlight its importance.
8. Pharmacist should make aware patients about potential side effects of prescribed medications or other medications currently in use.
9. The patient should be clearly informed about the possible interaction(s) of his prescribed drug with food, tobacco habits, alcohol consumption, and with others, if any.
10. Pharmacist should advise patient on allergies to discontinue the drug, if they experience rashes, itching or burning of skin, and to consult the doctor.

Q.4. Explain various barriers to effective counselling. (S. 23)

Barriers to Effective Counselling

1. Emotional factors
2. Pharmacy environment (physical barrier)
3. Pharmacist barrier to communication
4. Patient-related barriers
5. Miscellaneous barriers

1. Emotional Factors

Patients having an altered state of mind due to fear or illness, personal expenses, interruption of work and business. People are more inclined to trust or respond positively to another person if they have an emotionally satisfying relationship with them. Therefore, communicating social support is also important.

2. Pharmacy Environment (Physical Barrier)

Environmental factors in pharmacy such as lack of privacy, insufficient space and absence of furniture between pharmacist and patient during counselling prevent effective communication between patient and pharmacist.

3. Pharmacist Barrier to Communication

The barriers to effective communication by pharmacist include:

i. Lack of time
ii. Poor communication skills or lack of confidence in those skills.
iii. Lack of knowledge about current drugs or patient history and the patients failure to value the counselling session or pharmacist expertise.

4. Patient-related Barriers

These barriers are concerned with patient's educational backgrounds, attitudes, awareness regarding health and disease state, clinical situation, cultural issues, etc.

It includes:

i. Literacy
ii. Lack of interest
iii. Physically challenged patients
iv. Lack of trust
v. Gender differences

5. Miscellaneous Barriers

It includes:

i. Financial disincentives.
ii. Lack of regulatory guidelines.

Q.5. Explain different strategies to overcome the barriers to effective counselling.

Strategies to Overcome the Barriers to Effective Counselling

1. Measures Taken to Overcome Emotional Barriers

- When a pharmacist detects an emotional barrier in a patient, it is critical to address the emotional barrier first.
- Empathic reactions, also known as reflective responses, are the most effective technique to address patient's emotional issues.
- Empathy is a neutral process in which the pharmacist identifies with the feeling of the patient.
- A reflective response is the pharmacist's way of communicating to the patient to understand the patient's feeling.

2. Pharmacy Environment Measures

- Pharmacist should make necessary changes to their pharmacies to facilitate the practice of patient counselling.

- The following techniques may overcome physical barriers:
  a. Provide sufficient space and adequate furniture in the counselling room.
  b. To meet the patient, come out from behind the counter.
  c. Maintain effective eye contact with the patient.
  d. Place yourself at a comfortable distance from the patient, around 1.5–4 feet away.
  e. No other personnel should interrupt the patient session.
  f. Face the patient and talk clearly in loud tone which is to be heard by the patient.

3. Strategies to Overcome Pharmacist-related Barriers

The pharmacist should improve in the following areas to overcome this barrier:

a. Improve professional knowledge
b. Improve communication skill
c. Spare a maximum time
d. Develop confidence
e. Eliminate language gap
f. Provide sufficient staff for counselling

4. Strategies to Overcome Patient-related Barriers

a. Using communication skills, pharmacist may have the patient indicating that this interaction is beneficial to patient.
b. Create an interest in patients through proper communication and convince the patient that information is needed to achieve success in treatment.
c. Pharmacist needs to learn special communication skills, i.e. use of compliance aids, pictograms, etc.
d. Pharmacist should remove the patient's negative perception and develop a trust.
e. Women pharmacist may be appointed for the betterment of the female counselling.

Q.6. Explain/discuss patient counselling points for the following:

a. Hypertension
b. Diabetes
c. Asthma
d. Tuberculosis
e. Chronic obstructive pulmonary disease (COPD)
f. AIDS

a. Patient Counselling Points for Hypertension

- Hypertension means raised high blood pressure.
- Hypertension increases the risk of cardiovascular and related disorders such as heart attacks, strokes, health failure, etc.
  1. Educating the patient briefly about hypertension and drug prescribed to them.
  2. Advice the patient about how to take the medication and the direction given to the container or medication.
  3. Continue taking the drug regularly to avoid rebound hypertension.
  4. The pharmacist should inform the physician about drug interactions.
  5. Storage precaution should be informed to the patient to keep the medicines in cool and dry place.
  6. To avoid missing of the prescribed doses.
  7. Regular exercise, smoking cessation, reducing alcohol intake and salt should be advised to the patient.

b. Patient Counselling Points for Diabetes

Diabetes mellitus is a group of metabolic disorder characterized by hyperglycaemia.

1. Educate the patient about the signs and symptoms of diabetes.
2. Inform the patient to take the tablet at the same time each day after meal. Do not take these medicines without food.
3. The drugs should not be discontinued without advice of the physician, uncontrolled increase in blood sugar level may damage heart, kidneys, nerves, eyes, etc. Adverse effects of each medication should be informed to the patient.
4. Inform about drug interactions, e.g. the drug such as antipsychotics, diuretics and corticosteroids may reduce the efficacy of the glimepiride.
5. Inform the patient about storage of drugs in cool, dry place away from the children.
6. Antidiabetic treatment should be taken regularly without any break.
7. Inform the patient about diabetic microvascular complications such as diabetic retinopathy, foot ulcers, joint problems, etc.

c. Patient Counselling Points for Asthma

Asthma is a chronic inflammatory disorder of the airways characterized by paroxysmal or persistent symptoms such as dyspnoea, cough, wheezing, chest tightness and sputum production.

1. Educate the patient about the symptoms of asthma and medication prescribed to them (e.g. salbutamol 200 mg).

2. Inform the patient about administration of medication, e.g. use of rotahaler (metered dose inhaler).
   Steps to be Explained Using Metered Dose Inhaler (MDI)
   a. Remove the cap.
   b. Shake inhaler before each use for 5 seconds.
   c. Sit straight upright or stand up.
   d. Tilt the head slightly to the back.
   e. Breath out fully.
   f. Put the mouthpiece in the mouth.
   g. Breath in slowly.
   h. Press inhaler firmly.
   i. Remove the inhaler from mouth.
   j. Hold breath for 10 seconds.
   k. Breath out slowly.
3. Inform about the possibility of side effects and interactions with prescribed bronchodilator. The side effects of salbutamol such as headache, dry mouth, feeling nervous are to be informed to the patient.
4. Inform about drug interactions like salbutamol should not be taken with antihypertensives like β-blockers.
5. Inform the patient to store the medications and inhalers in cool and dry place away from children.
6. Do not miss the dose or never take double dose to compensate the missed dose.
7. Inform the patient to ensure regular check-up with doctor.
8. Inform the patient to stop smoking and avoid exposure to respiratory irritants.

d. Patient Counselling Points for Tuberculosis (S. 23. W. 23)

Tuberculosis is a potentially serious infectious disease that mainly affect the lungs. The bacteria that cause tuberculosis are spread from person to person through tiny droplets released into the air via coughs and sneezes.

1. Educate the patient about the symptoms and treatment and expected outcome as well as side effects of anti-TB drugs.
2. Patient should be informed that during first week of therapy, there will be minor adverse effects, so not to discontinue first-line medication therapy.
3. Inform the patient about multiple drug therapy such as INH + rifampicin + pyrazinamide, etc.
4. Inform the patient to avoid development and resistance. INH may cause nausea, vomiting and stomach upset should be informed to doctor.

5. Inform the patient about drug interaction with INH by acetominophen, MAO inhibitors, etc.
6. Inform about storage of drugs in cool and dry place.
7. Inform about regular taking of drugs from time to time.
8. Pharmacist should use directly observed therapy (DOT) to ensure efficacy and minimize resistance.
9. Ask the patient to avoid alcoholic beverages.
10. Patient information leaflet is given to the patient for more information.

e. Patient Counselling Points for COPD (Chronic Obstructive Pulmonary Diseases)

Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs. Its symptoms include breathing difficulty, cough, mucus production, flares and wheezing.

1. Pharmacist should screen patient for COPD via disease risk assessment questionnaire.
2. Pharmacist should provide advice and education on dosage, treatment expectations and the importance of adherence.
3. Instruct patient to stop smoking and create awareness about risk prevention and also provide nicotine replacement advice.
4. Encourage patients with long-term COPD to receive a yearly flu vaccination.
5. Patient must be provided with continued education through demonstration and monitoring of inhaler use and its appropriate storage condition.
6. Provide support using 'self-management' plans to take control of their condition.
7. Identify patients for medication non-adherence and intervene as necessary.
8. Provide advice on lifestyle adaptation such as diet, nutrition and exercise.
9. Make patients aware of significance of air quality and suggest avoiding rigorous outdoor exercises or remaining indoors during pollution episodes.
10. Several types of inhalers, including bronchodilators, inhaled corticosteroids and combinations are used in the treatment of COPD, The use of inhaler need to be demonstrated to the patient. For example,

the Ellipta inhaler in which umbeclidiium (LAMA) and vilanterol (LABA) combination is used for treating COPD is stepwise explained here:

a. **Prepare the dose:** Inhaler should not be shaken. Open the cover when ready to inhale. Slide the cover down until a 'click' is heard. The dose counter counts down by '1' to confirm (if dose counter does not count as click is heard, the inhaler will not deliver a dose and should be taken back to pharmacist).
b. **Inhale the product:** Hold the inhaler away from mouth breathing out as far as comfortable (but not breath out into inhaler). Place mouthpiece into the mouth and close the lips firmly (ensure that air vents are not blocked by fingers during use). Inhale with one long steady deep breath in. Hold the breath for 3–4 seconds. Remove the inhaler from mouth. Breath out slowly and gently. Clean the mouthpiece by dry tissue before closing cover.
c. **Close the cover:** Slide the cover upwards as far as it goes to cover the mouthpiece.

f. Patient Counselling Points for AIDS

Human immunodeficiency virus (HIV) is a virus that attacks the body's immune system and cause AIDS. AIDS can include rapid weight loss, recurring fever, extreme and unexplained tiredness, prolonged swelling of lymph glands.

1. Pharmacist should take into account the communication style and literacy level of each patient when they are providing counselling of AIDS.
2. Pharmacist should identify a person potentially infected with HIV, and facilitate discussion about ways to cope with knowing one's HIV status.
3. Provide information about the prevention of HIV transmission and the support those affected directly and indirectly by HIV.
4. Help patient by counselling and monitoring response to therapy, by guiding on changes of care, and by undertaking scholarly and professional activities.
5. Provide individual relationship and family counselling to prevent and reduce psychological morbidity associated with HIV infection and disease.
6. Instruct patient to use an effective barrier method during sexual activity.
7. Inform the patient about anti-HIV drugs like zidovudine, lamivudine, ritonavir, etc.

8. Advice the patient not to miss the dose of drug.
9. Pharmacist should monitor patients for medication adherence. Inform and convince the patient that antiretroviral therapy is a lifelong commitment.
10. Convince the patient to follow healthy lifestyle, sticking to balanced diet, regular exercise and quit smoking.

Q.7. Define "Patient Information Leaflets" (PIL). Give uses/importance/benefits of PIL.

Patient Information Leaflets (PIL)

- Patient information leaflets are leaflets containing specific information about medical conditions, doses, side effects that packed with medicines to give the user information about the product.
- Patient information leaflets are defined as written or printed document in simple language that provide the essential information which patient need to enable them to use medicines safely and gain the most benefit.
- PIL is the European adaptation of package insert.
- PIL is considered as a very useful tool in verbal counselling of literate patients.

Contents of Patient Information Leaflets (PIL)

PIL includes:

- Identity of the medicine
- Therapeutic indications
- Prior information
- Dosage
- Description of side effects
- Additional information.

Uses/Importance/Benefits of Patient Information Leaflet (PIL)

1. PILs are widely used as good quality sources of medication and health information.
2. PILs provide information to patients about the administration, precautions and potential side effects of their prescribed medication.
3. PIL provide immediate opportunity for patients to participate in their own care.

4. Reading PIL patients can understand their diagnosis, treatment and/or prognosis with much more clarity and can make informed choices about their healthcare.
5. PIL is used to encourage patients for their better participation in managing long-term conditions or for promotion of well-being.
6. PILs being a part of patient education or health promotion are used to support disease prevention, medication treatment and compliance objectives.
7. PILs can be predominantly used to support pharmacist–patient counselling through dialogue and for patient empowerment.

Q.8. Define Patient Package Insert (PPI). Give the contents, importance and benefits of PPI. (W. 23)

Patient Package Insert (PPI)

Patient package insert is defined as an officially technical document and prescription of OTC medications containing information about that medication and its use, written in plain language intended for the end-user, the person who will take the drug or give the drug to another person such as a minor.

- Patient package insert (PPI) is a part of regulatory requirements of a prescription drug labelling.
- Patient package insert (PPI) is a paper handout that comes with many prescription medicines.
- Package insert is a document included in package of medication that provides information about that drug and its use.
- PPI is a FDA approved document provided along with prescription medication to provide additional information about that drug.
- Patient package insert is also known as prescription drug label (PDL) or prescribing information (PI).

Contents of Patient Package Inserts (PPIs)

1. Description of drug/dosage
2. Clinical pharmacology
3. Indications and use
4. Contraindications
5. Warnings
6. Precautions
7. Adverse reactions

8. Non-clinical toxicity
9. Drug abuse and dependence
10. Overdosage
11. Dosage and administration
12. Dosage form and strength
13. Storage and handling
14. Name and address of the manufacturer
15. References.

Importance and Benefits of PPI

1. PPI helps healthcare providers to prescribe a drug properly, including counselling patients for approved uses for the drug, contraindications, potential adverse reactions, available formulation and dosage, and how to administer the drug.
2. Segmentation of information in PPIs helps healthcare providers to effortlessly recognize the data required for directing patients.
3. PPIs help patients to administer medications appropriately.
4. It provides vital medication data for use of OTC medications.
5. Simplicity of PPI makes it easy to comprehend the abstracted version data provided.
6. Educated persons can easily understand information provided in PPI.
7. PPIs are designed to assist or help patient by utilizing illustrations.
8. The clarity of text and its adequate position help patient to search for desired information.
9. PPI improves patients' learning about drugs.
10. It integrates increased medication knowledge into a balanced benefit/risk perception.

Q 9. Give/state usefulness of patient information leaflet (PIL).

Usefulness of Patient Information Leaflet (PIL)

1. It is the best way to educate the patients about their medications.
2. It ensures patient compliance and rational use of medications.
3. It helps to bridge the information gap between patient and physician.
4. It increases the knowledge and satisfaction with the information provided.
5. It ensures more active participation in medical decisions.
6. It ensures achievement of desired healthcare outcomes.
7. It increases the self-reliance and reduces repeated consultations.
8. It contributes a better outcome of illness in better informed patients.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. Counselling is beneficial in understanding the **patients and their illnesses**.
2. Counselling is a **bidirectional process**.
3. COPD stands for **chronic obstructive pulmonary disease**.
4. Patient counselling helps to **motivate the patient to take medicine for improvement of his/her health status**.
5. PIL stands for **patient information leaflet**.
6. **Counselling content** is the heart of patient counselling session.
7. Medication history should be taken of at least **last 3 months**.
8. Patient package insert (PPI) is a part of **regulatory** requirements of a prescription medicines.
9. **FDA** determines the requirements of patient package inserts.
10. PPI is a **FDA** approved document along with prescription medication.
11. Patient package insert (PPI) is also known as **prescription drug label (PDL)**.
12. OTC drugs mean **over-the-counter drugs**.
13. A patient package insert is known as **medication guide**.
14. **Improving the counselling session**, the pharmacist introduces himself to the patient.
15. The **European Commission** issued the "Guideline on the readability of the label and package leaflet and medicinal products for human use.
16. In USA, the concept of a patient package insert is in practice **since 1968**.
17. CMI means **consumer medication information**.

Chapter

6

Medication Adherence

Q.1. Define medication adherence. Explain factors affecting/ influencing non-adherence. (S. 23)

Medication Adherence

Medication adherence is defined as the extent to which patient take medication as prescribed by their doctors.

- WHO defines medication adherence as "the degree to which the person behaviour corresponds with the agreed recommendation from a healthcare provider.
- Adherence signifies that the patient and doctor collaborate to improve the patient's health by integrating the doctors medical opinion and the patient's lifestyle, values and preferences to health value.
- Medication compliance is the extent to which a patient's behaviour matches the prescribers advice.
- Patient compliance is defined as "a faithful adherence by the patient to the prescribers instructions".
- Concordance is used in place of compliance/adherence.

Patient Non-adherence

Patient non-adherence means the patient is not following the instructions for use of prescribed drugs.

Factors Affecting/Influencing Non-adherence

1. Patient-related factors
2. Disease-related factors
3. Doctor-related factors
4. Prescription-related factors

5. Pharmacist-related factors
6. Health system-related factors

***1. Patient-related Factors* (S. 24)**

a. **Patient age, sex, education, etc.:** Generally, younger patients and elderly show poor adherence. Women tend to be more adherent than men.
b. **Education:** Illiteracy as opposed to educated people show poor adherence. Awareness regarding health, health problems, importance of health, all play important role in matters of adherence.
c. **Physical disability:** Poor eyesight, restricted physical movements contribute to poor adherence.
d. **Cultural attitudes:** Ignorance about importance of modern medicine, cultural, misbeliefs, preference for traditional remedies leads to poor adherence.
e. **Economic factors:** Cost of medicines and affordability influence the purchase of medicines. Medicines are taken less frequently than prescribed or prematurely discontinued because of cost. This results into non-adherence.

2. Disease-related Factors

a. **Too many drugs prescribed:** Thoughtlessly prescribing too many drugs (multidrug therapy) leads to a greater risk of non-adherence. Similarity in appearance (e.g. size, shape, colour) of prescribed drugs may lead to confusion of the patient and thus to the non-adherence.
b. **Poor interaction with patient:** The instructions regarding why, how and when to take medicines should be given to patients using effective communication skills. Effective interaction with patients largely result into adherence. Sometimes, patients do not follow the instructions or there may be wrong interpretation of the instructions given by physician, resulting into non-adherence.
c. **Failure in inspiring confidence:** Doctor's overall attitude towards patient, failure in establishing good rapport with patient and demonstrating concern about patient all have powerful effect to encourage confidence in patient. Failing to inspire confidence in patients leads to non-adherence.

3. Doctor-related Factors

a. **Too many drugs prescribed:** Thoughtlessly prescribing too many drugs (multidrug therapy) leads to a greater risk of non-adherence.

Similarity in appearance (e.g. size, shape, colour) of prescribed drugs may lead to confusion of the patient and thus to the non-adherence.

b. **Poor interaction with patient:** The instructions regarding why, how and when to take medicines should be given to patients using effective communication skills. Effective interaction with patients largely results into adherence. Sometimes, patients do not follow the instructions or there may be wrong interpretation of the instructions given by physician, resulting into non-adherence.

c. **Failure in inspiring confidence:** Doctor's overall attitude towards patient, failure in establishing good rapport with patient and demonstrating concern about patient all have powerful effect to encourage confidence in patient. Failing to inspire confidence in patients leads to non-adherence.

4. Prescription-related Factors

a. **Illegible and inaccurate prescription:** Illegible prescription may lead to conclusion that doctors concern to patient is questionable. Prescribing high dose leading to toxicity. Bad prescribing ultimately resulting into dispensing error, all these things lead to poor adherence.

b. **Failure to refill prescription:** For different reasons, patients avoid or neglect the refilling of prescription, especially in cases of chronic diseases.

c. **Polypharmacy:** Sometimes, the prescription may be too complex due to multiple drug therapy prescribed. It has been shown that the greater the number of medications, the poorer the adherence. Multiple doses also decrease adherence if more than two doses per day are prescribed.

5. Pharmacist-related Factors

a. **Professionalism:** Pharmacist information and advice can be valuable reinforcement. Patient counselling is a part of clinical pharmacy practice that achieves the objective of providing maximum therapeutic benefit to the patient. Pharmacist should inform, educate and counsel patients for each medication in the patients drug regimen. This practice of pharmacy ensures better adherence.

b. **Patient counselling:** Patient counselling by the pharmacist, before dispensing of prescription in the matters such as safe and appropriate use of medications, name and purpose of medications, administration of drugs, timing of the dose, duration of use, side effects and refill information have profound effect on adherence by the patient.

6. Health System-related Factors

a. **Long waiting times:** When a patient experiences a significant waiting in getting to see his physician or having his prescription filled, the annoyance may contribute to poor adherence. The reduction in these delays have resulted in more favourable patient adherence.
b. **Uncaring staff:** The healthcare system may be biggest hinderance to adherence. Uncomfortable environment, uncaring staff, exhausted drug supplies have a major impact on adherence.
c. **Accessibility:** In many of the situations, there is a problem of distance and accessibility of the clinic from the patient. Studies have shown that patients furthest from the clinic are least likely to adhere to the treatment in the long-term.

Q 2. Discuss various strategies to overcome medication non-adherence. (S. 23)

Strategies to Overcome Medication Non-adherence

The pharmacist is a health professional to assume the major responsibility in minimizing non-adherence.

a. Understand Patient's Medication-taking Behaviours

Ask the patients whether they have any in trouble taking or affording their medications. For example, ask: 'How often do you miss taking of medications?' Create a free environment so patients feel comfortable, speaking openly and honestly. Healthcare professionals cannot help their patients if they do not know there is a problem.

b. Communicate about Side Effects of Medication

Patients who encounter side effects are less likely to stop taking the medication when they know about the potential side effects in advance. Physician should talk about these side effects and explain how to prevent an adverse drug reaction.

c. Collaborate with Patients

What time of the day would be best for the patient to take their medications? If the medication does not come with specific instructions (i.e. take one pill in the morning), then brainstorm ideas with the patient. Ideally, it would be a time when the patient knows they will generally be free.

d. Consider the Financial Burden to the Patient

If patients cannot afford their medications, they may simply stop taking them. To combat this, physicians can connect patients with pharmaceutical

company-based assistance plans, state-based assistance plans, and pharmacies that provide 30-day supplies of widely prescribed medications. Prescribing lower-cost generic medications is also helpful to proper medication adherence.

e. Reduce Complexity

Reducing the complexity of the drug regimen will increase patient medications adherence. Combination of medicines can be provided. Another is to prescribe medications with once-daily dosing instead of multiple doses per day.

f. Follow-up with Patients

Physicians should send medication reminders to patient via text, email or phone calls. Also, schedule follow-up appointments to discuss medication compliance. Proper counselling should be done of patient about why they need to take their medication as prescribed even when they are symptom-free.

g. Use of Technology

Use of proper technology, e.g. e-pill medication devices (e.g. automatic pill dispensers, pillboxes and timers and alarm watches) can help improve patient medication compliance.

h. Nurture Relationship with Patients

Patients interact with their pharmacist much more often than with their prescriber. Pharmacist and pharmacy staff should take at least a few minutes to talk and establish a relationship with every patient who walks through the door.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. **Medication non-adherence** can lead to hospital readmissions and expensive treatments that drive higher healthcare costs.
2. EHR stands for **electronic health record**.
3. A patient is considered adherent if they take **80%** of their medications as prescribed.
4. A faithful adherence by the patient to the prescriber's instructions is called **patient compliance**.
5. The term **concordance** is used in place of compliance/adherence.

Chapter

7

Health Screening Services in Community Pharmacy

Q.1. Define "Health Screening Services". Give benefits/scope of importance of health screening services. (W. 23)

Health Screening Services

Health screening services are the services provided by healthcare professionals to screen the health status of individual with or without positive signs or symptoms.

Scope and Importance/Benefits of Health Screening Services

1. It helps to detect the health problems easily which are easier to treat, e.g. certain types of cancer, hypertension, diabetes, osteoporosis, cholesterol.
2. Early detection of problem lowers the risks of serious complications.
3. It helps in creating awareness and understanding of your own health.
4. It helps to confirm that you are living a healthy lifestyle.
5. It helps to provide timely treatment and most effective treatment.
6. In case of people who have family history of cardiovascular diseases, stroke, diabetes, it provides effective ways of prevention.
7. Screening not only saves lives but also improves quality of life by preventing onset or reducing complications of chronic disease.

Health screening services include:

1. Measurement of blood pressure
2. Blood sugar level testing
3. Assessment of lung function
4. Measurement of body mass index (BMI)
5. Lipid profile checking
6. Assessing drug addiction, abuse and misuse

7. Nutritional assessment
8. Pulmonary function tests
9. Health awareness and adherence testing
10. Smoking and alcohol cessation.

Q.2. What are the various facilities needed in community pharmacy to provide health screening services?

Following are the facilities required in community pharmacy to provide health screening services:

1. A separate area meant for screening services should be made available in the pharmacy. Alternatively, an independent patient counselling area can be used for screening services.
2. The instruments required for screening services should be available in the pharmacy.
3. The instruments used for screening services (clinical measurements) need to be calibrated for accuracy, precision from time to time.
4. Pharmacist involved in these activities should have adequate knowledge and practical skills to handle and use the instruments for clinical measurements.
5. Pharmacist should have adequate training and expertise in clinical measurement activities.
6. For each clinical measurement activity, a standard operating procedure (SOP) should be available and be strictly followed.
7. Records of measurement should be maintained.
8. Pharmacist should maintain confidentiality of the patients and the results of their clinical measurements.

Q.3. What are the guiding principles of community pharmacists for providing health screening services?

Guiding Principles for Screening Services

1. The purpose of screening services is for early detection of disorders if any or for monitoring of therapeutic outcomes but is never for diagnosis.
2. The results of screening tests should neither be the basis for pharmacist to suggest treatment nor for the modification of therapy prescribed by the physician.
3. Based on the results of the tests, patient should be advised to consult physician.
4. A record of test results with possible explanation should be given to the patient.

5. At the most pharmacist may suggest non-pharmacological measures for controlling the condition but inform the patients to consult the physician.

Q.4. Explain the procedure of blood pressure measurement as a healthy screening service provided in the community pharmacy.

Measurement of Blood Pressure

- Blood pressure is a pressure exerted by blood on the walls of arteries.
- There are two types of blood pressure:
  a. Systolic BP
  b. Diastolic BP
- The normal value of blood pressure is 120/80 mm Hg.
- Blood pressure is measured by an instrument called sphygmomanometer.
- There are three types of sphygnomanometers available:
  a. Mercury manometer type
  b. Aneroid type
  c. Digital blood pressure monitor
- There are two methods of BP measurement:
  a. Palpatory method
  b. Auscultatory method

Methods of Measuring Blood Pressure

1. Ask the patient to lie on the table comfortably and measure the pressure when the patient is at rest both physically and mentally.
2. Wrap the rubber bag with cuff round the upper arm just above elbow (about 2 cm above elbow).
3. Raise the pressure of air, by pumping air with pressure pump till pulsation of brachial artery at elbow disappears. It is perceived by keeping the fingers of one hand on brachial artery.
4. Now release air from the bag by turning the knob with the other hand.
5. Note the reading on the manometer when pulsation at elbow is perceived.
   This reading is systolic blood pressure measured with palpatory method. Take three consecutive readings for systolic blood pressure.
6. Now for measuring both systolic and diastolic blood pressure using auscultatory method; keep diaphragm of stethoscope on brachial artery and ear pieces in the ears.

7. Raise pressure by pumping air with pressure pump, till pulsation at brachial artery disappears at elbow. This pressure is slightly above the earlier reading of systolic blood pressure.
8. Release slowly the air by turning the knob and take reading on manometer at soft puffing noise. This reading is known as systolic blood pressure. Continue to release the air from the bag till sound begins to fade, the reading on manometer at this point is diastolic pressure.

Blood Pressure Categories

Sr. No.	*Blood pressure category*	*Systolic mm of Hg*	*Diastolic mm of Hg*
1.	Normal	<120	<80
2.	Prehypertension	120–139	80–89
3.	Hypertension stage-1	140–159	90–99
4.	Hypertension stage-2	≥160	≥100
5.	Hypertensive crisis	>180	>110

Q.5. Explain the procedure of measuring capillary blood glucose level by using glucometer. (S. 24)

Measurement of Capillary Blood Glucose Level

- A blood glucose test measures the glucose levels in the blood.
- High blood glucose level (hyperglycemia) is a sign of diabetes mellitus.
- Normal blood glucose level:
  Fasting level—70 to 110 mg/dl
  After meal—140 to 180 mg/dl
- Frequency of testing of glucose:
  1. Fasting level
  2. 30 minutes prior to meals
  3. 2 hours after meals
  4. Bed time
- Sites of blood sample collection:
  1. Fingertips
  2. Palm
  3. Upper arm
  4. Forearm
  5. Calf or thigh

Procedure of Measuring Capillary Blood Glucose

- Wash the hands and wipe to dry thoroughly.
- Remove the test strip from the container and close the container tightly.

- Insert metallic end of the strip into the strip slot of the monitor.
- Using the lancing device prick the fingertip.
- Touch the yellow edge of the test strip to the blood drop. Once the blood covers the yellow edge, the earlier symbol on the display is replaced by a flashing hourglass symbol, at this moment remove the finger from test strip.
- Within a few seconds, the test result is displayed on the display of the monitor.

Blood Sugar Levels

Adult individual	*Fasting blood sugar mg/dl*	*Postprandial blood sugar mg/dl*
Normal	70–100	70–140
Prediabetics	101–125	141–200
Diabetics	≥125	≥200

Q.6. Discuss the importance of assessment of lung function in COPD.

Assessment of Lung Function

- Asthma and COPD are the most common disorders of respiratory function.
- In both the conditions, there is resistance to airflow due to narrowing of airway passage, making it difficult to breath.
- Lung function assessment is useful in these situations.
- Peak expiratory flow rate (PEFR) is the test that measures how fast a person can exhale air.
- This test helps to diagnose and check lung problems such as asthma and COPD.
- Normal adult peak flow rate score ranges between 400 and 700 litres per minute.

Measurement of Peak Flow Rate

1. Ensure that the pointer on the peak flow meter is at the lowest point, i.e. on the numbered scale at zero.
2. Stand up straight or sit in the chair straight upright.
3. Take deep breath (as deep as you can).
4. Put the mouthpiece of the meter in the mouth and close the lips tightly. Blow out as hard and as quickly as possible (blow fast and hard till almost all the air from the lungs is expelled).

5. Upon blowing, the pointer on the scale will move along the numbered scale. Note the number indicated by the pointer.
6. Repeat the above steps two more times and you will have three number readings.
7. Record the highest of the three readings (do not calculate average).
8. Measure the peak flow rate at the same time each day (measure two times daily at 7–9 am in the morning and 6–8 pm in the evening).
9. Keep the record in the form of chart of peak flow rates, which can be shown to the healthcare provider.

Q 7. What is Body Mass Index (BMI)? Give its importance. (S. 23)

Body Mass Index (BMI)

- Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women.
- Obesity means having excess of body fat.
- Obesity leads to diseases like diabetes, hypertension, gallstones, cancers, osteoarthritis.
- Body mass index is simply calculated by using a persons height and weight.
- The formula of BMI is

  $$BMI = kg/m^2$$

  where, kg is the weight of person in kilogram and the height is in m^2.

BMI and Related Weight Status

BMI	*Weight status*
<18.5	Underweight
18.5–24.9	Normal
25–29.9	Overweight
≥30	Obese
≥40	Excessively obese

Importance of BMI

1. BMI is important to know whether your weight is in proportion to your weight.
2. It determines any health risks.
3. It is an indicator to avoid the risk of obesity and further complications.

Q.8. Explain lipid profile testing/measurement.

Lipid Profile Measurement

- A lipid panel is a blood test that measures the amount of fat molecules/lipids in the blood.
- The panel includes four different cholesterol measurements and a measurement of triglycerides.
- High lipid levels in blood causes risk of cardiovascular problems.
- Other common names for a lipid profile includes:
  a. Lipid panel
  b. Lipid test
  c. Cholesterol panel
  d. Coronary risk panel
  e. Fasting lipid panel or non-fasting lipid panel.
- Lipid panel measures five different types of lipids from the blood sample:
  a. Total cholesterol
  b. Low-density lipoprotein (LDL) cholesterol
  c. Very low-density lipoprotein (VLDL) cholesterol
  d. High density lipoprotein (HDL) cholesterol
  e. Triglycerides
- Normal values of lipid profile:
  a. Total cholesterol: <200 mg/dl
  b. HDL cholesterol: >60 mg/dl
  c. LDL cholesterol: <100 mg/dl
  d. Triglycerides: <150 mg/dl

Measurement/Procedure of Lipid Profile Test

- A cholesterol test is a blood test, usually done in the morning if you fast overnight.
- Blood is drawn from a vein, usually from arm.
- Before insertion of needle, puncture site should be cleaned with antiseptic and an elastic band is wrapped around your upper arm.
- After needle is inserted, a small amount of blood is collected into a vial or syringe.
- Once the enough blood is collected, the needle is removed and the puncture site is covered with a bandage.
- The blood is tested for the range of cholesterol in the blood.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. Body mass indexing (BMI) is the most common screening test for **obesity**.
2. Sphygmomanometer is used to measure **blood pressure**.
3. Pap smear test is used for screening of **cervical cancer**.
4. The normal level of glucose during fasting is **70–110 mg/dl**.
5. Defects in the secretion or action of insulin is observed in patient suffering from **diabetes**.
6. The normal level of glucose after meal is **140–180 mg/dl**.
7. Mammogram is look for early signs of **breast cancer**.
8. The normal level of high-density lipoprotein (HDL) cholesterol is **above 60 mg/dl**.
9. Lipid profile checkup is suggested for individual suffering from **obesity**.
10. **Glucometer** is an instrument used to check blood glucose level.

Chapter

8

Over-the-counter (OTC) Medications

Q.1. Define over-the-counter (OTC) medications. Explain the need and role of pharmacist in OTC medication dispensing. (S. 23, W. 23)

Over-the-counter (OTC) Medicines

Over-the-counter medicines are defined as the drugs which can be purchased without a prescription of registered medical practitioner from healthcare professionals (pharmacist).

- OTC medicines are also known as non-prescription medicines or self-selected medicines.
- OTC medications are frequently used for more than just the relief of aches, pains and itches.

Need and Role of Pharmacist in OTC Medication Dispensing

1. Pharmacists are still the best resource for patient, hence he should be involved in proper selection of OTC medication.
2. Pharmacists and pharmacy attendants play an important role to encourage self-medication among consumers. The responsibility of the pharmacist is increased to select the appropriate OTC drug.
3. The pharmacists play a vital role in controlling the number of medications being dispensed as OTC drugs. They can also counsel and advise the consumers regarding OTC medications. Use of OTC drugs and self-medication is becoming an increasingly important area within healthcare.
4. The World Health Organization considers self-medication as part of self-care that helps in reduction of the burden on healthcare system. The recent trend is to expand the list of OTC medicines and to increase the availability of controlled drugs as this can increase choice to the people to take informed treatment decisions. On the other hand, it is

associated with increased risk of abuse of these medications, which is becoming an area of concern.

5. The pharmacist should guide/advice the patients before using OTC products to avoid possible contraindications, drug–drug interaction, drug–food interaction, drug–alcohol interaction, etc.
6. Pharmacist should access the patient's symptoms or condition to determine whether self-treatment is beneficial or medical treatment is necessary.
7. Analgesics, antipyretics and antidiarrhoeal agents are the most commonly dispensed OTC drugs. This could be due to pain being the most common symptom encountered by the consumers and most of them would be aware of the common analgesics through media or through old prescriptions.
8. Pharmacists should listen about patient complaints before dispensing OTC medications. Pharmacists should counsel the patient on how to consume the OTC drugs.
9. Knowing the patients complaints and counselling them are essential to pharmacists as they can understand the seriousness of the problem and advice them to seek help from doctor, if necessary.
10. Pharmacists need to be educated regarding the dispensing practices pertaining to OTC/non-OTC drugs. They should make an attempt to ask the consumers regarding the complaint for which they are seeking drug. If needed, the pharmacist should advise the consumer to consult doctor for the necessary treatment.
11. The drugs other than OTC medications should not be dispensed without prescription. Pharmacists, being the part of healthcare system, should be well trained to identify the circumstances under which OTC drugs may be dispensed and when to refer the patient to a doctor.
12. OTC drug advertising should also be regulated so that the consumers get the correct information regarding the various OTC medications.
13. When a patient seeks guidance on the use of OTC products, pharmacists should take advantage of the opportunity to educate the patient on the importance of using these products in the proper manner.
14. As a healthcare provider, pharmacist should participate and contribute to the development of awareness towards use of OTC medicines and assist public in selecting these products.

Q.2. Write a note on "OTC medication in India".

OTC Medication in India

- OTC drugs are the medications that can be purchased legally over-the-counter, that is, without a prescription from a registered medical practitioner.
- The use of over-the-counter (OTC) drugs is a common self-care activity that people, families and communities do to improve health and prevent illness.
- OTC medications play an important role in the healthcare system.
- The promotion of consumer participation in their healthcare is a fundamental principle of health promotion and general well-being of the society.
- At the moment, the most effective method is to use more over-the-counter (OTC) medicines instead of prescription medicines.
- In India, till date, there are no guidelines for licensing of OTC medicines.
- There is no separate category allotted for OTC medicines in India, and the drugs which do not come under the prescription medicines schedule are generally sold as over-the-counter medicines.
- OTC drugs allow faster and cheaper access to healthcare but the possibilities of misuse and adverse effects cause concerns.
- In India, over-the-counter (OTC) drugs are not recognized by the courts.
- A large proportion of the population relies on over-the-counter (OTC) medications to treat minor ailments such as headaches, colds, fevers, coughs, indigestion, flu, dermatitis.
- A large safety margin must be established to ensure the safety of OTC medications.
- The major factor contributing to growth in OTC market includes consumers attitude towards self-medication, the easy access, convenience, time saving, fast relief and high consulting fees of the physician.
- In India, regulatory control over drug is exercised through variety of Acts and rules.
- In Schedule K of the Drugs and Cosmetics Rules 1945, drugs have been listed under the little 'household remedies'. The distribution and sale of these drugs are exempted from certain provisions applicable to distribution and sale of drugs. These are considered as OTC medications and can be sold for self-medication purpose or sold by pharmacists without the prescription or RMP.

- The list of OTC drugs consists of aspirin tablets, paracetamol tablets, analgesic balms, antacid preparations, gripe water used for infants, inhalers, syrups, lozenges, pills and tablets for cough, liniments, skin ointments, burn ointments, absorbent, cotton wool, castor oil, liquid paraffin, eucalyptus oil, tincture of iodine, etc.
- In India, medications in the name of OTC have been recognized legally.
- The drugs not included in Schedule H, X, and G can be sold by pharmacist without prescription from RMP and thus can be considered as OTC medications.

Q.3. Write a note on counselling for OTC products.

Counselling for OTC Product

- A pharmacist has a significant responsibility to assist and educate patients about a variety of effective self-medication options.
- A pharmacist should provide counselling on the subject and initiating, modifying or stopping OTC drugs.
- OTC counselling requires an assessment of the patient's self-care concern and drug related needs.
- Community pharmacists, because of their easy availability and close proximity to patients who purchase OTC medications, are the best position to counsel patients on the choice and use of OTC products.
- The pharmacist can help the patient to select an appropriate OTC product, suggest alternate non-drug therapy or refer the patient to a doctor when necessary.
- Pharmacists can counsel patients on the appropriate use of OTC products to maximize the benefits and reduce the risks.
- The aim of OTC counselling is to empower patients to take control of their healthcare-related needs for conditions that do not require an appointment with a medical doctor.
- During counsellings, pharmacist's responsibility is to access the patient's medical condition, provide appropriate advice and counsel the patient on the most appropriate course of treatment to be pursued by the pharmacist.
- During counselling for OTC products, it develops rapport with patient.
- The primary goal of OTC counselling is to educate pharmacists on the fundamental principles that are used in assisting patients in selection of OTC products.
- OTC counselling requires much more open or close-ended questions on the part of pharmacist which is useful to clarify the patient's information.

- OTC counselling area should be a room with a desk and two chairs where the pharmacist should be able to demonstrate the use of medicines, to write down instructions and to store materials.
- During OTC counselling, pharmacist has three primary functions:
  a. The pharmacist should evaluate through the interview and observation, the patient's physical complaint or medical condition.
  b. The pharmacist must differentiate between self-treatable conditions from those requiring the attention of the patient's healthcare provider (i.e. doctor).
  c. The pharmacist's obligation is to provide adequate advice and counsel the patient on the proper course of action to be taken.

Process of Counselling for OTC Drugs

The counselling of OTC drugs should come out in two steps.

Step I

1. Pharmacist should begin the counselling session by introducing himself/herself.
2. Try to relax the patient giving a friendly smile and a handshake.
3. Assure that you are ready to provide assistance with OTC product selection.
4. Explain how to use such medication.

Step II

1. Try to obtain relevant information about patient:
   a. Demographic (sex, age, pregnancy, nursing, weight, allergies, social history, etc.).
   b. Disease (history of present illness, current symptoms, course of illness, past history, other underlying medical conditions).
   c. Drug (current medication, medication taking history, OTC history, etc.).
2. Use suitable verbal and written communication techniques to inform, educate, and counsel patients about the following:
   a. Drug name (generic and/or brand name).
   b. Route, dosage form, dose and administration schedule.
   c. Special directions for preparation and administration and precautions to be taken during the process.
   d. Techniques for self-monitoring of drug therapy.
   e. Storage of medicine.

f. Potential drug-drug or drug-food interactions or other therapeutic contraindications, if any.
g. Other information specific to the patient or drug.

Needs of Counselling for OTC Products

1. To help a patient with a minor illness to properly select drug from a category.
2. Active ingredients in OTC drugs may harmfully affect a preexisting disease state or interact with an ongoing prescribed drug.
3. To avoid misuse or abuse of OTC drugs that may produce significant medical complications. For example, phenylpropanolamine in OTC medicine for cold may be abused instead of amphetamine or cocaine.
4. Many of the more potent active ingredients are hidden in OTC products. The lack of awareness of such ingredients present in OTC product may:
   a. Cause diagnostic confusion and may interfere with therapy.
   b. Harmful interactions may occur.
   c. The overuse or misuse may induce significant medical problems.
5. Improper and chronic use of some OTC medicines may cause constipation.
6. Laxative abuse by elderly patients can cause abdominal cramping and fluid and electrolyte disturbance.
7. Sympathomimetics or caffeine hidden in many OTC products may cause insomnia, nervousness and restlessness.
8. The chronic systemic use of some analgesics containing large amounts of caffeine may produce rebound headaches.
9. The long-term use of analgesics, for example, phenacetin can cause interstitial nephritis and acute ingestion of large amount of aspirin or acetaminophen can cause serious toxicity.
10. Many drugs can produce allergic reactions.

Q.4. What is self-medication practice? Give the reasons/factors responsible for self-medication. Explain the role of pharmacist in promoting safe practices during self-medication or write a note on 'self-medication'. (S. 23, 24)

Self-medication

Self-medication is defined as selection and use of medicines by individuals to treat self-recognized illness or symptoms.

- Self-medication can be defined as the self-consuming and medication without getting advice from a physician for either diagnosis or treatment.

- Self-medication may also be defined as the use of non-prescription medicines (OTC drugs) by people on their own initiative.
- The most widely self-medicated substances are OTC drugs and dietary supplements which are used to treat common health issues at home. They are available in supermarkets and convenience stores.
- Self-medication is a common practice in developing countries such as India because it provides a low-cost alternative for people to seek medical attention.

Reasons for Self-medication Practice

1. Urge of self-care and lack of time
2. Perception and simplicity of ailment
3. Healthcare costs
4. Previous use
5. Familiarity
6. Considered as safe
7. Improved education
8. Consumerism
9. Social lifestyle
10. Convenience
11. Lack of health services
12. Financial problems
13. Extensive advertisements.

Benefits of Self-medication

1. Convenient method to prevent and treat minor ailments that do not require a doctor's consultation.
2. Increased access to medication and relief for the patient.
3. Individual can play an active role in health care.
4. Minor symptoms can be taken care of by the person.
5. It increases the availability of healthcare in deprived rural, remote, and hilly areas to reduce the pressure on medical services.
6. It makes better use of healthcare provider's skills and reduce burden of governments.
7. Self-medication saves travel and session time of treatment.
8. Provides a lower cost alternative for people who cannot afford the cost of clinical service and medicine bill.

Role of Pharmacist in Promoting the Safe Practices during Self-medication

1. As a Communicator

The pharmacist must be a good communicator and possess required knowledge and ability to recommend OTC medicines for specific conditions and diseases. The pharmacist should appropriately ask specific questions to address the patient condition. Pharmacist must provide required counselling about the key points and pass on relevant information, such as how to take the medicines, frequency of doses and how to deal with safety issues to them, pharmacist must provide allied information about OTC medicines to avoid future untoward problems.

2. As a Quality Drug Supplier

Pharmacists must ensure that the OTC medicines they dispense for patients are from approved manufacturers and are of good quality. They must maintain proper storage conditions for these products to assure desired therapeutic effects and avoid toxicity problems.

3. As a Trainer and Supervisor

Pharmacist must actively participate in professional development by continuing education. They must ensure that the services rendered by non-pharmacist staff correspond to established standard of practice. For this, pharmacist must develop protocols for referral to the pharmacist and protocols for community health workers involved with the handling and distribution of medicines. The pharmacist must also provide and promote the training and supervise the work of non-pharmacist staff.

4. As a Collaborator

Pharmacists should develop quality collaborative relationships with other healthcare professionals, various professional associations, pharmaceutical industry, local and national governments, patients and the community. While doing this, pharmacist should search for resources and expertise, and share data and experiences, to improve self-care and self-medication.

5. As a Health Promotor

Pharmacist must participate in health screening to identify health problems and those people who are at risk in the community. Pharmacist should aim at pharmacovigilance on the self-medication and must be confident to report any adverse events. They must contribute to raise awareness of health issues and disease prevention and provide advice to individuals to help them make informed health choices.

6. Specific Situations

In India, the ratio of pharmacist and pharmacies to population is low that affects the access of pharmaceutical care. Therefore, pharmacists should encourage and provide appropriate pharmaceutical training and orientation through consultation to other health workers or community healthcare workers, household caretakers and other appropriate lay people.

Q.5. Give the symptoms, minor ailments and advice for self-care in the following conditions.

1. **Pain management**
2. **Cough**
3. **Cold**
4. **Diarrhoea**
5. **Constipation**
6. **Vomiting**
7. **Fever**
8. **Sore throat**
9. **Skin disorders**
10. **Oral health (mouth ulcers, dental pains, gum swelling)**

1. Pain Management (W. 23)

- Pain is a complex protective mechanism that protects the body from danger or harm.
- The sensation of pain comes from series of messages by nervous system.
- Pain can be caused by a variety of conditions and seen in the conditions like headache, toothache, backache, musculoskeletal pain and period pain.

Types of Pain

a. Acute Pain

- Acute pain is a normal response to an injury or medical condition that starts suddenly and is usually short lived.
- Acute pain tends to be sharp, rather than dull.
- It usually goes away within a few days, weeks or months, after the cause has been treated or resolved.
- Examples: Pain result from injuries such as cuts, burns, bone fractures.

b. Chronic Pain

Chronic pain lasts, or comes and goes, over multiple months or years. It may result from a variety of health conditions, such as arthritis, fibromyalgia,

chronic migraine or cancer. Some people also experience chronic pain following an injury, even after the initial injury has healed.

In some cases, the cause of chronic pain is hard to identify. Some people experience chronic pain when there is no other underlying injury or illness. This is known as functional pain.

c. Referred Pain

It is a pain that originates in one part of the body but is felt in another part of the body.

d. Cancer Pain

It is due to nerve irritation caused by malignancy.

e. Neuropathic Pain

It is caused by damage to the nervous system and is often perceived as tingling, burning and pins-and-needles sensations called parenthesis.

f. Visceral Pain

It is caused by a problem with the internal organs, such as the liver, gallbladder, kidney, heart or lungs.

Symptoms of Pain

- Appetite changes
- Heavy breathing
- Poor sleeping
- Decreasing activity
- Fearful expression
- Mood changes
- Teeth grinding
- Anger
- Feeling hungry
- Weakness
- Lack of energy
- Sleeping trouble

Advice for Self-care in Pain Management

a. Use ice packs immediately after an injury to reduce swelling. Heat packs are better for relieving chronic muscle or joint injuries.
b. Physical therapies, such as walking, stretching, strengthening or aerobic exercises may help reduce pain, keep you mobile and improved mood.

c. Massage—this is another physical therapy; it is better suited to soft tissue injuries and should be avoided if the pain is in the joints.
d. Relaxation and stress management techniques including medication and yoga.
e. Learn deep breathing or meditation to help relax.
f. Reduce stress.
g. Boost chronic pain relief with the natural endorphins from exercise.
h. Do not smoke.
i. Provide counselling to patients who are taking medications for their specific minor ailment.
j. Counsel the patients on healthy diet, regular exercise and maintaining healthy weight.
k. Advice to limit the amount of alcohol and cessation of smoking.

2. Cough

Coughing is a protective reflex. It can remove substances that may have been inhaled, such as dust, and excess secretions that have built up in the airways. Coughing is how the body cleans the lungs and airways.

Types of Cough

Coughs may be dry coughs or wet coughs. A dry cough does not produce any mucus phlegm. A wet cough is one that produces mucus and may cause feeling of congestion in the chest.

Symptoms of Cough

- A feeling of liquid running down the back of throat (postnatal drip).
- Frequent throat clearing and sore throat.
- Hoarseness.
- Wheezing and shortness of breath.
- Heartburn.
- A sour taste in your mouth.

Causes of Cough

A cough is supposed to protect air passage. It gets out stuff that does not belong in the lungs and windpipe, like inhaled dirt or food. Here are the common triggers, that cause cough:

a. **Viruses:** Cold and the flu are the most common causes. While annoying, coughs that are "productive" get germy mucus out of the lungs when you are sick. Most will go away in a few days. After a cold, though,

some "dry" coughs last weeks. That could be because coughing irritates your lungs, which leads to more coughing, which irritates your lungs and so on.

b. **Allergies and asthma:** If you have them, inhaling a trigger like mold can cause your lungs to overreact. They are trying to cough out what is bothering them.
c. **Irritants:** Even if you are not allergic, things like cold air, cigarette smoke or strong perfumes can set off a hacking spell.
d. **Postnasal drip:** When you are congested, mucus drips down from your nose into your throat and makes you cough. You can get postnasal drip from colds, flu, sinus infections, allergies and other problems.
e. **Acid reflux:** When you have heartburn, stomach acids back up into your throat, especially at night. They can irritate your windpipe, vocal cords and throat and make you cough.

Advice for Self-care in Cough

- Consume warm fluids (soup or tea) to provide relief for a stuffy nose and to loosen phlegm.
- Eat a well-balanced diet. If person cannot, ensure that they are getting enough nutrients by taking a daily multivitamin.
- Avoid dairy products, as they can thicken phlegm.
- Avoid alcohol, as it impairs the body's immune system.
- Avoid tobacco smoke. Smoking or breathing smoke can make the cough worse.
- Coughing up mucus is important to protect the lungs against pneumonia, so take a cough suppressant only if patient finds it hard to sleep.
- Dissolve half a teaspoon of salt in 1 cup of warm water and put 2 or 3 drops in each nostril, then blow the nose. This can help clear mucus and soothens the cough.
- Always keep some cloth on mouth while coughing.
- Get plenty of rest, taking time away from work reduces the spread of infection and helps patient to recover.
- Use of OTC cough medicines such as expectorants, suppressants and cough drops.

3. Cold

Cold is a viral infection of nose and throat (upper respiratory tract). It is usually harmless, although it might not feel that way. Many types of viruses can cause a common cold.

Symptoms of Cold

- Runny or stuffy nose
- Sore throat
- Cough
- Congestion
- Slight body aches or a mild headache
- Sneezing
- Low-grade fever
- Generally feeling unwell
- Hoarseness
- Loss of taste and smell
- Watery eyes

Causes

Although many types of viruses can cause a common cold, rhinoviruses are the most common cause. A cold virus enters the body through mouth, eyes or nose. The virus can spread through droplets in the air when someone who is sick coughs, sneezes or talks.

It also spreads by hand-to-hand contact with someone who has a cold or by sharing contaminated objects such as eating utensils, towels, toys or telephones. After touching to eyes, nose, mouth after such contact may produce cold.

Risk Factors

These factors can increase chances of getting a cold:

- **Age:** Infants and young children are at greatest risk of colds, especially if they spend time in child care settings.
- **Weakened immune system:** Having a chronic illness or otherwise weakened immune increases risk.
- **Time of year:** Both children and adults are more likely to get colds in fall and winter, but you can get a cold anytime.
- **Smoking:** You are more likely to catch a cold and to have more severe colds, if you smoke or are around second-hand smoke.
- **Exposure:** If you are around crowds, such as at school or on an airplane, you are likely to be exposed to viruses that cause colds.

Advice for Self-care in Cold

- **Drink plenty of fluids:** Water, juice, clear broth or warm lemon water are good choices. Avoid caffeine and alcohol, which can dehydrate you.

- **Sip warm liquids:** Chicken soup and other warm fluids, such as tea or warm apple juice, can be soothing and can loosen congestion. Honey may help coughs in adults and children who are older than age 1 year. Try it in hot tea.
- **Rest:** If possible, stay home from work or school if you have a fever or a bad cough or are drowsy after taking medications. This will give you a chance to rest and heal, as well as reduce the chances that you shall spread your cold to others.
- **Adjust your room's temperature and humidity:** Keep your room warm, but not overheated. If the air is dry, a cool-mist humidifier or vaporizer according to the manufacturer's directions to prevent the growth of bacteria and molds.
- **Soothe a sore throat:** A saltwater of 1/4–1/2 teaspoon (1250–2500 milligrams) of table salt in 4–8 ounces (120–240 milliliters) of warm water can help soothe a sore throat. Gargle the solution and then spit it out. Children younger than 6 years are unlikely to be able to gargle property.

  You can also try ice chips, lozenges or hard candy. Use caution when giving lozenges or hard candy to children because they can choke on them. Do not give lozenges or hard candy to children younger than 6 years.
- **Try saline nasal drops or sprays:** Saline nasal drops or sprays can keep nasal passages moist and loosen mucus. You can buy these products over-the-counter, and they can help relieve symptoms, even in children.

  In infants and younger children, apply saline nasal drops, wait for a short period and then use a suction bulb to draw mucus out of each nostril. Insert the bulb syringe about 1/4–1/2 inch (6–12 millimeters). For older children, use a saline nasal spray or saline nasal irrigation.

4. Diarrhoea (S. 24)

- Diarrhoea is a condition characterized by an abnormally frequent passage and liquid/water stools from the bowel which lasts for 2–3 days.
- The primary cause of diarrhoea is high intestinal motility.

Types of Diarrhoea

There are three types of diarrhoea:

a. **Acute diarrhoea:** Acute diarrhoea is loose watery diarrhoea that lasts one to two days and is very common. This diarrhoea does not need treatment and it usually goes away after a few days.

b. **Persistent diarrhoea:** This type of diarrhoea generally persists for several weeks, most often 2–4 weeks.
c. **Chronic diarrhoea:** Diarrhoea that lasts for more than 4 weeks or comes and goes regularly over a long period of time is called chronic diarrhoea.

Causes of Diarrhoea

1. Viral infections (rotavirus)
2. Bacterial infection
3. Parasitic pathogens
4. Septic bacterial infections
5. Increased intestinal motility
6. Food allergies
7. Chemotherapy or radiation
8. Medicines such as antibiotics
9. Contaminated food and drinking water
10. Lactose intolerance

Symptoms of Diarrhoea

- Nausea (feeling sick)
- Vomiting
- Fever
- Headache
- Bloating and flatulence (excess gas)
- Abdominal cramps
- Stomach pains
- Loss of appetite
- Weakness
- Dehydration
- Abdominal pains
- Frequent loose, watery stools
- Light headedness
- Dizziness
- Weight loss

Advice for Self-care in Diarrhoea

1. Pharmacist should advise patients to use plenty of safe drinking water.
2. Pharmacist should advise to use plenty of oral rehydration solution (ORS).

3. Advise patients to improve sanitation and washing hands with soap to reduce disease risk. Use of alcohol-based hand sanitizer as hand lotion that contains at least 60% alcohol could also be suggested when washing hands is not possible.
4. Advise on making available adequate facilities for sanitation and human waste disposal.
5. In case of patients travelling abroad or at distant places, advice them to avoid eating contaminated food as well as follow travel warnings.
6. Pharmacist should advice a 10–14 days supplemental treatment course of dispersible 20 mg OTC zinc tablets to shorten diarrhoea duration and improve outcomes.
7. Pharmacist should advise patients to get vaccinated for rotavirus.
8. Advise patients to avoid coffee and alcohol.
9. Advise patients to eat regular foods such as rice, potato, and bread. fruits, well-cooked vegetables, lean meats, yogurt, and 1% milk.
10. Pharmacist should arrange for training programmes, for health workers and educate them on the proper treatment of diarrhoea.
11. Pharmacists should encourage and provide adequate education to patients who use antidiarrhoeal medicines, e.g. loperamide.
12. Pharmacist should educate mothers and caretakers about caring for all children and when to seek medical assistance.
13. Pharmacists should identify patients who are candidates for antidiarrhoeal medications and refer them to their primary care provider for further treatment.

5. Constipation

Constipation is a condition in which stool becomes hard, dry and difficult to pass from the bowel.

Causes of Constipation

- Eating low fibre diet
- Not drinking enough water
- Lack of exercise
- Drinking/eating large amount of milk or cheese
- Stress, anxiety
- Pregnancy
- Depression
- Colorectal cancer
- Irritable bowel syndrome (IBS)

Symptoms of Constipation

- Hard and dry stools which are difficult to pass.
- Painful bowel movements
- Feeling bloated, uncomfortable and sluggish
- Nausea
- Loss of appetite
- Pain and abdominal cramps.

Advice for Self-care in Constipation

1. When a patient complains of constipation, the pharmacist must check the possibility of any medications that may cause constipation.
2. Pharmacist should advise patients to include plenty of high-fibre foods in their diet, including beans, vegetables, fruits, whole grain cereals and bran.
3. Pharmacist should advise patients to avoid eating foods that contain low amounts of fibre and promote use of food with higher amounts of it.
4. Pharmacist should recommend OTC fibre replacement products that attract water to promote healthy bowel movements.
5. Pharmacist should advise patients to drink plenty of fluids.
6. Pharmacist should advise patients to drink warm liquids, especially in the morning.
7. Pharmacist should advise patients to stay active and regularly perform physical exercise.
8. Pharmacist should advise patients to make attempts to manage stress situations.
9. Pharmacist should advise patient to have a regular bowel movement, after a meal.
10. In case of children, pharmacist should advise to eat solid foods containing plenty of fibre.
11. Pharmacists should help patients to select OTC medicines that are effective, safe, well tolerated, and easy to use.
12. Pharmacist should recommend OTC stimulant medicine such as senokot that contracts intestinal muscles rhythmically.
13. Pharmacist should recommend OTC lubricants such as mineral oil (fleet) that helps the stool to move smoothly through the colon.
14. Pharmacist should recommend OTC stool softeners such as Colace and Surfak that moistens the stool.

15. Pharmacist should recommend OTC saline laxatives that osmotically draw water into the bowel to promote a watery bowel movement within 6–8 hours.
16. Pharmacist should recommend OTC polyethylene glycol (PEG) 3350 an osmotic laxative.
17. In such situations pharmacist should guide patients for safe use at different age groups.
18. Pharmacist must be alert to potential misuse and abuse of certain laxatives and if there is any suspect of these issues, they must refuse to sell those.
19. Pharmacist should ask a doctor if any of the patient medication causes constipation.

6. Vomiting

Vomiting is known as emesis also known as throwing up.

- Vomiting is forcible voluntary or involuntary emptying of stomach contents through mouth.
- Nausea is a stomach discomfort and the feeling of desire to vomit.
- Nausea can be an originator to vomiting the contents of the stomach.

Reasons/Causes of Vomiting

- Motion sickness
- Early pregnancy
- Medication-induced vomiting
- Intense pain
- Fear
- Gallbladder disease
- Food poisoning
- Overeating
- Response to strong smells/odours
- Ulcers
- Psychological illness
- Slow stomach emptying
- Excess of alcohol consumption
- Bowel obstruction
- Appendicitis

Symptoms of Vomiting

- Excessive sweating
- Abdominal pain
- Fainting
- Confusion
- Diarrhoea, fever
- Vertigo
- Lightheadedness
- Rapid pulse
- Dry mouth
- Decreased urination
- Chest pain
- Excessive sleepiness
- Salivation
- Thirst, dehydration, weight loss

Advice for Self-care Involving

1. Advise patients to eat small meals throughout the day instead of three large meals.
2. Advise patients to eat slowly and avoid hard-to-digest foods.
3. Advise patients to consume cold foods and avoid hot or warm foods.
4. Advise to adhere to a clear liquid diet to rest the stomach.
5. Advise patients that after eating, rest their head elevated above feet level.
6. Advise to drink liquids between meals and avoid during meals.
7. Advise to pregnant women to eat some crackers before getting out of bed or eat a high protein snacks before going to bed.
8. Advise to drink gradually larger amounts of clear liquids.
9. Advise to take deep breaths by breathing air through nose and into lungs.
10. Advise to avoid solid food until the vomiting episode has elapsed.
11. In case of vomiting that lasts for more than 24 hours, advise to take oral rehydrating solution or homemade sugar and salt solution.
12. Advise to avoid spicy and fatty foods.
13. Recommend OTC vitamin B_6 supplements to control vomiting associated with pregnancy.

7. Fever (S. 23)

Fever is a rise in body temperature above the normal temperature, usually caused by infection.

- The normal body temperature is 37°C.
- A fever is usually a short-term rise in body temperature.
- Fever appears to play a key role in helping body to fight off a number of infections. It begins when body immune system produces more WBCs to fight against infection causes fever. The increase in WBCs trigger brain to heat the body up.
- In adult, if body temperature increases to 100.4°F (38°C), this is known as low grade fever and temperature rises to 103°F (39.4°C) or above is known as high grade fever.

Causes of Fever

a. **By viruses:** Colds or upper respiratory tract infections
b. **By bacteria:** Tonsilitis, pneumonia or urinary tract infections
c. **Chronic illness:** Rheumatoid arthritis and ulcerative colitis
d. **Tropical disease:** Malaria or typhoid
e. **Other causes:** Food poisoning, heat exhaustion, sunburn, inflammation, tumour, blood clots, certain medications have this adverse effect.

Symptoms of Fever

- Feeling unwell
- Chattering teeth
- Flushed face
- Sweating chills (shivering)
- Headache
- Muscle pain
- Loss of appetite
- Fatigue and weakness
- Warm forehead
- Sore eyes
- Dehydration
- Swollen lymph nodes
- Lethargy
- Flushed skin, paleness
- Dizziness, sensitivity to bright light
- Confusion, seizures.

Advice for Self-care in Fever

1. Advise to thoroughly wash hands often and teach your children to do the same.
2. Advise to carry hand sanitizer to use when does not have access to soap and water.
3. Advise to avoid touching nose, mouth or eyes through which viruses and bacteria can enter in the body and cause infection.
4. Advise to cover mouth during coughing and nose during sneezing. In addition, advise to turn away from others when coughing or sneezing to avoid germ spreading.
5. Advise to avoid sharing cups, water bottles and other utensils with others.
6. Advise to stay hydrated by drinking plenty of water, juice, soup and broth and rehydration mix to replenish fluids and eat light foods that are easy to digest.
7. Advise to take rest including bed rest, dress in light, comfortable clothing, turn down the temperature in area.
8. Advise to use a cool compress, like a damp towel and take a warm sponge bath and avoid taking cold baths or showers.
9. Advise to avoid alcohol, tea and coffee as these drinks can cause slight dehydration.
10. Advise to monitor body temperature using rectal and oral thermometers.
11. Recommend on OTC medications such as ibuprofen (advil, motrin), acetaminophen (tylenol), naproxen (aleve, naprosyn), etc. that can help to ease their fever and its symptoms.

8. Sore Throat (S.23)

A sore throat is a condition of throat hurt that it feels painful, dry, irritated or scratchy.

- A sore throat is usually a symptom of an acute upper respiratory tract.
- Infection may be viral or bacterial.
- Sore throat is also termed pharyngitis.
- The most common cause of sore throat is viral infections such as a cold or flu.
- Sore throat conditions may be:
  i. Pharyngitis: It affects the area right behind the mouth.
  ii. Tonsilitis: It is swelling and redness of the tonsils, soft tissue in the back of the mouth.
  iii. Laryngitis: It is swelling and redness of the voice box (larynx).

Causes/Reasons of Sore Throat

- Viral infection such as cold or flu, measles, COVID-19
- Allergies to pets, pollen and molds
- Environmental factors like, dry air, smoke, chemicals and other infants.
- Smoking
- Mouth breathing at night-sleep.

Symptoms of Sore Throat

- Fever, headache, bodyache
- White patches or throat or tonsils
- Swollen red tonsils
- Swollen glands in neck
- Skin rash
- Difficulty in talking and swallowing
- Nasal congestion, sneezing, cough, fever, chills
- Loss of appetite.

Advice for Self-care in Sore Throat

1. Regularly wash hands thoroughly and frequently for at least 20 seconds, when using the toilet, before and after eating, and after sneezing or coughing. Advice patients to gargle with warm salt water. For this, mix 1 teaspoon of salt with 1 cup of water and stir.
2. Use a humidifier in rooms where patients spend their time.
3. Take plenty of body and voice rest to provide time to fight against the infection.
4. Drink warm liquids such as hot tea with honey, soup broth, or warm water with lemon to soothe the throat. Even herbal teas can also be advised.
5. If symptoms last for 4 weeks or more, take rest and reduce exercise.
6. If a sore throat is caused by allergies or tonsillitis, consult doctor about allergy triggers and seek for medicine.
7. Recommend to take OTC acetaminophen, ibuprofen or aspirin to treat the underlying cause.
8. Advise caretakers for not giving aspirin to children younger than 18 years of age.
9. Suck on OTC throat lozenge containing cetylpyridinium chloride and dequalinium, pastilles, hard candy or cough syrup.
10. Use sore throat spray that contains a numbing antiseptic like phenol, or a cooling ingredient like menthol or eucalyptus.

11. Use antiseptic mouthwashes and gargles containing chlorhexidine, hexetidine and providone-iodine and cetylpyridinium chloride as effective antimicrobial products.
12. Use anti-inflammatory benzydamine OTC product to reduce pain and inflammation in mouth and throat.
13. In case of diabetic patients recommend mouthwashes, gargles and sugar-free pastilles and to use them only for short-term use.
14. When doctor prescribes an antibiotic for sore throat, take all the complete doses.

9. Skin Disorders

Skin disorders are the conditions that affect the skin and may cause rashes, inflammation, itchiness or other skin changes.

- Some skin conditions may be genetic, while lifestyle factors may cause others.
- The common skin disorders are: Acne, alopecia areata, eczema, psoriasis, contact dermatitis, skin cancer, vitiligo, wart.

Causes of Skin Disorders

- Fungus, parasites or microorganisms living on the skin
- Viruses
- A weakened immune system
- Bacteria trapped in skin pores and hair follicle
- Contact with allergens, irritants
- Genetic factors
- Prolonged exposure to sunlight
- Adverse effects of medications.

Symptoms of Skin Disorders

- Discoloured skin patches
- Dry cracked skin
- Open sores or lesions or ulcers
- Peeling skin
- Rashes with itchiness or pain
- White or pus-filled bumps that are red or white
- Fleshy bumps
- Warts
- Skin pigmentation
- Excessive flushing
- Scaly or rough skin.

Advice for Self-care in Skin Disorders

The pharmacist may give an advise to treat skin disorders as follows:

1. Advise to wash hands with soap and warm water or gentle cleanser frequently and use moisturizer.
2. Advise to avoid sharing eating utensils and drinking glasses with other people.
3. Advise to avoid direct contact with the skin of other people who have an infection as well as with harsh chemicals or other irritants.
4. Advise to clean public spaces such as gym equipment before using them.
5. Advise on not to share personal items, such as blankets, hairbrushes, or swimsuits.
6. Advise on having sleep for at least seven hours each night.
7. Advise on drink plenty of water, avoid excessive physical or emotional stress and eating a nutritious diet.
8. Advise to get vaccinated for infectious skin conditions, such as chickenpox.
9. Advise to avoid environmental and dietary allergens.
10. Advise to protect skin against excessive cold, heat, and wind.
11. Advise to avoid poor personal habits like smoking, drinking alcohol, etc.
12. Advise to treat skin disorders that are temporary and avoid using skin cosmetics and OTC skin care products.
13. Advise to call doctor if skin disorder is severe, as many skin disorders are treatable.

10. Oral Health (Mouth Ulcers, Dental Pain, Gum Swelling)

Oral health refers to the health of the teeth, gums and entire oral–facial system that allows an individual to smile, speak and chew.

- Keeping mouth and teeth healthy is oral health care.
- The oral hygiene is the practice of keeping mouth clean and free of diseases.

The Oral Health Problem/Diseases

1. Mouth ulcers
2. Dental pains
3. Gum swelling (gingivitis)
4. Bleeding gums
5. Chronic bad breathe

6. Sensitive teeth, toothache, loose teeth
7. Tooth cavities
8. Oral cancer

Mouth Ulcers

- Mouth ulcers are small sores that form on your gums, lips, inner cheeks or palate (roof and mouth).
- They can be triggered by several factors, including minor injuries, hormonal changes and emotional stress.

Causes of Mouth Ulcers

- Citrus fruits and other foods high in acidity or spice.
- Biting the tongue or inside the cheeks.
- Poor-fitting dentures.
- Stress and anxiety.
- Hormonal changes during pregnancy, puberty and menopause.
- Genetic factors.

Advice for Self-care in Mouth Ulcers

- Avoid spicy and sour foods until the ulcers heal.
- Drink plenty of fluids.
- Always keep the mouth clean.
- Apply antiseptic gel to the ulcers.
- Regularly rinse mouth out with warm, slightly salted water, keeping the rinse in mouth for up to 4 minutes at a time.
- Use an alcohol-free medicated.

Dental Pain

- Toothache is also known as dental pain.
- Tooth pain may be sharp, throbbing or constant.

Causes of Toothache (Dental Pain)

- Tooth decay
- A dental abscess
- A cracked or damaged tooth
- A loose or broken filling.

Symptoms of Dental Pain

- Sharp, throbbing or constant tooth pain
- Swelling around the tooth

- Fever or headache
- Foul-tasting drainage from the infected tooth
- A bad odour from the mouth.

Advice for Self-care in Dental Pain

- Brush at least twice a day because good oral hygiene is very essential.
- Rinse with warm salt water. Salt water can loosen debris between the teeth, act as a disinfectant and reduce inflammation. Stir a 1/2 teaspoon of salt into a glass of warm water and rinse mouth thoroughly.
- Rinse with hydrogen peroxide. A hydrogen peroxide (3% solution) helps to reduce inflammation and pain. Dilute the hydrogen peroxide with equal parts of water and rinse thoroughly. Do not swallow it.
- Cold compress. For swelling and pain, hold a cold compress of ice wrapped in a towel to the painful area for 20-minute periods. Repeat every few hours.
- Use of pain killers like paracetamol, ibuprofen.
- Use of pain-relieving gel.

Gum Swelling

Swollen gums result from excess fluid in the soft tissues of the gums and may accompany by redness, pain, sore, ulcer and bleeding.

Causes

- Bacterial infections
- Cancer sores
- Dry mouth
- Gingivitis
- Hormonal changes
- Medications like phenytoin, calcium antagonists
- Periodontitis
- Poor dental hygiene
- Use of tobacco
- Viral and fungal infections.

Symptoms

- Bad breath, bleeding from teeth
- Loosening of teeth
- Difficulty in swallowing
- Severe gum bleeding
- Diarrhoea.

Advice for Self-care in Gum Swelling

- Brush at least twice a day because good oral hygiene is very essential.
- Make sure that toothpaste (or mouthwash) is not irritating the gums.
- Avoid tobacco products. Tobacco can irritate the gums.
- Avoid alcoholic beverages as they can further irritate the gums.
- Add extra fruits and vegetables to meals to make sure to have a well-balanced diet.
- Do not eat foods like popcorn that can get lodged between the teeth and gums.
- Stay away from sugary drinks and food.
- Gargling with salt water.
- Use of pain killer medications such as ibuprofen acetaminophen.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. **OTC** drugs are purchased without prescription of RMP.
2. Guaifenesin is used as **expectorant**.
3. Cold is a viral infection of **upper respiratory tract**.
4. **Schedule K** of the Drug and Cosmetic Rules, 1945 contains the list of substances described as **household remedies**.
5. If fever is about **101°F** you should contact your health care.
6. **Laxatives** are used in the treatment of constipation.
7. OTC are **non-prescription** drugs.
8. **Pain** is a complex protective mechanism that protects the body from danger or harm.
9. **Rhinoviruses** are the most common cause of cold.
10. Loperamide is used in the treatment of **diarrhoea**.
11. A **wet cough** is one that produces mucus and may cause feeling of congestion in the chest.
12. **Sore throat** is an upper respiratory tract infection.
13. **Calamine** is the anti-itching drug.
14. OTC stands for **over-the-counter** medications.
15. An abnormally frequent passage of watery stools, the condition is called **diarrhoea**.
16. **Constipation** is the disorder in which stools become hard and dry and difficult to pass from the bowel.
17. IBS means **irritable bowel syndrome**.
18. **Emesis** means process of vomiting.

19. **Nausea** is the originator of vomiting.
20. Motion sickness is the cause of **vomiting**.
21. The condition of rise in body temperature above the normal temperature is termed **fever**.
22. Low-grade temperature means temperature increases to **100.4°F (38°C)**.
23. High grade temperature means temperature increases to **103°F (39.4°C)**.
24. Chattering of teeth is a symptom of **fever**.
25. Psoriasis and wart are **skin disorders**.
26. **Gingivitis** means swelling of gums.
27. **Aetiology** is the study of cause of a disease.
28. **Aetiopathogenesis** means study of causes and developement of disease.
29. PHC stands for **primary health centre**.
30. DCC in January 2019 constituted another subcommittee **Ahuja Committee** to examine Shankar Committee report and provide recommendations for regulation of OTC drugs.

Chapter

9

Community Pharmacy Management

Q.1. Define the terms—community pharmacy, community pharmacist, community pharmacy management (CPM)

Community Pharmacy (W. 23)

Community pharmacy means any place under the supervision of a pharmacist where the practice of pharmacy occurs or where prescription orders are compounded and dispensed other than a hospital pharmacy or limited service pharmacy.

Community Pharmacist (W. 23)

Community pharmacist (drug specialist) is the professional who is in direct access to the public and whose duties are widely required for the public and patients.

Community Pharmacy Management (CPM) (W. 23)

Community pharmacy management represents all activities involved in the organization, management and direction of its entire staff to accomplish desired goals and objectives of pharmacy owner.

Q.2. What are various types of community pharmacy?

Types of Community Pharmacy

1. Independent Pharmacies

- These are operated and owned by an individual pharmacist.
- They are located in rural, urban as well as sub-urban areas.

2. Chain Pharmacies

- It means retail pharmacy owned by corporation and consist of many drugstores in a particular region or throughout the nation.
- It is an organized pharmacy chain.

- Chain pharmacy settings are characterized by greater product selection due to large facilities and buying power.
- Examples: Apollo Pharmacy Ltd., Wellness Forever Pharmacy.

3. Supermarket

- Pharmacy store is also attached to the supermarket along with other stores.
- Such pharmacy store has a community pharmacy setting.
- The major advantage is that, it serves as a one stop shopping to fulfil majority of consumer needs.

Q.3. What are legal requirements to set up a community pharmacy? (S. 23, 24, W. 23)

The Legal Requirement to Setup a Community Pharmacy

1. Minimum qualification
2. Space
3. Documents required for establishing retail and wholesale drugstore
4. Issue and licences
5. Duration of license
6. Conditions for general license.

1. Minimum Qualification

- A person wishing to establish a retail drugstore should be a 'registered pharmacist' with the State Pharmacy Council.
- The minimum qualification required for registration as a pharmacist shall be a pass in diploma in pharmacy and satisfactory completion of diploma in pharmacy practical training (Part III), shall not be less than 500 hours spread over a period of not less than three months.

2. Space

As per the Drugs and Cosmetics Rule, 1945, the space required for the establishment of:

a. New retail drugstore—10 square metres
b. Wholesale and retail both—15 square metres together.

3. Documents Required for Retail Drugstore

a. Application (in duplicate) on Form 19 of the Drugs and Cosmetics Rules, 1945.
b. Challan of fee deposited for obtaining drug license.
c. Attested copy of Diploma in Pharmacy from any institution duly recognised by PCI.

d. Affidavit of a registered pharmacist or competent person working full time.
e. Affidavit of non-conviction of proprietor/partners/directors under the Drugs and Cosmetics Act, 1940.
f. Map of retail drugstore duly signed by proprietor/partners of firm.
g. A copy of the partnership deed in case of partnership firm.
h. Refrigerator purchase receipt.

Applicant has to make an application in the prescribed form for the grant of license to sell, stock or exhibit for sale or distribute drug shall be:

i. For drugs other than those specified in Schedule X: Form 19.
ii. For restricted licenses: Form 19A.
iii. For wholesale or distribute drugs from a motor vehicle: Form 19AA.
iv. For drugs specified in Schedule X: 19C.

4. Issue of Licenses

The licenses shall be issued in various forms:

a. For Retail Sale

i. For drugs other than those specified in Schedule C, C(i) and X: Form 20.
ii. For drug specified in Schedule C and C1: Form 21.
iii. For drugs specified in Schedule X: Form 20 F.

b. For Restricted Licenses

i. For drugs other than those specified in Schedule C, C1 and X: Form 20A.
ii. For drugs specified in Schedule C and C1: Form 21A.
iii. For drugs specified in Schedule X: No license shall be issued.

c. For Wholesale

i. For drugs other than those specified in Schedule C, C1 and X: Form 20B.
ii. For drugs specified in Schedule C and C1: Form 21B.
iii. For drugs specified in Schedule X: Form 20 G.

d. For Wholesale or Distribution of Drugs from a Motor Vehicle

i. For drugs other than those specified in Schedule C, C1 and X: Form 20 BB.
ii. For drugs specified in Schedule C and C1: Form 21 BB.
iii. For drugs specified in Schedule X: No license shall be issued.

5. Duration of License

Licenses are valid up to 31st December of the year, following the year, it should be renewed. The licenses should be renewed within 6 months after its expiry. Even after 6 months, the licenses can be renewed under specified conditions.

Renewal of license

License for retail sale	*License for wholesale*	*Application form*	*License fee in rupees*	*Additional fee per month*
Form 20	Form 20B	Form 19	1500	500
Form 21	Form 21B	Form 19	1500	500
Form 20F	Form 20G	Form 19C	500	250
Form 20C	Form 20D	Form 19B	250	50

6. Conditions for General License

a. The premises should be adequate and equipped with proper storage facilities for preserving the properties of drugs.
b. The premises should be under the control of registered pharmacist to supervise the sale, distribution and preservation of drugs.
c. The licenses shall be displayed at the prominent place, visible to public.
d. Purchases of drugs should be from duly licensed manufacturers or dealers.
e. Drugs specified under Schedule C and C1 should have proper storage arrangements.
f. The records/registers which are maintained shall be preserved for two years from the date of last entry therein.
g. If there is change in premises, such change should be informed to licensing authority within one month.
h. If the licensee wishes to sell an additional categories of drugs specified in Schedule C and C1 should take the permission of licensing authority.

Q.4. How will you select a site for the establishment of new community pharmacy/retail drugstore or what factors are to be considered during selection of site for establishment of new retail drugstore/ community pharmacy? (S. 23, 24)

Selection of Site to Open New Retail Drugstore

The following factors should be considered while selecting a site for new drugstore:

A. Rural area
B. Urban area

C. Other factors
- Number of physicians
- Number of hospitals
- Presence of other drugstore
- Traffic
- Residential areas
- Gathering places
- Business locality
- Developing areas
- Lifestyle of customers

A. Rural Area

In village, the population is less and awareness in society about health is less. It results in less number of physicians. The people in villages have less buying capacity because of less finance. The medical store requires less investment. The prescription sales are less and sales of OTC products are more.

B. Urban Area

In urban area population is more and awareness in society about health is more. It results in large number of physicians. The people in urban areas have more buying capacity because of more availability of finance.

In drugstore, prescription sale is more and sale of OTC product is less in comparison with rural areas.

The medical stores in urban areas should be attractive and thus cost of running is more. But due to high margin of profit and sale, urban areas are the good sites for opening new drugstores.

C. Other Factors

1. *Number of physicians*: The area where 3–4 physicians are consulting, it is the best site for opening new drugstore and business will be good.
2. *Number of hospitals*: One or two hospitals near the area of drugstore make the business in good manner.
3. *Presence of other drugstore*:
   - Ideally there should not be any competition, but if potential of the area is high, then 2–3 drugstores in the same area can be survived.
   - If reputation of existing store is poor, the place is open to all.
4. Traffic
   - Heavy traffic of vehicles is not a good site for business.
   - Drugstores near the signals, one way roads should be avoided.
   - More the traffic of persons, more is the business.

5. *Residential areas*:
   - The places at the centre of residential area are ideal sites.
   - In these cases, Rx sales and OTC sales both are maximum.
6. *Gathering places*: The places like school, colleges, cinema hall, theatres, market places, large government offices are good sites.
7. *Business locality*: The drugstores in commercial areas require heavy investment.
8. *Developing areas*: Developing areas are the good sites.
9. *Lifestyle of customers*: It is essential to maintain stock of drug, availability of variety and to make the attractive design of the store.
10. *Close to the railway station or bus station*: Railway station and bus stations are also the good locations to open the pharmacies.

Q.5. Define "layout design" of drugstore. Give objectives of layout design of retail/wholesale drugstore.

Layout Design

Definition

The layout design is the plan explaining proper and maximum utilisation of space inside the four walls of business.

Requirements/Points Considered During Layout Design

- There should be signal entrance for the customers.
- The shop area should be separated from private rooms.
- The license should be displayed prominently.
- Name of the shop should be easily readable.

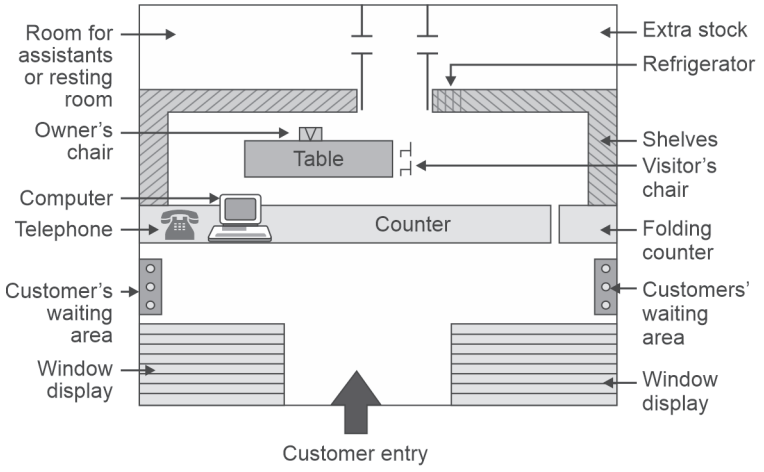
Objectives of Layout Design

1. To attract the customers and to increase the sales
2. To build up professional image
3. Maximum utilization of space
4. To control the traffic of customers
5. To provide a sufficient space for salesman, additional stock, waste material and for rest
6. To minimise number of persons working behind the counter
7. To avoid thefts
8. To satisfy the customers.

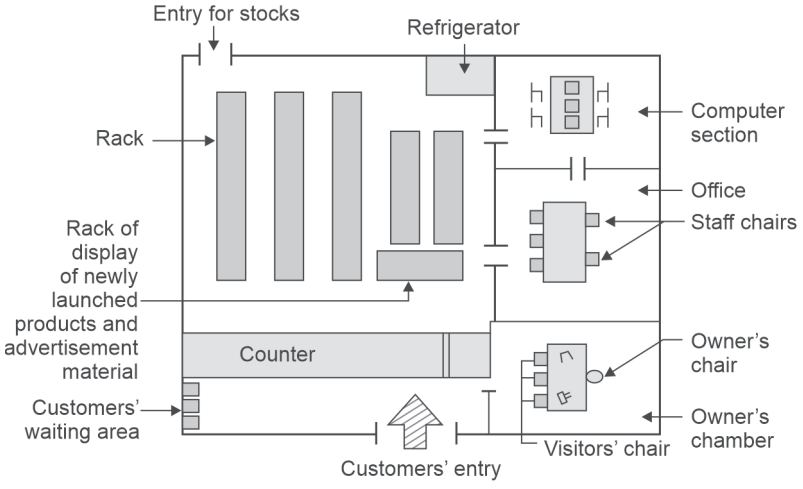
Q.6. Give the layout designs of:

a. Retail drugstore/community pharmacy
b. Wholesale drugstore

a. Layout Design of Retail Drugstore/Community Pharmacy



b. Layout Design of Whole Drugstore



Q.7. Give the characteristics of an ideal pharmacy interior design or give the requirements of an ideal pharmacy interior design. (S. 24)

Ideal Pharmacy Interior Design

The characteristics/requirements of structure and interior design of the pharmacy are:

1. Whole pharmacy should appear decorative as it will help to attract customers. Overall look of the drugstore should be professional.
2. The drugstore should not appear crowdy.
3. The medicines displayed, stored in shelves should appear clean.
4. Inside the drugstore, the walls and ceilings are mostly white, which is more clean and neat, in keeping with the drugstore image.
5. Pharmacy shelves, in addition to the walls, are a focal point of interior design.
6. Select the shelves of appropriate styles and materials.
7. While selecting the colour, it should coordinate with the rest of the drugstores decor.
8. Adequate space should be provided for delivery and dispensing medication.
9. A separate space should be kept for patient counselling.
10. Selection of light is important for look and impression of the drugstore as well as light ventilation should be attractive. The use of LED, CFL or halogen incandescent are the best options.
11. Counter design must be attractive and convenient for dispensing of the medications.
12. Professional window display arrangement should be made at the entrance.
13. Installations of air conditioner be considered.
14. Safety and security precautions should be taken care of.
15. Proper arrangement of refrigerator is must for storage of certain medications.

Q.8. What are different temperature storage conditions for drugs as per Indian pharmacopoeia? Mention the specific storage conditions given on the label of medicines by the manufacturers.

Storage conditions recommended on the label of medicines by the manufacturers are as follows:

1. Keep in cool, dry place.
2. Keep in cool, dark place.

3. Store in dark at 2–8°C.
4. Do not store above 25°C.
5. Store at room temperature.
6. Store below 4°C (do not freeze).
7. Store below 30°C. Do not freeze.
8. Keep in dry place, not exceeding 30°C.
9. Keep in cool, dry place protected from light.
10. Store below 30°C, protected from moisture.

The Indian pharmacopoeia specifies the following storage conditions:

Sr. no.	*Storage condition*	*Specification (precise meaning)*
1.	Cold	Any temperature not exceeding 8°C (i.e. range 2–8°C)
2.	Cool	Any temperature between 8°C and 25°C
3.	Room temperature	Temperature prevailing in working area
4.	Warm	Any temperature between 30°C and 40°C
5.	Excessive heat	Any temperature above 40°C

Q.9. Explain the process of selection of vender to supply the medication materials. Or what are the factors to be considered while selecting the vendors to supply the medication materials? (S. 24)

Factors or Variables to be Considered While Selecting Vendors

1. Quality
2. Price
3. Quick delivery
4. Service
5. Assurance of supply
6. Size of supplier
7. Number of suppliers
8. Local suppliers
9. Reputation of supplier in the market
10. Vendor audit

1. Quality

The term "quality" refers to a supplier's capacity and willingness to meet the buyer's requirements. Quality should never be traded for a low price.

2. Price

Normally, quality and price do not necessarily correlate, but we must look for suppliers who can provide a better-than-average product at an average

price. Low-cost purchases should not be undertaken at the expense of bad quality.

3. Quick Delivery

The lead time, i.e. time to get supplies, should be less so that there is a quick delivery of goods. Generally, the best suppliers are the busiest and in order to get goods from them, one has to wait for a long time. However, quick delivery reduces the amount of forward planning and increases the flexibility.

4. Service

It is a crucial concern while choosing a vendor. It helps giving the buyer expert advise both before and after the purchase of materials and other things. Good customer service aids in the maintenance of positive relationships between the supplier and the buyer.

5. Assurance of Supply

Only those suppliers should be preferred who assure supplies of raw materials and other components. Thus, suppliers who suffer recurring shortages should be used with great care as it can adversely affect our production schedule.

6. Size of the Supplier

Some authorities recommended that orders of small size should be placed with a small company, whereas the orders of large size should go to large companies. A small supplier would generally work very hard to perform a large order, if given a chance.

7. Number of Suppliers

Minimum suppliers has the following advantages:

a. In times of shortage, the supplier will give preference to the needs of the customer.
b. A single supplier can also offer the best price with assured supplies. On the other hand, two or more suppliers may be beneficial in times of shortage.

8. Local Suppliers

Sometimes, a buyer may decide to buy certain requirements locally on account of the following reasons:

a. Community relations between the company and public may force the buyer to buy locally. For example, the supplier to a hospital or charitable

trust by the local businessman would help in raising the funds for such organisations.

b. Local buying is generally justified when small quantities of materials are purchased.
c. There is a feeling of closer cooperation between the vendor and the buyer.
d. The delivery is quickly made.
e. Urgent orders can be met promptly.
f. Disputes, if any, can be easily resolved.

9. Reputation of Supplier in the Market

The supplier should have good status and image in the market as a professional supplier.

10. Vendor Audit

It involves examination, checking and observation of suppliers premises and transport facility.

Q.10. What do you mean by 'vendor audit'? How is it done?

Vendor Audit

Vendor audit is a process of checking, examination and observation of suppliers premises and transport facility.

Community pharmacist may use "vendor auditing tool" while selecting vendor.

The following points should be verified while selecting vendors:

1. Possession of valid licence for wholesaling
2. Activities carried out under supervision of pharmacist
3. Staff handling medicines are trained.
4. Transport of medicines in proper vehicle
5. Precautions are taken to prevent mixups of returned/damaged medicines.
6. All records are filled and maintained.
7. Storage area is with appropriate storage conditions and is clean.
8. Storage conditions such as temperature, humidity are adequate.
9. Independent/separate storage areas for different items.
10. Storage, handling of controlled substances is as per legal provisions.
11. Prompt and timely delivery
12. The complaints are handled efficiently.
13. Vendor have written SOPs and are carefully followed.

Q.11. Write a note on "ordering procedure" for the purchase of goods. (S. 23, W. 23)

Ordering Procedure for the Purchase of Goods

1. Determination of Requirement

The materials to be purchased for a particular period are well-planned for the purpose of their regular and continuous use. Purchase requisition is generally prepared by departmental heads and provides information mentioned below.

a. Types of material to be purchased.
b. Time of requirement.
c. Quantity to be purchased.

2. Source of Supply

The pharmacy and therapeutic committee sets adequate standards for the purchase of quality drugs. Procurement of stores is generally done by the following sources:

a. Medical store depot
b. Directorate general supplies and disposals (DGS and D)
c. Direct purchase from wholesellers and manufacturers
d. By inviting tenders
e. Emergency purchases from local market

a. Medical Store Depot (MSD)

This organization has six medical store depot at Mumbai, Chennai, Kolkata, Karnal, Hyderabad and Guwahati. The items purchased by these organizations are subjected to various in-house tests at the testing units in Chennai and Mumbai. It runs on no-profit and no-loss basis.

b. Directorate General Suppliers and Disposals (DGS and D)

DGS and D calls for tender and places the order. The payment is made only after the verification of inspection report by the indentor on the prescribed proforma.

c. Direct Purchase from Wholesalers or Manufacturers

Direct purchases from wholesalers, manufacturers are done following a proper purchase procedure. Materials are then received and stocked at their relevant places under proper storage conditions.

d. By Inviting Tenders

Tenders are invited from various suppliers and generally the lowest bidder is chosen for supplying the order. However, price and quality both are considered as well.

e. Emergency Drugs from Local Market

Items which are not available at MSD, DGS and D and any emergency drug which is out of stock can be immediately purchased from local market. For this purchase form is prepared in duplicate, one copy is sent to the department and other copy is retained in the pharmacy. This avoids the department concerned to re-order the same item.

3. Purchase Order

After selecting the supplier, the chief pharmacist or any other suitable authority prepares a purchase order giving detailed description, specification, packaging, price and quantity needed, etc. of the items. This purchase order is in written form and it is evidence of contract between the buyer and the supplier. Seven copies of purchase order are prepared.

Number of Purchase Order Copies Varies from Hospital to Hospital

a. The original copy is sent to the supplier.
b. One copy for accounts section
c. One copy for purchase department
d. One copy for the department
e. Fifth and sixth copy for concerned receiving department
f. Seventh copy as history copy.

The purchase order should clearly indicate the terms and conditions, i.e. price, quality and time of delivery. There should be a regular follow-up of purchase order so that drugs and supplies can be received timely.

4. Receipt of Acknowledgement

After placing the order to supplier by sending a copy of purchase order, the supplier in turn sends acknowledgement of the order saying that he will be able to supply the goods with the terms and conditions which are mentioned in the purchase order.

5. Receipt of Drugs

On receipt of drugs, there should be a system in the stores whereby the supply of drugs received in the medical stores from the manufacturer are properly checked by person specially assigned for this purpose.

Q.12. What is procurement? Explain the process of procurement.

Procurement

Procurement is defined as a process of acquiring supplies through purchases from the manufacturers, their agents or from private or public supplier.

Procurement Process

Identifying Business Requirements

This first step highlights the needs of the various pharmaceutical goods in pharmacy. It helps to select the relevant vendor to every requirement without putting multiple efforts and utilizing resources.

Selecting Vendors

This second step involves identifying a set of vendors, evaluating them, and finally selecting the most competent amongst them for the requirements. Identification of vendor helps to create a list of preferred vendors that can cater to the requirements.

Negotiating Contracts

It involves negotiating the pricing and quality, terms and conditions, etc. Effective contracting ensures all obligations are complied with, and the maximum value is extracted from the relationship built with the vendor.

Initiating Payment and Receiving Delivery

Pharmacies usually initiate payments by releasing PO for the vendor. Once the vendor receives the PO, an invoice is sent to the pharmacy. Based on the payment terms, it releases the payment.

Inspecting Goods Delivery

This is the last step in procurement process that involves inspection of the delivery received. This ensures vendor's compliance critical to measuring and evaluating its performance.

Q.13. Define purchasing. Give the objectives of purchasing/strategies for good procurement.

Purchasing

Purchasing is a set of steps linked with executing a deal between pharmacies and their vendors to buy pharmaceutical goods and services.

Objectives of Purchasing (Strategies for Good Procurement)

The efficiency of a procurement system depends on the capability of the purchasing agency to ensure the following objectives of purchasing strategy:

i. Right quality
ii. Right quantity
iii. Right source
iv. Right price
v. Right time
vi. Right place
vii. Right mode of transportation
viii. Right packaging

i. Right Quality

The quality of the material is important in building reputation of business. Before placing any purchase order, a small quantity of product is obtained and quality is judged and then only final purchase order is placed.

ii. Right Quantity

Many of the times the purchase quantity depends upon price structure, discounts, free gifts to attract the customers. Thus, the quantity purchased should not be excess than our requirement.

iii. Right Source

The right source may be the manufacturer, C&F or authorised wholesaler. He should provide the material continuously along with right quality.

iv. Right Price

The price depends upon quality and quantity of the purchase material. Right price does not indicate the lowest price. The right quality with comparative minimum price is the right price.

v. Right Time

The materials should be purchased as and when they are required to maintain a regular supply. This is known as right time.

vi. Right Place

Generally, the items are expected to deliver in the premise of the customers, is the right place.

vii. Right Mode of Transportation

The mode of transportation depends upon distance and time. The right transportation is necessary for safety of materials during transportation.

viii. Right Packaging

The right packaging is necessary to prevent contamination of the product during transport and storage.

Q.14. Define 'inventory' and 'inventory control'. Give the objectives and functions of inventory control. (S. 23)

Inventory

Inventory refers to all the goods, merchandise and materials held by the business for selling in the market to earn profit.

Inventory Control

Inventory control is an effective way to keep a watch over losses from misappropriation, damage, deterioration and carelessness and proper control over maintenance and stock.

Modern inventory control systems help your business to maintain profitability.

Objectives of Inventory Control

1. *Maximum customer satisfaction/service*: If the inventories raised to a high production schedule are kept flexible, it will result in meeting demand of customer.
2. *Low cost plant operation*: If sufficient inventory is maintained, then it will lead to stable production which will help in reducing cost of production.
3. *Minimum inventory investment*: Inventory blocks capitals of business enterprise. Maximum inventory leads to increase of storage cost and it will increase the cost of products.

Role/Functions of Inventory Control

1. To keep an inventory as low as possible but consistent with the market condition.
2. To minimize out of stock danger which may result in crash purchase which may be uneconomical.
3. To maintain sufficient stock of finished product so has to meet the demand of customer.
4. To maintain proper record so as to supply accurate and regular material report to management.
5. To forecast market and economic condition of supply with respect to availability of material.
6. Tracking purchase and supplies.
7. To avoid duplication of purchases, products, etc.
8. It helps to calculate various prices.

9. It helps in proper management of working capital.
10. It helps to maximize storage space.
11. By keeping stock levels low, it helps in cash flow management.
12. It helps to maintain optimum inventory.

Q.15. Define inventory management. Give the objectives and factors affecting inventory management.

Inventory Management

Inventory management is defined as a continuous process that involves planning, organizing and controlling inventory to minimize the investment in inventory while maintaining an effective stock of the items to satisfy customer and prescriber demands.

Objectives/Benefits/Importance of Inventory Management

Reduce Supply Chain Costs

It helps to predict supply needs ahead of time which can reduce procurement costs, carrying costs and other costs related to the supply chain.

Improve Customer Service

It helps to have a wide range of products that are always available when customers need them.

Understand Inventory Needs

It helps to understand supply needs to take advantage of overstock and short-dated medicines.

Increase Margins

It helps to decrease cost per prescription and increase margins.

Reduce Business Disruption

It helps to avoid wastage, stock outs and shortages.

Investments

It reduces investment in inventories and uses capital investment effectively.

Item Price

It helps to produce goods at minimum price without negotiating the quality.

Factors Affecting Inventory Management

1. Product Type

Generic products have lower purchase costs compared to branded products and thereby minimize inventory costs. Additionally, basic product lines require low inventory compared to full product lines.

2. Vendor's Product Return Policy

Most vendors have product return policies in place. Such policies include providing credits for future purchases, product replacement, and cash back to the pharmacy. Efficient inventory management enables pharmacy owners to use these benefits.

3. Customer Product Return Policy

Pharmacists should monitor customers and specify a threshold time period (usually 2 weeks) for returning the products to the pharmacy.

4. Prescription Filling and Refilling

Attempt should be made by pharmacist to remind customers about the filled or refilled prescriptions, especially patients with chronic diseases and elderly patients, who increasingly show poor medication adherence.

5. Inventory Shrinkage

About 2% of pharmacy's sales are lost due to inventory shrinkage. Inventory shrinkage includes losses due to theft, shoplifting, and robbery. Therefore, pharmacy owner should hire trustworthy and honest employee, have security, observation, training and monitoring strategies in place.

Q.16. Discuss various principles of inventory management. Or What are the principles of inventory management?

Principles of Inventory Management

1. Inventory management is very specific to individual community pharmacy, due to varying consumer preferences of local consumers and prescribing habits of prescribers (doctors).
2. With effective utilization of available amount of capital, the community pharmacist needs to manage the inventory, ensuring continuous flow of items needed and avoiding excessive inventory levels.
3. Inventory management is one of the most challenging activities of pharmacist.
4. Inventory management of pharmacy is complicated and unique, since major portion of inventory is prescription drugs and demand of such drugs is generated by prescribers rather than ultimate consumers as compared to other goods.
5. To satisfy needs of customers, the pharmacy has to keep sufficient prescription drug inventory (holding of stocks) since demand of drugs is unpredictable.

6. Managing inventory of other goods such as cosmetics, OTC drugs and other sundry items is comparatively easy but in such items consumer preferences, supplier pressure to buy greater quantities with discount make the activity difficult for pharmacist.
7. The possibility of deterioration, expiry and obsolescence are the risks concerned with the inventory and losses in such situation can be minimized by keeping optimum levels.
8. Effectiveness of inventory management is traditionally measured by 'stock turnover rate'. It denotes the number of times the inventory has been sold and replaced in a year. It is calculated using the following formula:

$$\text{Stock turnover rate} = \frac{\text{Cost of goods sold in a year}}{\text{Average cost of opening and closing stock}}$$

   A turnover rate of '4' may be considered as adequate and a rate of '7' or more may appear to be excellent.
9. Pharmacist controlling inventory level too closely have to face risk of stockouts of certain items. This situation occurring frequently may lead to losing customers and reputation of the firm.
10. Stock control on day-to-day basis seems to be most effective method. However, the owner should motivate and train the employees in the matter. Most pharmacies use wantlist or want book system for recording those items that need to be recorded.
11. Nowadays, computer system with softwares specially designed for inventory control are used. But in addition, periodic physical verification of stock to check the correctness of computer generated data is essential.
12. Some pharmacies are using perpetual inventory method for stock controls.
13. Visual stock control system is based on pre-determination of the number of units of each item to be carried in stock. Pharmacist can establish minimum and maximum stock levels for each item, which itself has a control over the total inventory.

Q.17. What are different methods/techniques/tools used in inventory control? (S. 23, 24)

Methods of Inventory Control

1. ABC analysis
2. VED analysis
3. EOQ method

4. Setting of various levels
5. Perpetual inventory control system
6. Review of slow moving and fast moving items
7. Input–output ratio analysis
8. Want book
9. Effective purchase procedure

Q.18. Explain "economic order quantity" method and inventory control. (S. 23, 24)

Economic Order Quantity (EOQ)

- Economic order quantity prescribes the size of the order at which the ordering cost and inventory carrying cost will be minimum.
- It is the balance between "ordering cost" and "inventory carrying cost".
- It is the number of units per order to be purchased which will minimise both inventory carrying cost and ordering cost.
- The correct quantity to buy is the quantity at which ordering cost and inventory cost will be minimum.

  There are two major components of EOQ:

  a. **Inventory carrying cost:** It includes:
     i. Rent/cost of storage
     ii. Storage facilities provided
     iii. Cost of handling materials
     iv. Special facilities like refrigerator, air conditioning
     v. Amount of interest payable
     vi. Salary of storekeeper and other staff

  b. **Ordering cost:** It is the cost of placing order.
     i. Cost of stationary
     ii. Cost of postage, telephone, fax, e-mail, etc.

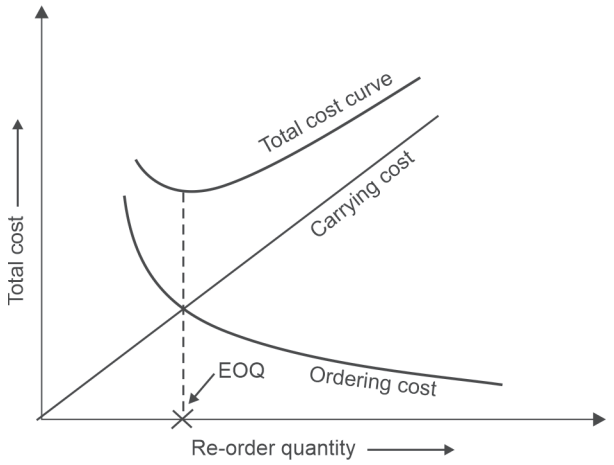
Methods of Calculating EOQ

There are three methods of calculating EOQ.

a. Graphical method
b. Algebraic method
c. Tabulation method

a. Graphical Method

In this method a graph is plotted between order quantity and cost to order and carry (total cost).



- In order to determine EOQ graphically, re-order quantity is plotted against the annual cost (total cost).
- The EOQ is the point where the ordering cost and carrying cost are at minimum.

b. Algebraic Method

- This method assumes that demand, ordering and holding costs all remain constant.
- The formula to calculate EOQ using this method is:

$$EOQ = \sqrt{\frac{2 \times 12 \times \text{Monthly consumption} \times \text{Ordering cost}}{\text{Unit test} \times \text{Carrying cos t}}}$$

c. Tabulation Method

- Tabulation method is normally used when by increase in the quantity of purchases, there is a change in the price.
- In this method carrying cost is calculated on average.
- The least of ordering cost and carrying cost taken together will be the EOQ.

EOQ = Least ordering cost + Least carrying cost

Advantages of EOQ

1. Simple method
2. Widely used
3. Number of orders to be placed in a given period of time can be calculated

4. Purchase schedule can be prepared
5. Maintains minimum inventory

Q.19. Write a note on 'ABC analysis' is a method of inventory control. (S. 23)

ABC Analysis

ABC means always better control system.

Definition

ABC analysis is a mathod of inventory control in which materials are divided into three categories as A-category, B-category and C-category, on the basis of cost and number of items.

A-category: A few items which are very costly.

B-category: The items which are moderately costly.

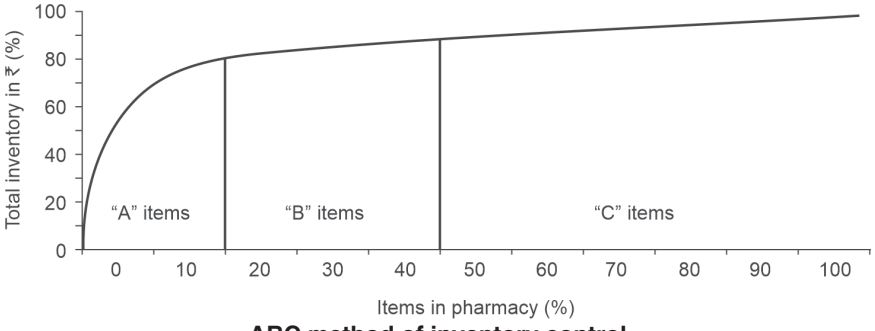
C-category: The large number of items which are very cheap.

According to international standards, items are categorised as:

Category	*% of items*	*% of investment/cost*
A	20	70
B	30	25
C	50	5

Features of ABC Analysis

	Nature	*A-category items*	*B-category items*	*C-category items*
1.	Control	Very tight	Moderate	Loose
2.	Level of management	Top level	Middle level	Low level
3.	Safety stock	Nil	Low	Higher
4.	Order frequency	High	Once in 3 months	Once in 6 months
5.	Review period	1 month	3 months	6 months
6.	Planning	Very accurate	Depending upon experience	Rough calculations



ABC method of inventory control

Advantages of ABC System of Inventory Control

1. It gives better control over costly items.
2. It helps in developing scientific method of control.
3. It helps in maintaining stock in a better way.
4. It reduces storage cost.
5. It maintains proper stock of ABC items.
6. It enables better planning for purchase.
7. It reduces clerical cost.

Q.20. Write a note on "VED analysis" as a method of inventory control.

VED Analysis

Definition

VED analysis is a method of controlling and maintaining the stock of various types of materials of a specific group.

The word VED means:

V—Vital items

E—Essential items

D—Desirable items

The items are classified into three items:

1. Vital Items

These are the items of which "out of stock" condition is never allowed. The unavailability will affect on selling process. Hence called vital items.

2. Essential Items

These are the items of which "out of stock" condition is tolerated for a few hours to one day, as the cost of unavailability is lesser than that of V items.

3. Desirable Items

These are items having very less importance. So unavailability of items does not affect the selling process. The out of stock condition can be tolerated up to one week.

Features of VED Analysis

	V-items	*E-items*	*D-items*
1.	Constant control and regular flow of material is necessary	Moderate control	Nil stock
2.	Moderate stock	Moderate stock	Low stock
3.	Out of stock condition not tolerated	Out of stock condition tolerated for a few hours to 1 day	Out of stock condition is tolerated up to one week
4.	Items of great significance	Less significance	Negligible importance

Advantages of VED Analysis

- VED analysis helps to maintain an optimum level of inventory.
- It is a crucial tool to understand and categorize inventory according to its importance.
- It helps to optimize costs by investing more in the vital and essential categories.
- It can be used by small and big pharmacies.
- It helps in classifying items into three categories and stocked accordingly.
- It brings economy in stock maintenance.

Q.21. Write a note on "perpetual inventory control" system.

Perpetual Inventory Control System

Perpetual inventory control is the spontaneous process of checking and recording of the stock, in which receipt, issue and balance of material is done regularly.

The perpetual method consists of:

1. Storekeepers ledger
2. Bin card method
3. Continuous stock taking

1. Storekeepers Ledger

- Ledger is the register in which one or more pages are kept for single item.
- The ledger is to be maintained by storekeeper.
- The balance of stocks is calculated 4–5 days before the order date.

2. Bin Card Method

- The bin cards are the information cards for each item.
- The bin cards provide the information at a glance.

- These are somewhat thick and used to record the receipts and issued entries.
- The bin cards are numbered serially and arranged in a filling cabinet or special drawer.

3. Continuous Stock Taking

- Some persons are appointed by management for this special duty (inspectors).
- The inspectors crosscheck the entries in store ledger and bin card. They also verify the stocks physically.
- Any variation in the stock is immediately informed to higher management.

Advantages of Perpetual System

i. Overstocking and understocking are avoided.
ii. Without disturbing routine, records can be checked.
iii. It provides physical verification of stocks.
iv. Any clerical mistake can be pointed out.
v. Timely actions can be taken in cases of shortage.
vi. The balance in stock can be known at any time.

Q.22. Write a note on various stock levels. Give the importance/ objective of setting various stock levels in inventory control.

Objectives of Setting Various Stock Levels

1. To maintain uniform flow of materials in the business.
2. To supply the materials uniformly to production department.
3. To minimise the investment in materials.
4. To achieve uniformity in quality and quantity of finished products.

Important Stock Levels in Inventory Control

(a) Maximum Stock Level

It is the upper limit of stock beyond which the stock of any item should not be allowed to increase.

Maximum stock level = Reordering level +
Reorder quantity – (Minimum consumption) × (Minimum lead time)

(b) Minimum Stock Level

It is the lower limit of stock below which the stock of any item should not be allowed to fall.

Minimum stock level = Reordering level – (Normal consumption × Normal lead time)

(c) Reorder Level

It is the level of stock of any item at which next purchase procedure is started. It is the level in between maximum and minimum stock levels.

Reorder level = Maximum lead time × Maximum consumption rate

(d) Safety Stock

The quantities of stock below the minimum stock levels are considered as safety stocks. They are utilised in emergency periods like strikes.

(e) Danger Level

When the quantity of stock falls below safety stock or minimum level it is known as danger level.

Danger level = Average rate of consumption × Emergency supply time

Q.23. Explain "effective purchase procedure" as a method of inventory control.

Effective Purchase Procedure

The effective purchase procedure involves three main activities.

1. Following the purchase schedule.
2. Taking decisions at correct times.
3. Studying market conditions, government policies and adjusting consumption of products continuously.

The steps to be taken during effective purchase are:

i. Feeling need of material
ii. Checking stocks available
iii. Asking for price lists/quotations/tenders
iv. Selection of suppliers
v. Negotiations with suppliers
vi. Forwarding purchase order
vii. Making provisions of the finance required
viii. Receiving the material
ix. Quality analysis of material
x. Physical verification of received materials
xi. Checking the accuracy of bills
xii. Making payments
xiii. Recording the materials in registers.

Advantages

a. It acts as a guide for further action.
b. It provides accuracy and pleasure of purchasing.

c. The documents are prepared for legal safety.
d. In certain business, purchase manuals are prepared.

Q.24. Define finance. Give the functions of finance. Enlist various sources of finance.

Finance

- Finance is a provision of money at the time when business requires it.
- Finance means money management and the process of acquiring needed funds.

Functions of Finance

1. To acquire land, building, machinery and equipment
2. To purchase raw material and other necessary items
3. To pay salaries and wages
4. To maintain regular supply of product in the market
5. To pay rent, insurance, taxes and advertising expenses
6. To allow credits to wholesalers.

Sources of Finance

Long-term source (for >5 years)	*Medium-term source (for 1–5 years)*	*Short-term source (for <1 year)*
• Equity shares • Debentures • Public deposits • Loans from financial institutions • Ploughing back of earning	• Preference shares • Medium-term loans • Debentures • Public deposits • Bank loans • Loans from financial institutes	• Cash credit • Overdraft • Trade credit • Advances from customers • Installment credit • Recirculation of profit

Q.25. Define the terms "share" and "debenture".

a. Share

When the capital is divided into smaller units, each unit is described as share. There are two types of shares:
1. Preference shares
2. Equity shares.

b. Debenture

Debenture is a document under company seal which provides for the payment of principal sum and interest thereon at the expiry period.

Q.26. What is financial management? Give objectives, functions and importance of financial management.

Financial Management

Financial management is the process of planning, organizing, staffing, directing and controlling the various activities of community pharmacy.

Objectives of Financial Management

1. The basic objective of any business is to acquire profit and objective of financial management is to maximise profit with appropriate spendings.
2. Financial management goal is the proper mobilization of finance.
3. Survival and growth of the business organization.
4. Financial management needs to establish coordination between financial decision areas and other supportive disciplines such as accounting, marketing, production, etc.
5. The operational objective of financial management is ensuring safety of investments.
6. Searching new and better sources of finance.

Functions of Financial Management

Following are the important functions of financial management:

1. Financial planning and forecasting
2. Determination of capital composition
3. Fund investment
4. Maintain proper liquidity
5. Disposal of surplus
6. Financial controls.

Importance of Financial Management

1. Financial management helps to take appropriate financial decisions.
2. It helps to establish guidelines that enable the entrepreneur to earn more profit with minimum costs.
3. A good financial management helps to control financial aspects of business.
4. It provides correct and reliable information about business activities through financial reporting.
5. An effective financial management is vital for business survival and growth.

Q.27. Define financial planning. Give objectives, features and importance of financial planning.

Financial Planning

Financial planning is a process of deciding the financial activities required for an organization to achieve predefined targets and goals.

Financial planning is the process of establishing financial rules of an organization's purchase, investment and administration of funds.

Objectives of Financial Planning

1. To determine capital requirements
2. To determine capital structure
3. To frame the policies with regards to cash control, lending, borrowings, etc.
4. To use limited financial resources to their maximum capability in order to maximize returns on investment.

Features/Characteristics or Essentials of Financial Planning

1. It should be simple.
2. It should be changeable as per the needs.
3. It should give maximum returns to money.
4. It should prevent the unwanted expenditure.
5. It should have long foresight.
6. It should have the provisions of emerging funds.
7. It should be such that borrowing should be at minimum rate of interest.
8. It should have proper inventory for raw materials and official requirements.
9. It should have arrangement of sufficient funds for the sales department.
10. It should maintain proper stock of raw materials and finished products.
11. There should be proper control over activities of business as per financial planning.
12. It should be able to face or overcome the uncertain conditions like fire, flood, penalties, etc.

Importance of Financial Planning

1. Adequate funds have to be ensured.
2. Financial planning helps in ensuring a reasonable balance between outflow and inflow of funds so that stability is maintained.
3. Financial planning ensures that the suppliers of funds are easily investing in companies which exercise financial planning.

4. Financial planning helps in making growth and expansion programmes which helps in long-run survival of the organization.
5. Financial planning reduces uncertainties with regard to changing market trends which can be faced easily through enough funds.
6. Financial planning helps in reducing the uncertainties which can be a hindrance to growth of the organization. This helps in ensuring stability and profitability in concern.

Q.28. Define the terms.

a. **Account:** It is a systematically summarised record of all daily financial transactions.
b. **Accountancy/accounting:** It is an art of recording, classifying, summarising the business transactions which helps in summarising records and finding out profits and losses.
c. **Transaction:** Transaction is an event in which there is exchange of goods or services, in cash or on credit.
d. **Capital:** It is the amount contributed by proprietor or partner in the business.
e. **Asset:** Assets means cash and fixed properties of the business.
f. **Liability:** It is the total amount or responsibilities payable by the business.
g. **Creditor:** A person who gives something in cash or kind to another person is a creditor.
h. **Debtor:** A person who receives something in cash or kind becomes debtor.
i. **Solvency:** When total assets or business are more than or equal to liabilities, the condition is known as solvency.
j. **Insolvency:** It is the condition in which liabilities are more than assets.
k. **Drawings:** It is the amount of money withdrawn by owner from business to meet personal expenses.
l. **Expenses:** Expenses are the efforts made by business to obtain revenues.
m. **Revenue:** It represents accomplishment of the business.
n. **Profit:** Profit is the excess of revenues over expenses in a particular period.
o. **Loss:** It is the excess expenses over income.

Q.29. Define accountancy (accounting). Give the objectives and functions/importance and accountancy in community pharmacy.

Accountancy (Accounting)

- Accountancy is an art of recording classifying, summarising the business transaction which helps in summarising records and finding out profits and losses.
- Accountancy is the systematic process or practice of recording, classifying and reporting on business transaction for a business.

Objectives of Accounting/Accountancy

The following are the main objectives of accounting:

1. **To keep systematic records:** The systematic record of financial transactions helps the users to understand the day-to-day transactions to gain overall business knowledge.
2. **To protect business properties:** Accounting provides protection to business properties from unfair and unnecessary utilization. Information about utilization helps the business owner to hold funds unnecessarily idle or underutilised.
3. **To ascertain profit:** Accounting helps in ascertaining the net profit earned or loss suffered on account of carrying the business through proper record of all books of accounts with respect to revenues and expenses of a particular period.
4. **To ascertain the financial position:** Accounting through balance sheet helps the business owner to know more about financial position of a business.
5. **To facilitate decision making:** Accounting helps in the collection, analysis, and reporting of information at the required points of time to the required levels of authority to facilitate rational decision-making.
6. **To be an information system:** Accounting functions as an information system for collecting and communicating economic information about the business enterprise that helps the management in taking appropriate decisions.
7. **To comply with legal requirements:** Accounting is must for auditing. It is done to comply with legal requirements. The tax returns and financial statements filed are made from the accounting information.

Advantages of Accounting/Accountancy

1. A firm can know the exact profit or loss made by it in a particular period.

2. The reasons leading to the profit or loss can also be ascertained.
3. The financial position of the business concern can be assessed.
4. The firm can know the amount due to debtors and the amount due to the creditors.
5. The efficiency or performance of the department or section can be ascertained.
6. The approximate cost of production of goods manufactured can be known.
7. Based on the financial results, it can decide on the products to be manufactured, the activities to be continued and what activities to be dropped.
8. Accounting is useful in submitting the statutory returns like income tax, sales tax, commercial tax, etc. to the government in time.

Functions and Importance of Accounting/Accountancy

1. Identification, recording, classification and summarization of transactions.
2. Ascertainment of financial position of the organization.
3. Control of financial policy.
4. Designing of further planning of business.
5. Preparation of budget.
6. Cost controls.
7. Evaluation of employee's performance.
8. Prevention of errors and frauds.

Q.30. What do you mean by Daybook in Accounting? Explain various types of Daybooks. Give the format of sales Daybook. (S. 24)

Daybook

Daybook is a book of original entry in which the transactions are recorded datewise, as they occur. This information is then transferred into a ledger from which the information is summarized into a set of financial statements.

- Daybook is also called "sales journal" used for recording of credit sales.
- Journal is commonly known as book of original entry or the daybook is a book of transactions recorded in a chronological order.

There are six main types of daybook formats used in accountancy:

1. Sales daybook: To record sales invoices.
2. Sales returns daybook: To record sales credit notes.
3. Purchase daybook: To record purchase invoices.

4. Purchase returns daybook: To record purchase credit notes.
5. Payments cashbook: To record money paid out of the business.
6. Receipts cashbook: To record money paid into the business.
7. General journal register or journal book.

Format of Sales Daybook

Sales daybook

Date	Invoice number	Customer/ supplier name	Net amount	VAT amount	Gross amount

Explanation

- **Date:** Date is important for an account to consider which financial year it falls into, which VAT return it falls on, etc.
- **Invoice number:** This is the reference number to the source document. It enables user to quickly find the original document that should be filed away.
- **Customer/supplier name:** This enables user to spot which customers have invoices for, who should be tracking, or which suppliers owe money to.
- **Net amount:** This is the actual amount of the sale or purchase records in the accounts.
- **VAT amount:** This is the amount of VAT due to be paid over or reclaimed.
- **Gross amount:** This is the amount received or paid out of the bank, depending on whether it is a sales or purchase daybook.

Q.31. Define cash book. Give the objectives, features and importance of cash book.

Cash Book

Cash book is the book of accounts in which all the cash transactions are recorded and maintained.

Objectives of Cash Book

1. To save the time in preparing journal and ledger.
2. To collect and record all the cash transactions.

3. To calculate cash at hand.
4. To save the workers enganged in maintaining records.

Important Features of Cash Book

1. Cash book is recorded in chronological order.
2. Balance is updated and verified on continuous basis.
3. It is subsidiary to general ledger.
4. Primary goal of cash book is to manage cash efficietly making it easy to determine cash balance at any point of time.
5. Since only cash transactions are recorded, it is special journal.
6. It is both journal and ledger.
7. Balance is cash in hands.

Advantages/Importance/Functions of Cash Book

1. Cash receipts and payments for a particular period can easily be founded out.
2. It becomes convenient to find any cash transactions for future reference.
3. It avoids the journalization of huge cash transactions.
4. The amount of cash in hand can be found out at any time, and it can be compared with the cash in a cash box.
5. Cash book minimizes time and labor in preparing the ledger as it performs both the journal and ledger functions.
6. Proper maintenance of the cash book influences the cashier's mortality.

Q.32. Describe/explain various types of cash book. (S. 23)

Types of Cash Book

1. Single column cash book.
2. Double column cash book.
3. Triple column cash book.
4. Petty cash book: It is of two types:
   i. Simple petty cash book.
   ii. Analytical petty cash book.

1. Single Column Cash Book

- It is known as simple cash book.
- It contains only the cash transactions done by the business.
- It has only a single money column on debit and credit both sides.
- It does not record the transaction related to banks or discounts.
- A central vertical line divides a cash account into two sections, as debit and credit.

Format of single column cash book

Dr				*Cr*			
Date	*Particulars*	*LF*	*Amount*	*Date*	*Particulars*	*LF*	*Amount*

2. Double Column Cash Book

- Double column cash book contains two money columns both on the debit side as well as credit side.
- One column is for transaction related to cash and other column is for the transactions related to the bank account of the business.

Format of double column cash book

Dr					*Cr*				
Date	*Particulars*	*LF*	*Bank*	*Cash*	*Date*	*Particulars*	*LF*	*Bank*	*Cash*

3. Triple Column Cash Book

- This cash book contains three columns, the cash, bank and discounts.
- This book is generally maintained by the large firms that do transactions in cash mode as well as through the bank and frequently allows and receives cash discounts.

Format of triple column cashbook

Dr						*Cr*					
Date	*Particulars*	*LF No.*	*Discount Rs*	*Cash Rs*	*Bank Rs*	*Date*	*Particulars*	*LF No.*	*Discount Rs*	*Cash Rs*	*Bank Rs*

4. Petty Cash Book

It is the book of account which records the transactions of minor amounts (petty) and those transactions which are essentially take place on cash basis.

Examples

Stationary, cooliage, telephone, travelling, etc. In large organisations a person is appointed to make minor cash payments. He is known as petty cashier. The petty cashier receives a definite amount from cashier and he

uses the same in a definite period (7 days, 15 days, 30 days, etc). At the end of the period, petty cashier submits the records and the cash balance to the cashier. The cashier recovers the expenses made to the petty cashier. This is known as "imprest system".

1. **Simple petty cash book:** It is similar to general cash book having two sides receipts and payments.

Simple petty cash book

Receipts Rs	*CBF*	*Date*	*Particulars*	*V No.*	*Payments Rs*

2. **Analytical petty cash book (columnar petty cash book):** In this type, receipts are recorded on right side. The left side has two columns for the amount received and the cash book folio (CBF) number, with date and particulars. Payment side is suitably analysed into columns for entering in various types of expenses.

Analytical petty cash book

Receipts Rs.	*CBF*	*Date*	*Particulars*	*V No.*	*Payment Rs*	*Post and Tele-phone*	*Coolie charges in Rs.*	*Travelling expenses in Rs.*

Advantages of Petty Cash Book

1. It saves labour as all petty expenses are neither recorded in the cashbook nor in the ledger.
2. It saves the head cashier a lot of time as the petty expenses are recorded in the petty cash book.
3. It is very simple to record all the petty expenses in various columns of petty cash book.
4. There are less chances of fraud as it is essential to keep the vouchers of all petty expenses.

Q.33. Write a note on "pharmacy operation softwares".

Pharmacy Operation Softwares

Pharmacy operation software is computerized application that allows retail and wholesale pharmacies to streamline their daily operations and workflows to fulfil business needs.

- Pharmacy operation software is also known as pharmacy management system (PMS).
- The primary purpose of pharmacy operation software is to assist the pharmacist in the safe and effective delivery of medicines.
- Software provides variety of solutions such as prescription management, point of sale (POS), automatic refills, barcode scanning, e-prescribing, etc.

Need of Pharmacy Operation Softwares

- Easy billing and accounting.
- Maintenance of optimum inventory of medicines.
- Accurate tracking of expiry.
- Alerts regarding drugs getting expired soon, reminders to customers.
- Maintaining records of transactions.
- To comply to the regulatory requirements.
- To retain and gain customers by providing quick services.

Scope of Pharmacy Operation Softwares

- Improves pharmacists efficiency.
- Improve patients health outcomes.
- Prevents medicine frauds.
- Help in document management.
- Digital and traceable prescriptions are easily accessible.
- Revenue cycle management.

Advantages/Benefits of Pharmacy Operation Softwares

1. Complete control over inventory, thereby ensuring balance between out of stock situation and excessive stock with tying up of money.
2. Fast and accurate billing, invoicing.
3. Damaged stock tracking.
4. Batch tracking.
5. Generating multiple bills of customers simultaneously, thereby saving time.

6. Alerts on drugs that are soon going to expire.
7. Through web-based management systems, the return of expired drugs to vendors for return credit.
8. Flexible drug equivalent display allows for selecting suitable alternative brand based on composition of the product, when particular brand is not available.
9. Ensure compliance to several regulations such as necessity of keeping records of transactions.
10. Through barcoding, quick access to detailed information of the product.
11. Ensure faster pharmacy workflow.
12. Faster order placement and accurate purchase management.
13. More cost and time efficient and hence high profits.
14. The entire workflow starting from procurement of drugs up to delivery of drugs to customers is streamlined.
15. Giving individualized experience to customer.
16. Automate the tasks like inventory management and customer outreach.

Q.34. Enlist and discuss various pharmacy operation softwares used in pharmacy business.

Availability of Pharmacy Operation Softwares

A. Globally Available Pharmacy Softwares

1. **Enterprise Rx:** This software provides support for wholesaler and distributors for its operations to build a profitable business.
2. **Cerner retail pharmacy:** This pharmacy software ensures the data flow across processes.
3. **Pioneer Rx:** It offers a few mobile apps for both patients and pharmacists.
4. **Winpharm:** Its additional services include designing custom labels, discounts on credit card processing, etc.
5. **Prime Rx:** It is a micro merchant system (MMS) allows coupling customizable software using many of its pharmacy solutions.

B. Pharmacy Softwares in India

1. **Marg ERP9:** It is used for managing data and live credit limit.
2. **AlignBooks:** It is used by pharmacy stores for billing and business accounting.
3. **Bill SMART:** This system is used for updating inventory and generating quick and automatic bills.
4. **Citta solutions:** It helps in prescription refilling.

5. **Code robotics:** It is an open source pharmacy software used for management of sales, purchases, inventory and manufacturing.
6. **Pharma Biz:** It is a pharmacy billing software used for streamlining processes related to accounting, inventory, customer credit, balance sheet, purchase and sales.
7. Other pharmacy softwares popular in India are: Miracle, Csquare, MocDoc, BestRx, Medeil, Retail Graph, LOGIC pharma, etc.

Q.35. What is customer relationship management? Give its need and importance.

Customer Relationship Management (CRM)

Definition

Customer relationship management (CRM) in community pharmacy is the process of identifying the customers, understanding their needs and building relationship with them to improve their health, gain their trust and increase the professional and financial rewards.

Need and Importance of Customer Relation Management (CRM)

1. Providing better service to customers.
2. Creating loyalty and customer retention.
3. A management strategy that results in enhanced profit for business.
4. Develop long lasting relationship with valuable customers.
5. Customer gets enhanced satisfaction and a feeling of being special.
6. Help to organize training for staff, so that, staff becomes more customer oriented.
7. Get competitive advantage in the market.
8. Building image and reputation for the pharmacy.
9. Gives high returns on investments.

Benefits of Positive Customer Relationship

- **Customer retention:** If a customer has relationship with the pharmacy staff, he will visit that pharmacy for every purchase of his medicines. When customer has a positive experience with a particular pharmacy, it is very difficult for a competitor to woo them away.
- **Customer loyalty:** Having positive relationships with customers inspires a type of loyalty. It helps to overcome many common reasons why customers go over to competitor, including cost and convenience.
- **Customer acquisition:** The happy customer may introduce your pharmacy to many of his friends.

- **Customer satisfaction:** If customer has a great relationship with the pharmacy staff, he would felt comfortable talking with them about any health problems they encountered with their products or service. Most customers will just stop shopping at a pharmacy rather than complaining. Thus, positive customer relations make it easier to get customer feedback.

Strategies to Establish/Build Positive Customer Relationship

1. To understand and meet customers needs.
2. Call the patient by name.
3. Listen carefully their questions.
4. Counsel the patients and ensure patient has followed the instructions.
5. Educate and train the staff for such practices.
6. Consistent interaction of pharmacy and its staff interaction with more interested customers.
7. Keep and fulfil the commitments and promises in the minds and heart of the customers.
8. Invest in emotional connections with the customers.
9. Prioritise customer satisfaction.
10. Apply "patient focused practice".
11. Trust on the customers.
12. Start health screening facilities such as blood sugar estimation, blood pressure checking, etc.
13. Be friendly on phone.
14. Be professional.
15. Ensure that patient feels comfortable.
16. Ensure customer privacy.
17. Be friendly and welcoming.
18. Learn customers attitude.

Q.36. Define audit. Give the need, importance and benefits of audit. Explain the types of audits in pharmacy. (W. 23)

Audit

Audit can be defined as unbiased examination and evaluation of the financial statements of an organization.

- In pharmacy, audits are used for various operations, including retailing, services and loss prevention, health and safety standards.
- Retail pharmacies typically conduct loss prevention and health and safety audits at specific times throughout the year.

- Financial audit in pharmacy includes financial accounts, regulatory compliance, best practices followed and services delivered.

Need and Importance of Auditing

1. **Compliance:** Regular auditing saves thousands of manhours and contribute to compliance with health and safety standards.
2. **Business/system improvement:** Improvement in daily operations and services shall certainly result into improvement in business.
3. **Credibility:** Improvement in daily activities avoiding errors shall help to enhance credibility of the pharmacy.
4. Prevent occurrence of common problems.
5. **Confidence for facing regulatory inspection:** Regular internal auditing generate confidence making pharmacist more relaxed about inspection by regulatory authority.
6. Better planning and budgeting.

Benefits of Audits in Pharmacy

- It helps to maintain good professional standards by increasing customer satisfaction.
- It improves the quality of work through evidence-based results.
- It enhances efficient use of people, time and money.
- It helps to support change by producing objective information about the quality of care.
- Audits help to predict and project gross product sales and profit or loss of a business.
- It prevents claims, loss, and fees associated with health and safety neglect.
- Audits help to reduce inventory, storage cost and waste from retailing.
- It maintains and upgrades pharmacy standards by communicating best practices.
- It identifies trends and areas for improvement to make educated business decisions.

Types of Audit in Pharmacy

1. **Pharmacy audits:** Pharmacy audits can be performed as on-site audits or desk audits. Often on-site audits are the preferred because it can uncover more information, such as expired medications and restocked medications, improper storage of prescription medications. Desk audits are performed when there is significant data available to verify regulatory documentation.

2. **Pharmacy compliance audits:** On-site pharmacy compliance audit process involves a physical review of pharmacy procedures and practices. It includes a statutory review, review of hard copy prescriptions, pharmacy inventory, licenses and permits, patient counselling and more. The focus includes compliance with controlled substance utilization, refill validations, and other aspects of prescriptions.
3. **Fraud investigations:** In this audit in-depth and extensive on-site audit is performed to substantiate patterns of fraud or abuse. The on-site fraud investigation process occurs with or without notice and is conducted by one to two pharmacists, and possibly a technician.
4. **Merchandising audits:** Merchandising audits are conducted to ensure that product location, shelf space, displays, pricing and promotions are executed as agreed between pharmaceutical companies and pharmacy retailer.
5. **Self audit:** The self audit of retail pharmacy is suggested for the assessment of the working of the firm. It is conducted to verify whether the firm is working as per the D&C Act 1940, by the registered pharmacist. It includes verification of prescribing practices, controlled substances management, invoice management and billing practices.

Q.37. Explain "a typical checklist for self-inspection audit of community pharmacy".

A Typical Checklist for Self-inspection/Audit of Community Pharmacy

A. Organization Details

1. Name of the pharmacy.
2. Address of the pharmacy.
3. Type of firm: Proprietorship/Partnership/Private Ltd.
4. Copy of the constitution of firm: Available: Yes/No.
5. License displayed prominently: Yes/No.
6. Validity of license: Date .....
7. Renewal of license fees submitted: Yes/No.
8. File regarding correspondence with drug department is maintained: Yes/No.
9. Name of the responsible person of the firm.

B. Facilities

1. Dust free environment in the premises is maintained: Yes/No.
2. Continuous supply of electricity is maintained with the provision of generator: Yes/No.

3. Exposure of drugs to direct sunlight is avoided: Yes/No.
4. Air conditioner is installed to control temperature in the pharmacy: Yes/No.
5. Drugs are stored in the racks and not stocked directly on the floor: Yes/No.
6. Refrigerator is provided: Yes/No.
7. Refrigerator is in working condition: Yes/No.
8. Record of temperature in refrigerator is maintained: Yes/No.
9. Are food items stored in refrigerator?: Yes/No.
10. Switching off the refrigerator in the night: Yes/No.
11. Have you installed CCTV camera in your pharmacy?: Yes/No.
12. Ayurvedic medicines have separate rack and labeled as "Ayurvedic medicines": Yes/No.
13. Veterinary drugs have separate rack and labeled as veterinary drugs not for human use: Yes/No.
14. Have you made any spatial changes? If yes, have you notified it to competent authority?: Yes/No.

C. Human Resources

1. Name/s of registered pharmacist: .....
2. Registration certificate/s are displayed prominently in the pharmacy: Yes/No.
3. Has any registered pharmacist resigned? Any new registered pharmacist appointed? If yes, the changes to be communicated to drug department within one month: Yes/No.
4. Are duty and substitution schedule available? Is permanent presence of pharmacist ensured? Yes/No.
5. Are the drugs sold under the personal supervision of registered pharmacist? Yes/No.

D. Documents and Records

1. Purchase records of drugs are maintained properly? Yes/No.
2. Is the purchase record maintained in chronological order? Yes/No.
3. Drugs are purchased from licensed dealers only? Yes/No.
4. Are purchase invoices bear all mandatory details? Yes/No.
5. Are sale records of drugs maintained in legible manner? Yes/No.
6. Do sale records contain details of both prescriber and patient? Yes/No.
7. Sale invoices are signed by registered pharmacist. Yes/No.
8. Is schedule-H_1 register maintained? Yes/No
9. Were prescribed documentation carried out? Yes/No.
10. Is documentation up-to-date? Yes/No.

11. Were documents signed by authorized person? Yes/No.
12. Is storage and archiving of documentation regulated? Yes/No.

E. Compliance to Regulations

1. Expiry drugs found stocked? Yes/No.
2. Expiry drugs separated and stocked in rack labeled as 'expired drugs not for sale': Yes/No.
3. Correspondence with dealers regarding expired drugs: Yes/No.
4. Drugs like "physicians sample not for sale' and 'hospital supply drugs not for sale' are found stocked in pharmacy: Yes/No.
5. Are 'banned drugs' found stocked? Yes/No.
6. Are Schedule-X drugs and essential narcotic drugs stocked and sold? Yes/No.
7. If yes, the required licenses for dealing such drugs have been obtained: Yes/No.
8. Date of last inspection conducted by drugs control officer: .....
9. The copy of last inspection report is maintained: Yes/No.

Date: ..... Signature: .....
Name: .....

Q.38. Define SOP. Give the objectives/purpose of SOPs. Mention various activities in pharmacy to which SOPs are required. (S. 23, 24)

SOP (Standard Operating Procedure)

Definition

SOP is a document which describes as to how an activity should be performed systematically in a stepwise manner. SOPs should be available at the place of work.

Objectives/Purpose of SOPs

1. To ensure the quality of pharmaceutical services provided to the patients.
2. To avoid any errors in the activities of pharmacy.
3. To ensure uniformity of services provided.
4. SOP acts as a motivational tool for pharmacist to perform better.
5. Ensure regulatory compliance.

SOPs for Various Activities in Pharmacy

1. SOP for procurement of medicines
2. SOP for receiving drugs into pharmacy
3. SOP for drug storage

4. SOP for vaccine storage
5. SOP for temperature control
6. SOP for dispensing of medicines
7. SOP for patient counseling
8. SOP for dispensing speciality products
9. SOP for checking of expiry
10. SOP for disposal of expired drugs
11. SOP for receiving prescription
12. SOP for computerized billing
13. SOP for manual billing
14. SOP for recording dispensing errors
15. SOP for refilling the prescriptions
16. SOP for training of staff
17. SOP for cleaning of pharmacy
18. SOP for supply of OTC products
19. SOP for keeping patient-medication records
20. SOP for cleaning of refrigerator.

Q.39. Give the SOPs for the following:

a. Cleaning of pharmacy
b. Procurement of medicines
c. Receiving drugs
d. Temperature control in the pharmacy
e. For dispensing of medicines
f. For expired goods.

a. SOPs for Cleaning of Pharmacy

1. Prepare a cleaning schedule mentioning the frequency of cleaning the items.
2. Clean the floors daily using disinfectant solution.
3. Clean the counter tops. Dedust and wipe counters thoroughly.
4. Clean the shelves weekly, wipe the medicine boxes, bottles. Clean to remove dust.
5. Keep patient counselling area neat and tidy.
6. Clean the bulk storage area (racks) weekly. Wipe the boxes, cartons clean.
7. Defrost and clean refrigerator monthly.
8. Allocate responsibility to workers, specially for sanitation of toilets.
9. Ensure availability of cleaning equipment, materials and disinfectants.
10. Maintain the records of cleaning activity performed.

b. SOPs for Procurement of Medicines

1. Make sure that the order list is ready.
2. Confirm the availability of funds.
3. Decide the quantity of each item based on need and availability of funds.
4. Identify suppliers.
5. Prepare an order form.
6. Contact suppliers to quote the returns and complete the form.
7. Confirm that names, strengths and dosage form of each drug have been entered in the form.
8. Provide the package size required.
9. Name of manufacturer, quantity required for specified.
10. There should be a column for expiry date in the order form.
11. Place the order.
12. Preserve the duplicate copy of order placed.

c. SOPs for Receiving Drugs

1. Identify and prepare store space.
2. Ensure to have a copy of order placed for checking the items received.
3. Receive the stock along with the invoice.
4. Keep newly arrived stock in segregated area and check for damage, if any.
5. Check the stock itemwise against order copy and invoice. Check carefully the name, strength and expiry date.
6. Any damage, leakage, defaced label should be recorded in a discrepancy register.
7. Report immediately the discrepancies to supplier.
8. Document all items received.
9. Place the items in respective shelves.

d. SOPs for Temperature Control in the Pharmacy

1. Assign the responsibility of temperature recording and monitoring to responsible person.
2. Check the temperature and humidity in the pharmacy twice daily using thermometer and hygrometer.
3. Maintain the record of temperatures noted in a separate register.
4. Periodically calibrate the thermometer used for temperature measurement.
5. Deviations observed, if any, should be noted and prompt corrective measures are taken.
6. Document the actions taken.

e. SOPs for Dispensing of Medicines

1. Greet the patient and introduce yourself saying, "I am a pharmacist'.
2. Receive, read and validate the prescription.
3. Identify the prescriber's intention for the patient and confirm the ownership of prescription.
4. Check and confirm the availability of items to be dispensed.
5. Cost of the medicines prescribed.
6. Inform the patient about the cost of the medications.
7. Collect the correct medicines/items while reading the label on the container/package.
8. Keep the medicines in an independent container in front of the patient.
9. Write the label on each medicine giving precise direction for use.
10. Counsel the patient, about correct use of medicines.
11. Proceed for billing, while billing final check of medicines against the prescription is to be performed.
12. Put the signature on the bill.
13. Give the bill to the patient asking him to make payments.
14. After receiving the payment of the bill, handover the medications in a packet to the patient.

f. SOPs for Expired Goods

1. Ensure to have independent storage area (cupboard/shelf) meant for expired items.
2. Prominently label such area as "expired goods, not for sale".
3. Identify and assign the responsibility of expired goods to a responsible person.
4. Select expired goods, make its entry in a register meant for that purpose and then store it in a designated area.
5. Dispose off the expired goods by returning them to the stockist/ manufacture or by following guidelines laid down for the treatment of expired goods.
6. Record the action taken regarding disposing of expired goods in the register.

Q.40. Define the term "digital health". Give the goals and objectives of digital health. (S. 24)

Digital Health

Definition

Digital health refers to the use of information and communication technologies in medicine and other health professions to manage illnesses and health risks and to promote wellness.

Digital health includes the use of:

i. Wearable devices
ii. Mobile health
iii. Telehealth
iv. Telemedicines

Objectives and Goals of Digital Health

The objectives of digital health products and services are:

- To improve the quality of outcomes of care and service
- To improve population health
- To improve the patient experience
- To improve the physician and other non-physician provider experience
- To address health disparities.

Examples/Categories of Digital Health Products and Services

- Remote sensing and wearables
- Telemedicine and health information
- Data analytics and intelligence, predictive modeling
- Health and wellness behaviour modification tools
- Bioinformatics tools (omics)
- Medical social media
- Digitised health record platforms
- Patient-physician-patient portals
- DIY diagnostics, compliance and treatment
- Decision support system
- Imaging.

Importance/Benefits of Digital Health

- Digital health helps to prevent disease, lower healthcare costs, reduces inefficiencies and allows patients to monitor and manage chronic conditions.
- It can make medicine more personalized for patients.
- It provides patients to have quicker access to health services, improves their quality of care provided to them and helps to reduce burdens on healthcare facilities.
- It helps in early detection of significant changes to disease progression in a patient.
- It increases the sense of partnership, trust and transparency between patient and doctor.
- It enables patients to provide their health information to their physician at any time.

- It reduces the disease management financial burdens for both the hospitals and patients.
- It increases efficiency and improved medical outcomes.
- It has increased access to information through smart phones, social networks, internet applications.
- It helps in expanding the reach of healthcare professionals.

Q.41. What do you mean by mHealth? Give the classification of mHealth apps. Give the benefits/advantages and disadvantages of mHealth.

mHealth (Mobile Health)

Definition

Mobile Health (mHealth) is a term used for practice of medicine and public health supported by mobile devices such as mobile phones, patient monitoring devices, personal digital assistance and other wireless devices.

- The perfect example of mHealth is 'Mychart'.
- mHealth is an abbreviation for mobile health.
- During the fight against the COVID-19, *Arogya Setu* application launched by Government of India, has played a key role in meeting various healthcare demands.

Classification of mHealth Apps

1. **Telemedicine apps:** These apps help the user to connect the doctors for consultation regarding health issues via video, voice or chat, e.g. eVisit, Talkspace, Doctor on demand.
2. **Health living apps:** These apps help to check metrics like heart rate, diet, exercise and sleep.
3. **Remote monitoring apps:** These apps help the doctor to take care of the patients even when they are at home, e.g. Healthcare.
4. **Clinical and diagnostic apps:** These apps help the patients and doctors to check the symptoms and diagnose the illness.
5. **Productivity apps:** These apps help to increase the efficiency within the healthcare providers.
6. **Women's health apps:** These apps help to provide good resources and information related to pregnancy tracking, weight monitoring, medication reminder, sleep cycle tracker, period and ovulation tracker, etc., e.g. Hello Clue, NextPill, MINDBODY, Eve by Glow.

Advantages/Benefits of mHealth

1. mHealth apps are convenient to use and save travelling time between home and hospital and reduce frequent hospital visits.

2. It can enhance healthcare delivery with more efficiency.
3. Allow users to continuously track and manage certain health data on their own.
4. It bridges the gaps in care by allowing patients to communicate with their physician or care team and *vice versa* without meeting face to face.
5. It also allows healthcare providers to communicate with each other about patients.
6. It improves patient's medication adherence.
7. It makes remote patient monitoring possible and easy.
8. Increases medication understanding accuracy which improves patient safety.
9. It significantly reduces cost associated with the healthcare consultation.

Disadvantages of mHealth

1. Clinicians are unsure whether to recommend mHealth apps.
2. User's health information can be stolen.
3. It lacks effective regulatory oversight.
4. It is not accessible to everyone.
5. These apps may not provide accurate health information.
6. Identifying safe and helpful mHealth app is difficult.
7. The numerous apps do not mean all have quality.

Q.42. Define online pharmacy (e-Pharmacy). Give advantages and disadvantages of online pharmacy. Mention various online pharmacies running in India. (W. 23)

Online Pharmacies

Definition

Online pharmacy is a pharmacy that works over the web that facilitates the availability of medicines and other healthcare items without the need for people to visit the pharmacies.

- Online pharmacy is also known as "online drugstore", "web drugstore", "e-pharmacy", "internet pharmacy" or "mail-order pharmacy".
- Online medicine business saves time of visiting an actual pharmacy.
- A customer needs to upload the actual copy of a prescription on the online pharmacy's portal and make the payment.

Advantages of an E-Pharmacy (Online Pharmacy)

1. **Convenience:** It is easy to order online medicines with prescription. Individuals who live great distances from a terrestrial pharmacy,

the elderly, disabled persons, all can benefit from the easy and fast purchasing of medicines online.

2. **Future vision:** Under Digital India initiative, *Jan Aushadhi Programme*, the government takes initiative to create awareness and provide access of affordable medicines to the general public which compromising to good quality drugs. The operating model of E-pharmacy which has mobile and web-based applications, directly linked to inventory and dispensing existing at *Jan Aushadhi* stores.
3. **Time saving:** The individuals can log into the internet, head over to an E-pharmacy website and buy any prescription medicine that individual wants. It takes less time and effort than travelling to the local pharmacy and having to wait in the line for medicine.
4. **Lower price:** Drug shopping on the internet helps a buyer to save money.
5. **Private and confidential:** This is particularly helpful to people who find it hard to speak face to face with doctors and pharmacists. It is also helpful to people who feel as if they have very shameful situations like erectile dysfunctioning, acne, STDs, hair loss, etc. They can order their products confidentially.
6. **Range of choices:** E-pharmacy offers a great variety of options. They usually have larger stocks of drugs than a physical pharmacy.
7. **Medical information:** Some online pharmacies provide useful information about medications and diseases as well as links to medical resources such as universities, government agencies, and health associations.

Disadvantages of E-Pharmacy (Online Pharmacy)

1. **Lack of physical evaluation in place:** Online stores do not have any processes of medical supervision or physical evaluation in place.
2. **Need of using the same online pharmacy all of the time:** If a person does not use the same online pharmacy all of the time, they may not be aware of any potential drug interactions, it can be difficult to find someone to answer any specific questions about medications.
3. **Some online pharmacies do not adequately safeguard individual health:** By failing to require a prescription, patient could take medication that is not appropriate for him. It could take patient to the extreme stages of sickness.
4. **Some do not adequately protect the personal and financial information:** It is important for pharmacy websites to publish their privacy policy, one that promises not to share personal information with

third parties. Online financial transaction should be secured through adequate use of encryption technology.

Various Online Pharmacies Running in India

1. **PharmEasy:** It is the biggest online pharmacy in India. It offers OTC items, human services items and medicines and delivers them home within 2–4 days sparing flat 20% rebate on each request. It also provides facility to book well-being tests with a rebate of up to 70% and free sample pickup.
2. **Practo:** Practo is involved in medical checkups, surveys and online medicine business in India. It has online drug application in more than 100 urban areas across India. Practo health app has tied up with several pharmacies to dispense prescriptions and deliver at customer's doorstep on schedule.
3. **1mg:** 1mg is a growing online pharmacy by Tata group. It allows customers to purchase their prescribed and OTC medicines on the web portal and access related data. The organisation has set-up associations with nearby pharmacy stores to handle with the customer's medicine needs.
4. **NetMeds:** NetMeds is an online pharmacy application launched by the Dadha Company. It offers a rebate of 15% and delivers medicines within 2–3 days. It also provides customers an option to pay their medicine bills in installments.
5. **BookMeds:** It offers medicines, care items, orthopaedic products, mother and infant care, emergency clinic hardware, therapeutic contraceptions, protein supplements, wellness items, and many more. It operates in over 600 Indian postal codes across India. They provide fastest delivery of medicines within 4 hours of requesting.
6. **SmartMedics:** It offers a facility of calling SmartMedics customer service or through its application and collecting the prescription from customer's home. It delivers medicines within 2 days.
7. **We Chemist:** It makes a wide range of prescription medicines and other health products conveniently available all across Delhi, NCR. Customers need to upload their prescription on their appliation, choose location and affirm the request.
8. **BrownPacket:** It offers up to 22% discount on the order. It collaborates with neighbourhood pharmacies and welcomes them to join its network. Presently, they provide service in Bengaluru, Patna and Delhi.

Q.43. Give the comparison/difference between "retail pharmacy and online pharmacy (e-pharmacy).

Comparison between Retail Pharmacy and Online Pharmacy (e-pharmacy)

Sr. no.	*Retail pharmacy*	*Online pharmacy (e-pharmacy)*
1.	Licensed premises for storing and dispensing drugs	Premises from where drugs are distributed is unknown to public.
2.	Registered pharmacist legally qualified and competent is involved in the activities.	Registered pharmacists may not be involved in the activities.
3.	Safety and efficacy of medicines is ensured.	Stability and storage of medicines are the issues that cannot ensure safety and efficacy of drugs.
4.	Information about OTC drugs taken, allergy to certain medicines, habits of patient considered while dispensing, hence safety of patient is taken care of.	No such provisions are possible and hence safety of patient is neither considered not taken care of.
5.	Regulated sale of prescription and other restricted drugs	Unregulated sale of drugs
6.	Even OTC drugs are issued after confirming the need and usefulness of drugs.	No such provisions
7.	Patient counselling, though not mandatory is done/possible.	Not possible
8.	Medication adherence can be checked.	Doorstep delivery indirectly enhance medication adherence in elderly patients
9.	Patients can consult community pharmacist any time to get the doubts clarified during entire therapy.	Not possible
10.	Possibility of drug abuse, misuse, self-medication can be curbed.	May promote abuse, misuse and self-medications
11.	Quality of medicines dispensed is ensured.	Possibility of selling sub-standard, counterfeit, banned, adulterated drugs.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. ABC analysis means **always better control**.
2. Community pharmacists are also known as **drug specialists**.
3. A stock of a physical commodity is referred to as **inventory**.
4. **Chain pharmacies** mean retail pharmacy owned by corporation.
5. Minimum space required for retail Drugstore is **10 m^2**.
6. **Inventory** refers to the stock of products held to meet future demand.

7. **Layout design** is a plan explaining proper and maximum utilization of space inside the four walls of business.
8. Cold storage condition means **any temperature not exceeding 8°C**.
9. **Vendor audit** involves examination, checking and observation of supplier's premises and transport facility.
10. Economic order quantity is used for **purchase**.
11. DGS&D stands for **Directorate General Supplies and Disposals**.
12. VED means **vital, essential and desirable** items.
13. MSD means **medical store depot**.
14. Minimum practical training required for registration of pharmacist is **not less than 500 hours**.
15. EOQ means **economic order quantity**.
16. The process of assessing the capital required and choosing its completion is known as **financial planning**.
17. **Recorder level** is the level in between maximum and minimum stock levels.
18. When the quantity of stock falls below safety stock or minimum level, it is known as **danger level**.
19. Petty cash book is a book of account which records **minor amounts**.
20. Pharmacy operation system is also known as **pharmacy management system (PMS)**.
21. CRM stands for **customer relationship management**.
22. EOQ is the balance between **ordering cost and carrying cost**.
23. Effective purchase procedure is a method of **inventory control**.
24. **Audit** is an unbiased examination and evaluation of the financial statements of the organization.
25. SOPs means **standard operating procedures**.
26. Finance is the **provision of money** at the time when business requires it.
27. **Daybook** is a book of original entries.
28. **Digital health** refers to the use of information and communication technologies in medicine and other health profession to manage illness and health risks and to promote wellness.
29. Long-term source of finance means duration is for **more than 5 years**.
30. Daybook is also called **sales journal** used for recording of credit sales.
31. When the capital is divided into small units, each unit is described as **share**.

32. **Accountancy** is an art of recording, classifying, summarising the business transactions which help in summarising records and finding out profits and losses.
33. **Telehealth and telemedicines** are the examples of digital health.
34. mHealth refers to **mobile health**.
35. Mychart is a perfect example of **mHealth**.
36. **Aarogya Setu app** is launched by Government of India during the fight against COVID-19.
37. Online pharmacy (e-Pharmacy) is also known as **web drugstore**.
38. Frequent purchasing in quantities to meet demand until the next ordering time is called **just-in-time**.
39. Purchase invoice is an important document, to be retained by community pharmacy for at least **three years**.
40. CPMM stands for **community pharmacy medicine management**.
41. Finance is rightfully referred to as a **company's life blood**.
42. POCD means **point-of-care-diagnostics**.
43. **Inventory turnover ratio (ITR)** is the index of efficiency of material management.
44. In VED analysis method, E stands for **essential** items.
45. A **vendor is a person who supplies goods or services to another business.**

Board Examination Papers

Summer Examination 2023 (Question Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Define prescription. Explain the various steps for proper handling of prescription for dispensing of medicines.
b. Explain the stages of patient counselling.
c. Define OTC medication. Discuss the need and role of pharmacist in OTC medication dispensing.
d. What advice should a pharmacist give for fever and sore throat?
e. Discuss the factors for site selection for setting up a retail pharmacy.
f. Define inventory control and list the methods of inventory control. Explain ABC analysis.
g. Brief on the process of placing a purchase order.

Q.2. Answer any TEN of the following: **30 Marks**

a. Define SOP. Enlist the benefits of SOP.
b. Describe the history of community pharmacy in India after the recommendations of the drugs enquiry committee.
c. Enlist the common dispensing errors. What are the strategies to minimize the dispensing errors?
d. Define communication. Describe the skills required for patient interview techniques.
e. Classify communication. Describe written communication skill.
f. Enlist the patient counselling tips for tuberculosis.
g. Define medication non-adherence. Give two examples of medication non-adherence and how it can be corrected.
h. Give the formula for BMI calculation. Draw the BMI vs weight chart. Enlist the risk diseases associated with obesity.
i. Discuss the role of pharmacists in promoting safe practices during self-medication.
j. Explain legal requirements to set up a retail pharmacy.
k. Enlist the types of cash books. Draw their formats.

Q.3. Answer ALL Questions of the following: 20 Marks

a. The first education regulations were introduced in India in the year _____ and the most recent education regulations in _____.
b. Write the full form of GPP.
c. The professional responsibilities of a community pharmacist does not include:
   (i) Prescription processing (ii) Health promotion
   (iii) Patient counselling (iv) Prescribing medicine
d. Write the auxiliary labelling conditions for eye drops.
e. DASH diet is recommended for _____.
f. Name the types of barriers in patient counselling in community pharmacy.
g. Define patient information leaflets.
h. What is medication adherence?
i. An individual is said to be diabetic when the post prandial blood glucose level is _____ mg/dl.
j. Early detection of following condition using health screening technique saves patient's life:
   (i) Fever (ii) Acne (iii) Cancer (iv) Arthritis
k. Define self-medication.
l. Probiotic like _____ bacteria which helps to re-establish gut flora is useful in diarrhea.
m. Name any two OTC products used for common cold.
n. Define audit.
o. Following are the disadvantages of online pharmacy, *except*:
   (i) Easy access to medicines
   (ii) Difficulty in returning unused medicines.
   (iii) No physical assessment.
   (iv) Patient counselling not possible.
p. State the meaning of 'store in a cold place'.
q. Management of community pharmacy requires:
   (i) Organizing (ii) Procuring (iii) Legalizing (iv) Ordering
r. A balance sheet shows _____ and liabilities.
s. Give the full form of FIFO and LIFO.
t. The short-term finance requirements of a business can be fulfilled by:
   (i) Shares (ii) Debentures
   (iii) Overdraft (iv) All of the above

Summer Examination 2023 (Specimen Answer Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Define prescription. Explain the various steps for proper handling of prescription for dispensing of medicines.

Ans: **Presciption:** A prescription is a written order issued by a registered medical practitioner or dentist or veterinary doctor or any other licensed medical practitioner to a pharmacist to compound or dispense a preformulated medication to the patient.

Prescription handling: The dispensing of medicines requires proper prescription handling. The various steps include:

- Receiving the prescription
- Checking the prescription
- Assembling the medicines
- Packing the medicines and labelling
- Billing and filling the patient medications report
- Instructions to the patient
- Endorsement

Receiving the prescription: The pharmacist should receive the prescription from the patient or the relative in a professional manner with a smile, eye to eye contact and friendly courtesy.

Checking the prescription: The pharmacist should always check the prescription for its proper format (legality) and completeness. In case of any difficulty, the pharmacist should consult another pharmacist or the prescriber. The pharmacist should never guess the medicines on a prescription as it may lead to serious issues.

Assembling the medicines: While taking out the medicines from the shelves, the pharmacist should pay attention to the dosage form, strength and the expiry date. All the medicines should be kept in a tray.

Packing the medicines and labelling: The medicines should be packed properly to keep the potency of the medicines intact.

Medicines requiring storage in cold temperatures should be packed with ice packs. Proper labelling of the products is required in case dispensing is done from bulk containers.

Billing and filling the patient medications report: The medicines should be checked for dosage form, strength, quantity and expiry date while billing. The pharmacist should make an entry into the patient medication report for each patient while billing. The bill should be signed by a registered pharmacist.

Instructions to the patient: Patient counselling is an important step while dispensing of medicines. The pharmacist should provide instructions regarding dosing time and simple advice regarding the medications.

Endorsement: The prescription should be stamped with date and sign of the pharmacist.

b. Explain the stages of patient counselling.

Ans: Patient counselling by a pharmacist needs to be done in a systematic and organised manner in order to achieve the therapy goals. The various stages of patient counselling are:

- Preparing for the counselling session
- Introduction
- Counselling content
- Counselling process
- Closing the counselling process

Preparing for the counselling session: Before the counselling session commences, the pharmacist should gather knowledge about the patient and the treatment details. The sources of information in a community pharmacy are the patients and their prescriptions or record of previous dispensing.

Introduction or opening of the counselling session: A pharmacist should introduce oneself with a smile and start the conversation after identifying the patient and in case the patient is elderly, child or illiterate, the accompanying person should be identified. It is a necessity to identify if the patient has the time for patient counselling, so can start with a sentence as 'Can I talk to you for a few minutes?'

The following information should be gathered from the patients:

- Disease and its duration
- Treatment

- Past medications
- Allergies to drugs
- Habits as alcoholism, smoking, tobacco
- Use of alternative medicines

Counselling content: The following points should be included in the discussion:

1. Name and strength of the medicine prescribed.
2. How to take the medicines?
3. How long will the medication take to show effect?
4. Duration for which the medicines have to be taken.
5. Benefits of the therapy.
6. Possible adverse effects and explain that there is no drug in the world without side-effects.
7. What is to be done in case of missed dose or an adverse drug reaction?
8. Possibility of drug-drug interactions or drug- food interactions
9. Precautions to be followed during the treatment
10. Proper storage conditions of the medicines
11. Any diagnostic test to be performed before starting the medicines
12. Handouts for chronic conditions like diabetes, heart disease, and hypertension

c. Define OTC medication. Discuss the need and role of pharmacist in OTC medication dispensing.

Ans: OTC medication: Over-the-counter (OTC) medicines are the drugs which are available to the patients without a prescription. These medicines are called non-prescription medicines.

Need of pharmacist in OTC medication dispensing

- The need for pharmacists in OTC medication dispensing is because none of the medicines are harmless.
- Patients should be advised the correct choice of OTC medicines.
- Need to check medications interactions with the earlier prescribed medications.
- To ensure rational and safe use of OTC medications.
- To avoid patients being misled by advertisements of OTC products.
- Include counselling tips like avoiding alcohol and prohibited drugs with OTC drugs

- Care during administration of OTC medicines in children and pregnant women
- Patients may have to be referred for doctor consultation if needed.
- Use of OTC medications saves time and money for minor health issues. It also reduces the burden on the GPs. It is useful in countries like India to approach the pharmacist for minor ailments, where the doctor to patient ratio is 1:1800.
- Some OTC medications are unproven, unscientific or irrational combinations

Role of pharmacists in OTC medication dispensing

- **Effective treatment:** Pharmacists can help in effective treatment and reduce its cost
- **Public health:** Pharmacists can help improve public health by screening patients' health, providing information on drug safety, and deciding on rational use of OTC products.
- **Rational use of medicines:** Pharmacists need to check regarding interactions of OTC medications with herbal and dietary supplements or prescription drugs.
- **Education and counselling:** Pharmacists need to counsel patients regarding appropriate use of OTC products like dose, dosage form, route of administration, duration of action, special directions, precautions, side-effects, interactions and contraindications.
- **Keeping check:** Pharmacists need to check OTC medicines interactions with other drugs, prescription drugs or with food.
- **Preventing drug abuse and misuse:** Pharmacists need to keep check on drug abuse and misuse by the patients.
- **Referral to doctor:** The community pharmacists need to identify whether OTC products are appropriate for the patient or the case needs to be referred to a doctor.

d. What advice should a pharmacist give for fever and sore throat?

Ans: **1. Fever:** Fever is a temporary rise in body temperature.

Normal human body temperature is 98.6°F. A fever may be a symptom of various illnesses, infections, some childhood vaccines, inflammation, food poisoning and works like a warning.

The patient should be counseled to keep record of the body temperature and consult a doctor if the temperature shoots above 102°F. A doctor should be consulted if fever persists

for more than 2 days in small children, with convulsions, vomiting, difficulty in breathing, patients with cancer

Non-pharmacological advice:

1. Maintain proper hygiene
2. Use cold water sponging (cool compress)
3. Stay hydrated by drinking plenty of fluids like water, juices, soups, etc
4. Eat light, easy to digest food.
5. Like a light towel
6. Avoid alcohol and caffeinated beverages.
7. Monitor body temperature using oral thermometers.

Pharmacological advice:

1. Antipyretics as paracetamol, ibuprofen and aspirin
2. Children should not be administered aspirin
3. The antipyretics should be taken when required.

2. **Sore throat:** A sore throat is a condition where the throat feels pain, dry, irritated and scratchy. Sore throat may be associated with runny nose, sneezing, nasal congestion, hoarse voice, body ache, headache, loss of appetite, earache, allergies, excessive voice use, inflammation due to GERD, sinusitis, or tonsillitis.

   The patient should be advised to consult a doctor if the sore throat with fever more than 102°F persists for more than two days, sore throat lasts for more than a week, difficulty in swallowing & talking, joint pain, earache or swelling in the neck, frequently occurring sore throat, hoarseness longer than 2 weeks.

   Non-pharmacological advice:

   1. Maintain personal hygiene
   2. Gargle with warm salt water or antiseptics.
   3. Use humidifier
   4. Take rest to provide time for the body to fight against the infection. Give rest to the voice as well.
   5. Drink plenty of warm liquids like tea with honey, soup, broth, herbal tea.
   6. Use of liquorice, kadha.

   Pharmacological advice:

   1. OTC medicines like paracetamol, ibuprofen or aspirin can be recommended

2. Caretakers should be advised not to administer aspirin to children
3. Suck OTC throat lozenges containing cetylpyridinium chloride and dequalinium pastilles or hard candy or use cough syrup.
4. Use throat spray containing antiseptic like menthol or eucalyptus.
5. Use anti-inflammatory OTC products like benzydamine to reduce pain and inflammation in mouth and throat
6. Diabetic patients should be recommended sugar free pastilles.

e. Discuss the factors for site selection for setting up a retail pharmacy.

Ans: Factors for site selection: The following factors should be considered while selecting a site for a new community pharmacy.

Various factors are:

1. Physicians
2. Clinic/Hospital
3. Other drug store
4. Flow of traffic
5. Parking
6. Business Locality
7. Residential areas
8. Developing areas
9. Near hotel, school, playground, cinema hall, etc.
10. Visibility & accessibility

1. **Physicians:** If a location is having a good practice of more than three physicians, then 70% of business will come through prescriptions. But if physicians are dispensing their own medicines, they will prove to be competitors for the drug store.
2. **Hospital:** If a hospital or clinic has a good practice of doctors without its own pharmacy, then it is considered to be a very good location.
3. **Other drug stores:** The area where no other pharmacies exist should be selected, but if the potential is very high and already a number of pharmacies are existing then this area may be selected. This area may become a major business centre for drugs. People in large numbers may visit the area

thinking that all types of medicines are available and in turn the sales increase

4. **Flow of traffic:** A pharmacy should be in an area, where there is no traffic congestion. A pharmacy should not be opened near traffic signals or road circles as it may lead to traffic jams. It should be opened on that side of road which people take to reach their homes because people prefer to buy goods while returning home from their jobs
5. **Parking:** Enough parking spaces are always advisable when selecting a location.
6. **Business locality:** Number of people coming to business locality is high. In this case, if shop is made attractive people may visit to purchase drug simultaneously. The disadvantage is that the shop is not easily available and the price of shop is very high. Huge investment is required to maintain the standard of pharmacy.
7. **Residential areas:** Thickly populated areas should be selected for a pharmacy. People prefer to buy medicines from nearby areas.
8. **Developing area:** Nowadays, in cities, new areas are developing fastly. It is a good location to serve the needs of customers initially providing all types of services. Competition is not a problem in this area.
9. **Near hotels, schools, playground, cinema halls:** These locations are not preferable for starting a drug store because generally people live at a distance from schools, playgrounds, hotels, etc. If a site is near a restaurant, it may create a problem of maintaining cleanliness in the neighborhood of the drug store. In case cold drinks or ice-cream facilities are also extended then it is preferable to open a pharmacy near cinema halls.
10. **Visibility and accessibility:** The pharmacy should be easily visible and accessible to the customers. It should be on a ground floor and near the footpath.

f. Define inventory control and list the methods of inventory control. Explain ABC analysis.

Ans: Inventory control: Inventory control is a systematic control of constant checking and evaluation of stored inventories.

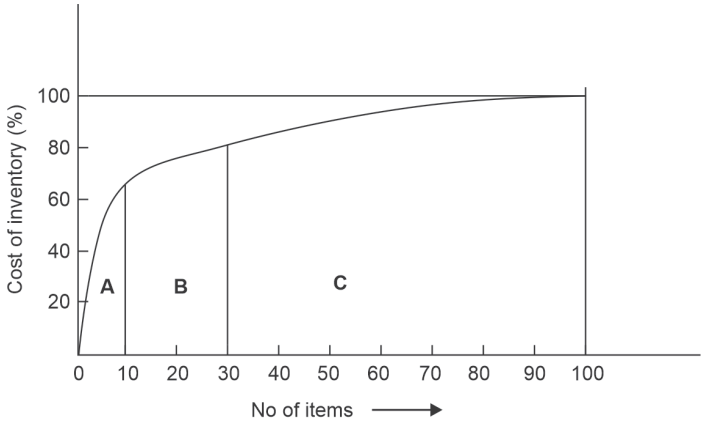
Techniques of inventory control:

1. ABC analysis

2. Economic order quantity (EOQ)
3. Perpetual inventory system
4. VEN/VED analysis
5. Setting of various levels
6. FIFO and LIFO
7. Establishing an effective purchase procedure

ABC analysis (Always Better Control): In this, the materials are divided into three groups—A, B and C, according to the cost of material and money value of consumption.

Sl. no.	A-items	B-items	C-items
1.	It covers10% of total inventories	It covers 20% of total inventories	It covers 70% of total inventories
2.	It consumes about 70% of total budget.	It consumes about 20% of total budget.	It consumes about 10% of total budget.
3.	It requires very strict control.	It requires moderate control.	It requires slight or loose control.
4.	It needs minimum follow-up.	It needs periodic follow-up.	It needs close follow-up.
5.	It requires more effort to reduce lead time.	It requires moderate effort to reduce lead time.	It requires minimum effort to reduce lead time.
6.	It requires slow safety stock.	It requires moderate safety stock.	It requires high safety stock.



g. Brief on the process of placing a purchase order.

Ans: Purchase order can be placed by:

Purchase requisition: Whenever the existing stock of a drug reaches the minimum limit or reorder level, the person in charge of the store identifies the requirement. This indicates the type of dosage form, strength, quantity of the item to be purchased.

Receiving the quotation: A list of items to be purchased is sent to various suppliers and quotations are invited from the vendors. A comparative statement of the quotations from suppliers is prepared. Generally the supplier with the lowest rate is selected.

Selection of suppliers: Following points are taken into consideration for selection of supplier.

- Reputation of supplier in market
- Financial condition of supplier
- Ability to supply at short notice
- Terms and conditions of payment

Placing the order: A list of items to be purchased is sent to the particular suppliers. The order is placed on the standard purchase order form commonly known as "supply order". The supply order is a legal document. Generally two copies of purchase order are prepared, original is sent to the supplier and other copy is retained in the pharmacy. The purchase order should include the terms and conditions for price, time of delivery and payment. The supplier should acknowledge the receipt of the purchase order.

Receiving and checking the supply: The following checklist should be used as a reference for checking the receipt of supplies:

- Check the supplies before the delivery person leaves.
- Check the supply received are same as ordered (match with purchase order form).
- Check the items against the invoice received (Integrity of the product, batch no., expiry date, quantity and price).
- Place the supplies in quarantine area till placed in respective place
- Keep aside the damaged, wrong products & return to the supplier
- In case of missing items, inform the supplier to supply the missing items
- Document these along with receiving invoice

Q.2. Answer any TEN of the following: 30 Marks

a. Define SOP. Enlist the benefits of SOP.

Ans: SOP: A standard operating procedure is a written instruction describing how a routine task is to be carried out; when, where and by whom.

Benefits of SOP:

1. Ensures that good practices are achieved at all times. When all the staff perform their task consistently, it would ensure consistency in service.
2. SOPs can assist with quality assurance and ensure that patients receive a service meeting certain predefined standards.
3. SOPs based on up-to-date practices help to ensure consistency to maintain the high level of service offered and thus attains GPP at all times.
4. SOPs help to get free time for pharmacists and provide an opportunity to fully utilize the expertise of all members of the Pharmacy through the delegation of certain tasks.
5. They set out clear lines of accountability, ensuring that staff members are aware of their own responsibilities.
6. Provides guidance for part time and temporary staff.
7. Helps in continual improvement of services.

b. Describe the history of community pharmacy in India after the recommendations of the drugs enquiry committee.

Ans: History of community pharmacy in India: The pharmacy practice scenario and especially community pharmacy practice during the pre-independence era was highly unregulated and there were no restrictions on the practice of pharmacy in India. The standardization of pharmacy education was introduced in 1945.

In 1949 Pharmacy Council of India was established under the Pharmacy Act, 1948.

In 1953 education regulation came into force in some States but other states lagged behind. In 1954 Drugs and Magic Remedy Act was passed to stop misleading advertisement. In 1955 Medicinal and Toilet Preparations Act was introduced to enforce uniform duty for all states for alcohol products.

In India, provisions of the Pharmacy Act 1948 enforced community pharmacists working in India to have a pharmacist registration certificate issued by the State Pharmacy Council of the respective State. To obtain a registration certificate, the prospective pharmacist

must acquire the minimum diploma (DPharm) from a pharmacy institute recognized by the Pharmacy Council of India (PCI). Both DPharm and BPharm holders are allowed to practice in any community pharmacy.

In 1985 Narcotic and Psychotropic Substances Act was enacted to protect society from the danger of attitude drugs.

The primary objective of education and training of community pharmacists is the safe and effective use of medicines to improve patient outcomes. The training was provided during educational programs but to maintain registration continued professional development was essential to ensure that the practice is kept up-to-date.

c. Enlist the common dispensing errors. What are the strategies to minimise the dispensing errors?

Ans: Common dispensing errors:

1. Dispensing medication for a wrong patient
2. Dispensing wrong medicine
3. Dispensing wrong drug strength (dose)
4. Dispensing the wrong quantity
5. Dispensing wrong dosage form
6. Dispensing with wrong information on label
7. Dispensing at wrong time
8. Failure to dispense
9. Dispensing medicines of inferior quality
10. Dispensing expired or almost expired drugs.

OR

1. Poor handwriting of the prescriber
2. Retrieval of wrong drug from the stock
3. Dose interpretation: Dose error/ Wrong dose
4. Incorrect interpretation of abbreviation.
5. Expiry error

Strategies for minimizing dispensing errors:

1. **Confirm contents of prescription:** Any doubts & uncertainties should be clarified with the prescriber
2. **Beware of LASA (Look alike sound alike):** The name should be read carefully
3. **Organize workplace:** Proper lighting, adequate counter space, proper temp., and humidity of the workplace

4. **Reduce distraction:** Avoid multitasking
5. **Reducing stress and balance workload:** Give regular breaks and freedom from secondary responsibility to the employee
6. Thoroughly check all prescriptions
7. Thorough patient counselling
8. Educating the patients about safe and effective use of their medicines

d. Define communication. Describe the skills required for patient interview techniques.

Ans: Communication: Communication is the sharing of information, ideas, thoughts and feelings. It involves not just the spoken word but also what is conveyed through inflection, vocal quality, facial expression, body posture and other behavioral responses".

OR

Communication is a process in which messages are generated and transmitted by one person and subsequently received and translated by another.

The skills required for patient interview techniques

1. **Establish rapport:** In medication related issues, a patient interacts with pharmacists first as they are easily accessible. Patients share important information with them based on trust that has developed over time.
2. **Respect patient's privacy:** When pharmacists ask more difficult questions, patient privacy should be considered.
3. **Recognize face value:** Pharmacists should pay attention to patients' facial expressions. It may give clues regarding things they are not saying and may alert Pharmacists about the problem and its severity.
4. **Consider your appearance:** Pharmacist's physical appearance is equally important as with their actual speech. The way a Pharmacist presents himself determines the amount of information he would obtain from a patient. Irrelevant body language and postures may convey disinterest in what he has to say.
5. **Probing:** Probing is the use of questions to elicit needed information from patients or to help clarify their problems or concerns. "Why" type questions can make people feel that they have to justify their reason for doing a certain thing. It is better to use "what" or "how" type of questions.

6. **One thing at a time:** Pharmacists regularly conduct interviews of patients and their routine. While interviewing patients, pharmacists may think ahead on other questions while asking one question. But patients come across such interactions rarely, so pharmacists should make sure to ask their questions one at a time.
7. **Avoid jargon:** In the process of patient's interview, pharmacist and patient are best served by using common terminologies. Use only words that patients are familiar with to avoid confusion in the patient's mind.
8. **Listen actively:** Pharmacists should listen to their patient's responses to questions asked. Usually being an expert, they may keep on thinking ahead to the next question instead of paying attention to what the patient is replying through his answer.

e. Classify communication. Describe written communication skill.

Ans: Classification of Communication:

A. Based on communication channel

1. Verbal communication
   a. Oral communication
      - Face to face
      - Distant
   b. Written
2. Non-verbal communication

B. Based upon style and purpose

1. Formal
2. Informal

Written communication skills:

- The common forms of written communication commonly employed in Pharmacy practice include prescriptions, patient's medication and test reports, letters, notices, emails, messages, advertisements and business- related documents.
- Written communication is specifically needed when the information is lengthy and consists of images, pictures, charts, graphs, statistical data and so forth. This is because conveying such information in any other form is difficult and may not be imparted orally to the individuals.

- When the individuals are communicating with each other in a written form, they need to take into account factors such as addressing appropriately, making use of decent words, stating the information in a clear and understandable manner, stating all the necessary concepts and concluding well by saying thank you and putting the name and signatures.
- Writing is often the catalyst for actions in health care. Pharmacists are frequently identified for their activities initiated by written documents such as updating patient records, communicating with insurers, and answering drug information questions, writing patient care plans, progress notes, treatment guidelines, patient education handouts, etc. Writing skill for a pharmacist provides much stronger legal standing than any other communication.
- Quality written records can ensure long-term success for pharmacists, especially when it comes to compliance and liability issues. In addition, pharmacists' writing is increasingly important because new technologies are continuously evolving in the healthcare sector. These days, since healthcare communication exists largely in electronic medical records and through digital platforms, it is essential that pharmacists write clearly and effectively.
- Many of the documents by pharmacists listed earlier in this section are direct part of patient care. Consequently, good writing contributes directly to positive patient outcomes, the ultimate goal of any healthcare professional. In order to execute written communication in an effective manner, it is vital for the pharmacists to up-grade their skills in terms of various forms of technologies.

Advantages of Written Communication Skills

1. It is more accurate because it is prepared more carefully.
2. Written words serve as permanent records which can be used as legal documents.
3. Written messages can be referred to several times in order to gain a clearer concept of the message.
4. Written messages can be sent to a large number of persons in a cost effective manner.
5. It helps in avoiding disputes as it is easier to fix responsibilities and can be referred to as evidence.

6. It assures uniformity as the same message is circulated among the people.

Disadvantages of written communication skill:

1. It requires more time to produce
2. It can be expensive as it needs stationery and an employee for writing and delivering letters.
3. It is time consuming.
4. It does not permit immediate exchange of thoughts, views etc.
5. It is not useful in case of an emergency.
6. It is not effective for illiterate people.
7. Messages of confidential nature cannot be conveyed as the chances of leakage of the contents of the message are high.

f. Enlist the patient counselling tips for tuberculosis.

Ans: Patient counselling tips for tuberculosis:

1. **Medication adherence:** The patient should follow the instructions as given by the doctor. The medications should not be discontinued without the doctor's advice. TB is curable if the medications are properly used as advised. Patients should be educated about common side effects and when to refer to physicians.
2. **Infection control:** In case of pulmonary TB, patients should follow cough etiquettes, should spit in a cup containing disinfectant, should try to isolate themselves from other family members especially children for at least the initial phase of the infection. Educate patient about frequency and importance of sputum examinations, (if sputum positive cases)
3. **Lifestyle modifications:** Lifestyle modifications, especially related to physical activity and avoiding the use of alcohol and nicotine have several benefits.
4. **Physical activity:** Physical activity must be enjoyable and sustainable. However, in TB cases, there is restricted lung capacity. Expert advice is necessary before initiating any regular exercise programme.
5. **Use of contraceptives:** If there is a female patient who is taking oral contraceptive pills (OCPs), then she should be advised to use alternative methods of contraception.
6. **Diets:** A healthy balanced diet is essential. A patient generally has poor appetite initially and it is better to start

with "eat small and frequent nutritionally balanced meals'. The Government provides Rs. 500/- per month to notified TB patients as nutritional support.

7. **Tobacco cessation:** All are encouraged to quit all forms of tobacco use.
8. **Alcohol intake:** Reducing alcohol intake can have several health benefits. In addition, it increases drug toxicity in TB.

g. Define Medication Non-adherence. Give two examples of medication non-adherence and how it can be corrected.

Ans: Medication non-adherence: Patients tend to miss the dose due to various reasons is termed as medication non-adherence.

1. **Level of prescribing:** Medication non-adherence may occur because patients perceive it to be unnecessary or because of their fears and beliefs related to adverse effects of drugs. Hence, providing clear medication related information to patients is essential to improve adherence.

   Complexity of drug regimen is found to negatively affect medication adherence.

   Corrective measure: Modification will have to be made to medication regimens to reduce the frequency of administration, and/or reduce the number of different medications, and if applicable, to replace with combination products. This method often calls for patient's cooperation, thus highlighting patient participation in disease management.
2. **Medication adherence** is adversely affected by patient-related factors that are closely linked to the other factors previously discussed. Most of the time patient behavioral factors may not be perceived well by the doctors resulting in decreased adherence. Most variations in taking medication occur include omission of doses or delays in the timing of doses.

   Patients with low literacy usually have difficulties in understanding instructions; which ultimately results in decreased adherence and poor medication management. The list of these factors includes:

   a. Physical factors
   b. Visual impairment
   c. Hearing impairment
   d. Impaired mobility/dexterity
   e. Swallowing problems

f. Psychological/behavioural factors
g. Motivation
h. Fear of possible adverse effects
i. Fear of dependence
j. Feeling stigmatized by disease
k. Frustration with healthcare providers
l. Psychosocial stress/anxiety/anger
m. Alcohol/substance abuse.
n. Chronic diseases.

Corrective measures: Communicating with the patient

a. Explain key information when dispensing medicine for the patient. Address the key information, such as what, why, when, how, and how long, about the medications.
b. In advance, inform and caution the patients about the common side effects, else they would be more worried that may lead to non-adherence.
c. Use medication adherence improving aids that specify the time to take medications such as medication calendars or schedules, drug cards, medication charts, medicine related information sheets, specific packaging such as pill boxes, unit-of-use packaging, and special containers indicating the time of dose.
d. Collaborate with patients, especially elders, to incorporate the medication regimen into their daily complex regimen having unintentional difficulties in adherence.

3. **Packing:** The container used to pack pharmaceutical formulations should not only help to protect it from environmental conditions, but also it should be handy, easy to store and carry.

   For example, Geriatric patients or arthritic patients, especially those staying alone may encounter problems during removal of dose from blister packs/strips.

   Corrective measure: In such cases, a pharmacist should supply loosely packaged dosage forms in appropriate easy to open containers.

4. **Complex therapeutic regimen:** More number of medicines per day not only increases chances of forgetting the dose but increases risk due to drug interactions.

   Corrective measure: Dosing schedule is planned at different times.

h. Give the formula for BMI calculation. Draw the BMI vs weight chart. Enlist the risk diseases associated with obesity.

Ans: Formula for BMI Calculation

$$\text{Body Mass Index} = \frac{\text{Weight in kilogram expressed as kg/m}^2}{(\text{Height in meters})^2}$$

- Based on BMl, WHO defines overweight, and obesity in adults as follows:

BMI vs weight as per WHO	
BMI	**Weight status**
<18.5	Underweight
18.5–24.9	Healthy weight
25–29.9	Overweight
≥30	Obese

Disease caused due to obesity:

- Diabetes
- Cardiovascular diseases and their complications
- Arthritis
- Some cancers.
- Hypertension
- Dyslipidaemia
- Stroke
- Breathing problem
- Sleep apnoea
- Chronic inflammation

i. Discuss the role of pharmacists in promoting safe practices during self-medication.

Ans: Role of pharmacists in promoting the safe practices during self-medication

1. A pharmacist should suggest appropriate OTC for minor illness and give instruction for correct use, storage and disposal of unused medicines.
2. Pharmacists must ensure that the OTC medicines are from approved manufacturers and are of good quality.
3. Should check potential drug related problems and counsel the high risk patients for the appropriate use of medications.

4. Pharmacist should not dispense prescription medications as OTC
5. Pharmacists should screen potential purchasers.
6. Monitor the patient for long term complications.
7. Pharmacists should maintain patient related records including the OTC medications dispensed.

j. Explain legal requirements to set up a retail pharmacy.

Ans: Legal requirement to set up a community pharmacy

1. Minimum qualification
2. Space
3. Storage arrangement
4. Issue of licenses
5. Conditions of license for operating a community pharmacy

1. Minimum qualification:

- A person to establish a retail drug store should be a registered pharmacist with the State Pharmacy Council.
- The minimum qualification required for registration as a pharmacist is DPharm (from a recognized institute) and successful completion of Practical training of 500 hours spread over 3 months.

2. Space requirements:

- As per the Drugs and Cosmetics Rule 1945, the space required for the new retail drug store is 10 square meter
- Wholesale and retail both 15 square meters together.

3. Store arrangement:

- The number of racks and shelves should be sufficient in order to store drugs and pharmaceutical preparations.
- There should be a proper space for a refrigerator to store enzymatic preparations, vaccines, vitamins and antibiotics at a temperature 2–8°C.

4. Issue of licenses: The license shall be issued in various forms for retail sale.

- For drugs other than those specified in schedule C,C1 and X: Form 20
- For drugs specified in Sch. C C1: Form 21
- For drugs specified in Schedule X: Form 20 F
- Shop should be registered under Shop and Establishment Act.

- Insecticide or pesticide license can be obtained from agricultural college or FDA.
- To sell honey, bourn-vita, baby food, etc. food licenses should be obtained from corporations. If the shop is not under corporation area, license should be obtained from FDA.
- To sell homeopathic drugs, a separate form should be filled and license can be obtained from the FDA. No license is required for selling Ayurvedic drugs
- For GST no. application is to be submitted. For income tax no. application given to income tax office nearby. All the licenses should be displayed in frame in the proposed premises.

5. Condition of the license for operating a community pharmacy:

- The license is to be displayed in a prominent place in the premises
- The licensee is required to comply with the provision of the Drugs and Cosmetics Rules.
- The licensee should inform the licensing authority within one month of any change in the registered pharmacist.
- Dispensing of medications should be in the presence of the registered pharmacist must be ensured
- Purchase of the drugs should be from licensed manufacturers or wholesalers.

k. Enlist the types of cash books. Draw their formats.

Ans: Types of cash books:

1. Single column cash book
2. Double column cash book
3. Triple column cash book
4. Petty cash book

Formats for Cash books:

1. Single column cash book

Dr.				Cr.			
Date	**Particular**	**LF**	**Amount**	**Date**	**Particulars**	**LF**	**Amount**

2. Double column cash book

Dr.					Cr.				
Date	**Particular**	**LF**	**Discount Rs.**	**Cash Rs.**	**Date**	**Particulars**	**LF**	**Discount Rs.**	**Cash Rs.**

3. Triple column cash book

Dr. Receipts						Payments Cr.					
Date	**Particular**	**LF**	**Discount Rs.**	**Cash Rs.**	**Bank Rs.**	**Date**	**Particulars**	**LF**	**Discount Rs.**	**Cash Rs.**	**Bank Rs.**

4. Petty cash book

Dr.													Cr.
Date	**Particular**	**Total Amt.**	**Date**	**Particular**	**Voucher No.**	**Total Amt. Rs.**	**Convey-ance Rs.**	**Stationary Rs.**	**Postage & telegram Rs.**	**Cartage Rs.**	**Misce-llaneous Rs.**	**Remark**

Q.3. Answer ALL Questions of the following: 20 Marks

a. The first education regulation were introduced in India in the year _____ and the most recent education regulations in _____.

Ans: 1953; 2020.

b. Write the full form of GPP

Ans: Good Pharmacy Practice

c. The professional responsibilities of a community pharmacist does not include:

(i) Prescription processing
(ii) Health promotion
(iii) Patient counselling
(iv) Prescribing medicine

Ans: (iv) Prescribing medicines

d. Write the auxiliary labelling conditions for eye drops.

Ans: (i) For external use only
(ii) Do not touch the tip to the eye
(iii) Wash the hands before putting the drops
(iv) Keep the eyes closed for 1 min after putting the drops
(v) Use within one month after opening the bottle.
(vi) If irritation persists, discontinue the use and consult a physician.

e. DASH diet is recommended for _____.

Ans: Hypertension

f. Name the types of barriers in patient counselling in community pharmacy.

Ans:
1. Patient-based barriers
2. System-based barriers
3. Provider-based barriers
4. Time-barrier

g. Define patient information leaflets.

Ans: A patient information leaflet (PIL) is a printed leaflet to be read by the patient and which contains information in easy to understand language, about a specific illness/disease condition or a medicine.

h. What is medication adherence?

Ans: Medication adherence is defined as the extent to which a patient takes the medicines in accordance with the advice of healthcare personnel.

i. An individual is said to be diabetic when the post prandial blood glucose level is _____.

Ans: 200 mg/dl

j. Early detection of following condition using health screening technique saves patient's life:

(i) Fever (ii) Acne
(iii) Cancer (iv) Arthritis

Ans: (iii) Cancer

k. Define self-medication.

Ans: Minor ailments are defined as common or self-limiting uncomplicated conditions that can be diagnosed and managed without medical involvement.

l. Probiotic like _____ which helps to re-establish gut flora is useful in diarrhoea.

Ans: Lactobacillus bacteria

m. Name any two OTC products used for common cold.

Ans: Paracetamol, medicated lozenge, Antihistaminic if patient suffers from allergic rhinitis, nasal decongestants containing oxymetazoline, xylometazoline, saline nasal spray.

n. Define audit.

Ans: Audit means examination/checking of the records or activities in the business.

o. Following are the disadvantages of online pharmacy *except*:

(i) Easy access to medicines
(ii) Difficulty in returning unused medicines.
(iii) No physical assessment.
(iv) Patient counselling not possible.

Ans: (i) Easy access to medicines

p. State the meaning of 'store in a cold place'.

Ans: It means products should be stored at temperature between 2 and 8ºC.

q. Management of community pharmacy requires:

(i) Organising (ii) Procuring
(iii) Legalising (iv) Ordering

Ans: (i) Organising

r. A balance sheet shows _____ and liabilities.

Ans: Assets.

s. Give the full form of FIFO and LIFO.

Ans: FIFO–First in first out, LIFO–Last in first out

t. The short term finance requirements of a business can be fulfilled by:

(i) Shares (ii) Debentures
(iii) Overdraft (iv) All of the above

Ans: (iii) Overdraft

Winter Examination 2023 (Question Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Define prescription. Draw a model format for prescription. Explain various parts of a prescription.
b. Discuss/Write the counselling points for tuberculosis patients.
c. Define minor ailment. Describe the self-care advice by the pharmacist in pain management.
d. Give advantages and disadvantages of online pharmacies.
e. Define finance. Explain the types of finance and sources of finance.
f. Define self-medication. Write its advantages and disadvantages.
g. What is community pharmacy management? What documents are needed while submitting application for retail sale license.

Q.2. Answer any TEN of the following: **30 Marks**

a. Define patient counselling. What are the benefits of patient counselling?
b. Write social and economic factor influencing adherence to prescribed medication.
c. Give the importance of health screening services at community pharmacy.
d. Define OTC medicines. What are the probable risks of taking OTC medicines?
e. Describe the oral communication skill.
f. Describe the professional responsibilities of a community pharmacist.
g. Define Audits. Give any four benefits of audits in community pharmacy.
h. What is communication? Write short note on body language as effective communication.
i. Define auxiliary label. Give advantages of pictogram.
j. Give criteria for vendor selection for supplying medicine in community pharmacy.
k. Define community pharmacy, community pharmacist and independent pharmacy.

Q.3. Answer ALL Questions of the following: 20 Marks

a. GPP guidelines for community pharmacy are drafted by the IPA in the year _____

b. Patient counselling helps to motivate the patient to take medicine for improvement of his/her health status. True/False

c. Sphygmomanometer is used to measure _____

d. What is standard operating procedure?

e. Define patient package inserts.

f. The extent to which patients take medication as prescribed by prescriber is called _____

g. As per drugs and cosmetic rules, 1945, which one of the following rules indicate the presence of pharmacist is legally required during the dispensing and selling of medicines.
   (i) Rule 45(15)
   (ii) Rule 65(25)
   (iii) Rule 65(15)
   (iv) Rule 75(15)

h. The prescriber indicates the direction for the patient, for the use of the medication in the portion of the prescription is called as _____

i. Restricted salt intake is recommended in _____
   (i) High blood pressure
   (ii) Low blood pressure
   (iii) Diabetes
   (iv) Asthma

j. Body mass indexing (BMI) is the most common screening test for _____

k. ORS is used in the management of _____

l. Self-medication should not be done with prescription medicine. True/False

m. What is book of original entry?

n. The minimum floor space specified for operating a retail pharmacy is _____

o. Who is the licensing authority for issuing retail sale license?

p. In finance, what business owns is called as _____

q. Morphine is not used as OTC medicine due to chance of abuse. True/False

r. Ambient temperature should be maintained in the pharmacy within the required range to prevent _____ of medicines.

s. From the following features, what is applicable to petty cash?

(i) Small amount of cash

(ii) Used for minor expenses

(iii) Is easy and quick way for payment

(iv) All of the above

t. As per Drug Price Control Order 2013, community pharmacies have the liberty to sell medicines at a price to maximise the profit. True/False

Winter Examination 2023 (Specimen Answer Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Define prescription. Draw a model format for prescription. Explain various parts of a prescription.

Ans: Prescription: Prescription is a written order from a registered medical practitioner, to a pharmacist to compound and or dispense specific medications to the patient.

SANKLECHA CLINIC **DR. SHIVAM BATRA MBBS** **Add: Shakti Apartment, 2nd Floor, S.V. Road, Bandra West 400050** **Mobile No: 1231223**	**Time: 10:00 am–1:00 pm** **4:00 Pm -9:00pm**
Patient Name : ABCD Date: 22/12/2022 Sex: Male	Mobile No: 2558956111 AGE: 68 Yrs Address: ABC Street, Mahim
Rx CIPLO X Eye/Ear Drops 2 drops to be instilled 3 times a day	
Signature: Refill Instruction: 0	Regd No.: 2568963

A prescription is written on a prescription blank which has the details of the prescriber already printed on it. A typical prescription consists of following parts:

1. Date of the prescription
2. Patient's name, age, gender, weight and address
3. Superscription
4. Inscription
5. Subscription
6. Signatura
7. Renewal (refill) instruction
8. Signature of the prescriber

1. **Date:** It should be at the top of the prescription. It should be written by the prescriber. It helps the pharmacist to find out the date of prescribing and date of filling the prescription. It prevents the misuse of the prescription of narcotics or other habit-forming drugs.
2. **Name, age, sex, weight and address of the patient (Patient information):** Name, address and age of the patient is necessary so as to avoid error in delivery of the medications to any other patient. Age and weight of the patient helps in checking the dose of the prescribed drugs especially in case of paediatric and geriatric patients.
3. **Superscription:** Rx The symbol represents the Latin word recipe, means 'you take'. It was believed to be the sign of Jupiter, the god of healing.
4. **Inscription:** This is the main part or the body of the prescription. Medication is prescribed with their generic or brand name, Dosage form, its strength, quantity, frequency, route of administration.
5. **Subscription:** It includes directions to be pharmacist by the physician regarding dosage form & the number of doses to be compounded and or dispensed.
6. **Signatura: (Transcription):** It is the part of the prescription which consists of directions to the patient or to be mentioned on the label .This includes, the dose, route of administration, frequency and time of administration, vehicle to be used for administration.

b. Discuss/Write the counselling points for tuberculosis patients.

Ans: **Tuberculosis:** It is an infectious disease caused by Mycobacterium tuberculosis and spreads through droplet. The types include pulmonary and extrapulmonary TB.

Causes and transmission: Malnutrition, overcrowding, poor ventilation, poor immune system, use of immunosuppressant, consumption of infected cattle products (milk).

Signs and symptoms: Loss of appetite, fatigue, weight loss, persistent cough, fever, blood in the sputum, night sweats, tachycardia, dyspnoea, cyanosis.

Diagnosis: Mantoux test, ELISA, sputum examination, chest X-ray.

Counselling regarding treatment:

a. Medication care and adherence are most important advice for the patients

Intensive therapy 2 months (To reduce bacteria)

Maintenance phase 7 months (To eradicate completely)

Combination therapy: Isoniazid, ethambutol, pyrazinamide, Rifampicin.

Complications if untreated: Patients should be informed about the following

- Development of resistance (MDR/XDR) if TB is not completely treated.
- The patient may infect others.

b. Counselling regarding nonmedication measures: Resistance or relapse or both can occur if they are not followed also to prevent spreading.

a. Patients should cover their nose, and mouth while sneezing or coughing.
b. Patients should stay in a well ventilated room where proper sunlight and air circulation is there.
c. Make sure complete treatment is taken. The infectious TB patients should be advised to take the medicine every day at a particular time.
d. Regular medicine intake (like in DOTS) is undertaken if a patient's sputum test shows positive result even after two months of therapy. This is to ensure efficacy and minimise resistance.
e. Avoid alcohol and tobacco.
f. Good nutritious food rich in proteins is recommended. Avoid foods containing refined flour/ junk food.
g. Monitoring ADRs, drug interactions. Patients should be advised to consult the physician in case of serious side effects like changes in vision during ethambutol therapy.
h. Performing liver function test at regular intervals.
i. National TB Eradication Programmed (NTEP)-Low income group patients should be advised to contact the centers to get medicines free of cost.

c. Define minor ailment. Describe the self-care advice by the pharmacist in pain management.

Ans: **Minor ailment:** Minor ailments are defined as common or self-limiting uncomplicated conditions that can be diagnosed and managed without medical involvement.

It can be managed with minimal treatment or self-care strategies.

Self-care pharmacological advice in pain:

- Oral or local analgesics and or anti-inflammatory can be advised, e.g. paracetamol tab, syrup, suspension, aspirin, ibuprofen, diclofenac sprays, creams, gels or ointments
- Use of topical pain relief balms
- If headache is due to hyperacidity then, give antacids

Nonpharmacological advice in pain

- Give rest to affected area
- Provide support or orthopaedic support like bandage in case of joint pain. RICE [rest, ice, compression and elevation] are to be used mainly for leg joints.
- Hot packs and ice packs: Heat boosts the flow of blood and nutrients to an area of the body. It often works best for morning stiffness or to warm up muscles before activity. Cold slows blood flow, reducing swelling and pain. It is best for short-term pain, like that from a sprain or a strain.
- Adequate sleep helps in pain relief (e.g. headache)
- Stay hydrated.
- Stress management—Relaxation techniques, yoga, pranayama are advised
- Eat less oily and spicy food in hyperacidity
- Check eyesight for persistent headaches
- Soak in cool water in case of burn pain until the area is free of pain, determine if the patient needs medical attention
- Simple activities like walking, swimming, dancing, etc. may be advised in sciatica pain

d. Give advantages and disadvantages of online pharmacies.

Ans: **Online pharmacies:** An online pharmacy is an internet-based vendor that may operate as an independent internet only site, physical independent pharmacy or of a chain of pharmacies.

Advantages of online pharmacies

1. **For patients:** Easier access to medicines for the elderly, persons with disability, those staying in remote areas, busy at work and unable to visit pharmacy

2. **It saves time and energy:** overcomes the problems of traffic congestion, parking space, can know which products are available, price and choice of product from home
3. **Discounts:** Heavy discounting helps saving on expenses
4. Patient privacy is maintained

Disadvantages:

1. Immediate requirement of medical products may not be met
2. Difficulty in returning unused medicines
3. Doubts on quality and source of medicines
4. Missing the face to face contact and asking queries about medicine, patient counselling.
5. Lack of physical assessment of prescriptions.

e. Define finance. Explain the types of finance and sources of finance.

Ans: **Finance:** It is defined as a provision of money when business requires it.

Types of finance:

A. Short-term finance
B. Medium-term finance
C. Long-term finance

A. Short-term finance: Short-term financing involves a term of less than one year. It is usually a small amount of money which may be required for opening inventory order, purchasing raw materials, paying taxes or wages to staff.

B. Medium-term finance: Medium-term finance refers to a period of 3 to 5 years. This involves more money and may be used for fixed assets like equipment, vehicles or interiors of pharmacy.

C. Long-term finance: Long-term finance involves a time period of 5–10 years. This includes business loans from banks, mortgage and debentures and deals with large amounts of money. This may be used for fixed assets like land, building

Sources of finance:

Owned finance: The owner uses own capital in the business

Owed or loan finance: The owner takes loans from banks or financial institutions, e.g. of financial institutions are Industrial Credit and Investment of India (ICICI), National Industrial Development Corporation, State Finance Corporation.

f. Define self-medication. Write its advantages and disadvantages.

Ans: Self medication: Self-medication is the use of drugs to treat self-recognized disorders or symptoms.

Advantages of self-medication

- Number of doctors available are limited. So it is not practical to treat every minor ailment through a doctor.
- It can save patients' money and time.
- Quick relief to patients
- Wide variety of OTC medicines are readily available.
- The OTC products are relatively safe and efficacious.

Disadvantages of self-medication

- Self-diagnosis may not be correct.
- Wrong and prolonged self-medication can delay proper diagnosis and treatment.
- Possibility of adverse drug reaction and drug dependence.
- It should only be done for minor illness with OTC medicines and for limited time only.

g. What is community pharmacy management? What documents are needed while submitting application for retail sale license.

Ans: Community pharmacy management: Community pharmacy management represents all activities involved in the organising, procurement, dispensing and storage of medicines, documents as per law, finance management, staff management, to accomplish desired goals and smooth working of pharmacy.

Documents required for opening Retail Drug Store

1. Application in duplicate on Form 19 of the Drugs and Cosmetic Rules 1945
2. Challan of fee deposited for obtaining drug license
3. Details of the premises-The minimum space for retail pharmacy is 10 m^2.
4. Plan of the premise duly signed by proprietor/partner, A copy of partnership deed in case of partnership firm.
5. Pharmacist details: Name, attested copy of Diploma in Pharmacy from
6. Institution recognized by PCI, affidavit of registered pharmacist.
7. Applicant's details: Affidavit of non-conviction of proprietor/partner/director under the D and C Act 1940. Passport size photograph, address and identity proof.

8. Details of the storage facilities: Refrigerator purchase receipt, Air conditioner purchase receipt along with their installation certificate.

Q.2. Answer any TEN of the following: 30 Marks

a. Define patient counselling. What are the benefits of patient counselling?

Ans: Patient counselling: Patient counselling is a process wherein pharmacists have face-to-face interaction with the patient to provide oral or written information on directions of use and advice on side effects to help them use their medications appropriately.

Benefits of patient counselling are as follows:

1. Counselling is beneficial in understanding the patients and their illnesses, and to frame strategies to deal with the health issues.
2. Patients will have a better understanding of the prescribed therapy and the appropriate use of the medication.
3. Counselling helps to ensure that correct medicine is supplied to the correct patient.
4. It improves patient adherence to the treatment.
5. It is beneficial in verifying patients' understanding, knowledge, and ability to self-manage therapy.
6. It helps to reduce medication errors and misuse and enhance patient monitoring.
7. It helps to reduce healthcare costs of individuals, society and government by preventing adverse events.
8. Promotes the image of pharmacist as a professional.
9. It helps to build trusting relationships with patients.

b. Write social and economic factor influencing adherence to prescribed medication.

Ans: Social and economic factors: Weak social support is associated with poorer medication adherence. Some patients attempt to offset the cost of prescription drugs by reducing the dosage and/or frequency of a recommended therapy. Patient demographic characteristics, inability to read prescription labels and lack of understanding are alsoassociated with differential rates of medication adherence. Gender, personality and cultural factors may influence adherence.

These factors include:

- Limited English proficiency

- Low health literacy
- Lack of family or social support network
- Unstable living conditions/homelessness
- Burdensome schedule
- Limited access to healthcare facilities
- Lack of healthcare insurance
- Superstitious and cultural belief
- High cost of medicines.

c. Give the importance of health screening services at community pharmacy.

Ans: Importance of Health Screening:

(i) Early detection of diseases can help in early treatment and prevent life-threatening complications, e.g. health screenings save lives by early detection of conditions such as hypertension or elevated blood sugar and can help prevent serious complications.

(ii) Many cases of disease exist and remain undiagnosed which seriously affects quality of life. Many of these conditions can be corrected or improved through a simple course of treatment if discovered by health screening.

(iii) Health screening services are cost effective, can be carried out at any place, do not have any side effects and contribute to health awareness.

(iv) Additional benefits of a health screen is peace of mind and reassurance.

(v) Health screening helps to reduce mortality by early detection and early treatment of a condition.

(vi) To reduce the severity of a condition by identifying people with the condition and offering effective, simple treatment at low cost.

(vii) The high-risk individuals with family history of cardiovascular diseases, diabetes, and stroke can be screened to provide ways for prevention

d. Define OTC medicines. What are the probable risks of taking OTC medicines?

Ans: OTC medicines: Over-the-counter drugs are drugs that can be sold by pharmacists without a prescription from a registered medical practitioner.

Probable risks of taking OTC medicines: Non-prescription (OTC) medications can be purchased by patients as self-medication and not necessarily because of the doctor's advice. Patients often approach a pharmacist instead of visiting a doctor for minor ailments such as cough, cold, allergies, pain, fever, acidity, diarrhoea, and skin-related conditions.

Use of OTC medicines may lead to:

- Its misuse
- Excessive/long term use may cause various adverse reactions
- Drug dependence
- Severe uncommon effects
- Underlying condition of patient remaining undiagnosed
- Drug induced diseases
- Drug tolerance
- Medicine resistance
- Interference with ongoing medicines

Some examples:

1. Even a single tablet of Aspirin could cause gastric irritation, or even precipitate an underlying ulcer
2. Aspirin taken by pregnant female near the time of delivery can cause severe bleeding
3. Repeated self-medication of antacids can mask an underlying gastric ulcer or even cancer! Patients sometimes take various prescription and OTC medicines, which poses the possibility of drug interactions and unintentional consumption of the same medicines from two different formulations.

Considering all above factors, it becomes imperative that the pharmacist provide advice and guidance to patients for safe use of OTC medicines.

e. Describe the oral communication skill.

Ans: Oral communication skill: Communicating orally or verbal communication is the most common type of communication. A pharmacist should have good and effective verbal skills. Visiting patients/customers to the pharmacy provides an opportunity for community pharmacists to have one to one communication. One-to-one communication is very effective in influencing the patient's behaviour on medication use.

Skills for effective verbal communication: Having good communication skills is essential for providing good customer service. A community pharmacist must possess the following qualities:

- Politeness, positive and caring attitude
- A positive business practice
- Respecting patient confidentiality and maintaining patient privacy
- Attitude for developing and maintaining a good rapport with the patient

Patient counselling requires the skills of verbal communication.

The following skills of the pharmacists are needed for effective verbal communication:

- **Tone of the voice:** One needs to be polite and sensitive
- **Expression of the face:** There must be a pleasant, smiling face
- Choosing proper words
- **Familiar language:** The pharmacist must use a language in which the patient is familiar and comfortable with.
- Use of proper pronunciation and avoiding abbreviation use
- **Listening skills:** Good listening skills not only help to understand the patient's concern; it also helps in creating a positive image that the pharmacist is caring.

Advantages:

- Saving time-messages can quickly pass
- Fewer chances of misinterpretation
- Improves interpersonal relationships

Disadvantages:

- Requires privacy
- Chances of misunderstanding
- Chances of irrelevant discussion consuming a lot of time.

f. Describe the professional responsibilities of a community pharmacist.

Ans: Professional responsibilities of a pharmacist:

1. Prescription processing
2. Dispensing of medication
3. Patient counselling
4. Drug information services
5. Health screening services
6. Response to minor and common ailments
7. Health promotion
8. Professional relationship

1. **Prescription processing:** The pharmacist has to receive the prescription and check its legality.
2. **Dispensing of medication:** The pharmacist dispenses the medications in a proper manner.
3. **Patient counselling:** Patient counselling services are an important part of the duty of pharmacists while dispensing medicines.
4. **Drug information services:** Pharmacists should provide information regarding standard therapy, alternative therapy, adverse drug reactions, etc.
5. **Health screening services:** Community pharmacists should help in detection of diseases, reduce risk factors and maintain well-being by various health screening programmes.
6. **Response to minor and common ailments:** Community pharmacists can advise the patients to visit a physician depending on the condition. They can advise on self-limiting ailments.
7. **Health promotion:** They can promote health by helping in rational drug use and various disease eradication programmes.
8. **Professional relationship:** Community pharmacists have professional relationships with other healthcare professionals like doctors to promote patient's well-being.

The other responsibilities of a community pharmacist includes:

1. Establishing a Pharmacy
2. Extemporaneous preparations
3. Rational drug use
4. Patient care
5. Act as family pharmacist
6. Individualization of drug therapy
7. Pharmacovigilance
8. Non-pharmacological counselling
9. Women, infants and elderly care
10. Home care
11. Addiction help
12. Social work and national health programmes

g. Define audits. Give any four benefits of audits in community pharmacy.

Ans: Audit: Audit means unbiased examination of the records or activities in the business.

Benefits of audit:

1. It helps to maintain good professional standards by increasing customer satisfaction.
2. It improves the quality of working.
3. It enhances efficient use of people, time and money.
4. It helps support change by producing objective information about the quality of care.
5. Audits help to predict and project gross product sales and profit or loss of a business.
6. It prevents claims, loss, and fees associated with health and safety neglect.
7. Audits help to reduce inventory, storage cost and waste from retailing.
8. It maintains and upgrades pharmacy standards
9. It identifies trends and areas for improvement to make educated business decisions.

h. What is communication? Write short note on body language as effective communication.

Ans: Communication: Communication is the sharing of information, ideas, thoughts and feelings.

It involves not just the spoken word but also what is conveyed through inflection, vocal quality, facial expression, body posture and other behavioural responses.

Body language

- Body language is a range of non-verbal signals that a pharmacist can use to communicate with patients and other professionals.
- The factors that need to be taken into consideration include facial expressions, gestures, eye contact, touch, space and the personality of the pharmacists. Body language is used when pharmacists interact in person.

Following are tips that can help pharmacists to adjust their body language so that they can make a great first impression.

- **Posture:** Pharmacists should sit or stand tall with their shoulders back and hands by sides close to their body. This indicates a willingness to communicate and share ideas.
- **Eye contact:** Pharmacists should maintain appropriate eye contact with a smiling face.
- **Gestures:** Pharmacists face, hand, and arm gestures should be purposeful and deliberate. They should avoid unnecessarily

touching their face or other body parts intermittently while talking or answering questions.

- **Tone of voice:** Pharmacists should speak clearly and loud enough to be heard by patients (customers). The vocal tone should not be not too loud or too soft.
- The individuals usually form their facial expressions depending upon the situations. Pharmacists, during interaction with others, should keep normal and pleasant facial expressions, even when they are under unfortunate situations.
- Through body language pharmacists should express that the person's message is important and that his or her point is well received. Body language can tell a pharmacist when the patient has a question, wants to say something, agrees or disagrees with him, needs a break, requires more explanation, or has an emotional response.
- Body language signals such as arms folded in front of the body, minimal or tense facial expressions, body turned away from audience, eyes downcast maintaining little contact, etc. exhibits one's behaviours such as disengagement, disinterest or unhappiness. Pharmacists should avoid these.
- Pharmacist's ability to understand and interpret other people's body language can help him to pick up on unspoken issues or feelings in others.

i. Define auxiliary label. Give advantages of pictogram.

Ans: **Auxiliary label:** An auxiliary label is also called cautionary and advisory label or prescription drug warning label. It is a label added on to a dispensed medication package by a pharmacist in addition to the usual prescription label (main label).

Advantages of pictograms

1. Pharmaceutical pictograms (nonverbal symbols) are representation of the information in the form of simple pictures that convey medication instructions, precautions and/or warnings to patients.
2. Many people do not understand English, the best solution is to use visual aids as pictograms.
3. Pictogrammes help in counselling patients by providing information about the medication in a visual form.
4. Pictograms should be simple and clear and use graphic symbols that represent words or phrases. A good illustration can make a message easier to grasp and recall.

5. Pictogrammes are increasingly used to communicate warnings and other safetyrelated information
6. Pictograms are helpful for those patients who cannot read the label due to the small print size and the excessive amount of information in a restricted area.
7. Pictograms help to provide medicines information for achieving successful therapeutic outcomes.

j. Give criteria for vendor selection for supplying medicine in community pharmacy.

Ans: The wholesaler or distributor is the vendor for community pharmacies. A vendor audit is a useful tool which can be used while selecting vendors for supplies.

Vendor audit should take into account the following:

1. Vendor has a drug license for wholesale.
2. Vendors should ensure quality, uninterrupted supply, at a competitive price of medicines.
3. Has good stocking and transport facility (as the quality of medicines is dependent on storage and transport)
4. The wholesaler should have proper storage including a refrigerator and freezer. The whole facility must have air conditioning
5. Whether the vendor has, and follows, Standard Operating Procedure for its activities
6. Conditions of supply like modes and dates for payment, frequency of supply, etc.
7. When there are many vendors offering quality products, market reputation and economic aspects are considered.

k. Define community pharmacy, community pharmacist and independent pharmacy.

Ans:

1. **Community pharmacy:** A community pharmacy, often called a retail pharmacy or medical store or 'chemist and druggist', is the type of healthcare facility where medicines are stocked & dispensed to the patients on a valid prescription and OTC, and also offer various professional services that improves the health of the patient.
2. **Community pharmacist:** Community pharmacists are the most accessible health professionals to the community who dispense quality medicines to the public, participate in community health

promotion programmes and take responsibility to provide pharmaceutical care by rational use of medicines.

3. **Independent pharmacy:** Independent pharmacies are the retail pharmacies in the neighbourhood. They are mainly single business entities, either owned by single or partners (pharmacist/nonpharmacist) where pharmacists are employed and owners are responsible for management of pharmacy and pharmacist are responsible for professional services.

Q.3. Answer ALL Questions of the following: 20 Marks

a. GPP guidelines for community pharmacy are drafted by the IPA in the year _____.

Ans: 2002

b. Patient counselling helps to motivate the patient to take medicine for improvement of his/her health status. True/False

Ans: True

c. Sphygmomanometer is used to measure _____.

Ans: Blood pressure

d. What is standard operating procedure?

Ans: A standard operating procedure is a set of written instructions describing how a routine task is to be carried out; when, where and by whom.

e. Define patient package inserts.

Ans. The patient package insert is a document which is included in the medication package and provides information regarding the drug and its use.

f. The extent to which patients take medication as prescribed by prescriber is called _____.

Ans: Medication adherence

g. As per Drugs and Cosmetic Rules, 1945, which one of the following rules indicate the presence of pharmacist is legally required during the dispensing and selling of medicines?

(i) Rule 45(15) (ii) Rule 65(25)
(iii) Rule 65(15) (iv) Rule 75(15)

Ans: (iii) Rule 65(15)

h. The prescriber indicates the direction for the patient, for the use of the medication in the portion of the prescription is called as _____.

Ans: Signatura

i. Restricted salt intake is recommended in _____

(i) High Blood pressure (ii) Low Blood Pressure
(iii) Diabetes (iv) Asthma

Ans: (i) High Blood Pressure

j. Body Mass Indexing (BMI) is the most common screening test for _____.

Ans: Obesity

k. ORS is used in the management of _____.

Ans: Dehydration

l. Self-medication should not be done with prescription medicine. True/False

Ans: True

m. What is book of original entry?

Ans: The book for an account in which a transaction is recorded for the first time from a source document is known as the book of original entry.

n. The minimum floor space specified for operating a retail pharmacy is.

Ans: 10 m^2

o. Who is the licensing authority for issuing retail sale license?

Ans: Drugs controller authority of the state/state drugs standard control organization.

p. In finance, what business owns is called as _____.

Ans: Assets

q. Morphine is not used as OTC medicine due to chance of abuse. True/False

Ans: True

r. Ambient temperature should be maintained in the pharmacy within the required range to prevent _____ of medicines.

Ans: Deterioration

s. From the following features, what is applicable to petty cash?

(i) Small amount of cash
(ii) Used for minor expenses
(iii) Is easy and quick way for payment
(iv) All of the above

Ans: (iv) All of the above

t. As per Drug price control order 2013, a community pharmacies have the liberty to sell medicines at a price to maximize the profit. True/False

Ans: False

Summer Examination 2024 (Question Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Give the characteristics of ideal pharmacy interior design.
b. Mention the causes of dispensing errors. Give strategies to minimize dispensing errors.
c. Define patient counselling. Discuss the patient counselling points for hypertensive patients.
d. Explain the role of pharmacist in OTC medication dispensing.
e. What factors need to be considered while selecting a site for setting up a community pharmacy?
f. Define diarrhoea. Describe the causes, symptoms and self-care advice for management of diarrhoea.
g. Enlist various inventory control techniques useful for community pharmacy. Explain any two techniques in detail.

Q.2. Answer any TEN of the following: **30 Marks**

a. What are the factors to be considered while selecting the vendors to supply the medication material in community pharmacy?
b. Define communication skills. Enlist the points to make telephone conversation effective.
c. Explain the procedure of measuring capillary blood glucose level by using glucometer.
d. Define community pharmacy. Explain the current scenario of community pharmacy in India.
e. What are the advantages and disadvantages of self-medication?
f. What are the professional responsibilities of community pharmacist?
g. What documents are required to open a new retail drug store?
h. Write a note on handling of prescription.
i. Explain the importance of body language with respect to posture and eye contact.
j. What are the benefits of patient counselling?
k. What are the patient related factors for medication non-adherence?

Q.3. Answer ALL Questions of the following: 20 Marks

a. Define finance.
b. Define self-medication.
c. COPD stands for _____
d. Stadiometer measures the _____of the patient.
e. Define pharmaceutical pictogram.
f. Define daybook.
g. Define patient package insert.
h. The drugs enquiry committee was formed in which year and who headed the committee?
i. The minimum floor space specified for operating a retail pharmacy is _____
j. Define SOP.
k. What is the full form of DOTS?
l. Lead time is_____
   (i) Time to get the supply after ordering.
   (ii) Ideal time to order supply.
   (iii) Time to order economic order quantity.
   (iv) None of the above.
m. GPP for community pharmacy setting is developed by _____
   (i) WHO and FIP
   (ii) WHO and UNICEF
   (iii) FIP and UNICEF
   (iv) WHO
n. Cash memo is the testimony of _____
   (i) Purchase record
   (ii) Sales record
   (iii) Counselling record
   (iv) None of the above
o. A patient is considered adherent if he takes as prescribed ____% of their medications as prescribed.
p. Household remedies are listed in schedule _____ of drugs and cosmetics rules.
q. Which of the following health screening services in non-invasive?
   (i) Blood glucose level
   (ii) Blood pressure level
   (iii) Blood hemoglobin level
   (iv) Blood lipid level

r. Medicines like Ibuprofen, naproxen are _____
   (i) OTC in India
   (ii) Schedule H in India
   (iii) Schedule X in India
   (iv) Schedule G in India

s. Define digital health.

t. Storage at cold condition indicates _____
   (i) Keeping below 0°C
   (ii) Keeping at 0°C
   (iii) Keeping at 0°C to +18°C
   (iv) Keeping at 2°C to 8°C

Summer Examination 2024 (Specimen Answer Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Answer any SIX of the following: **30 Marks**

a. Give the characteristics of ideal pharmacy interior design.

Ans: Objectives of Layout Design:

(i) To attract a large number of customers.
(ii) To increase the sales of the store.
(iii) To reduce the selling expenses to a minimum.
(iv) To provide customers satisfaction.
(v) To project a professional image and improve general appearance.
(vi) To minimize the movement of customers within the premises of the drug store.
(vii) To provide surveillance in order to reduce the chances of pilferage and theft.
(viii) To have space for reserve stock, office and resting place for the employees.
(ix) To have a proper entrance for incoming goods

Pharmacy Designs and Interiors:

1. Generally, the drug stores, are located on the ground floor of the building. They are usually constructed of cement concrete walls with mosaic tiles on the floor.
2. The internal fittings usually consist of racks or storage cupboards having glass doors, drawers for storing strips, shelves and a proper place for placing the refrigerator.
3. The counters of the store are made from wood having white sunmica at its top.
4. The furniture includes a working table and wooden or steel chairs for the staff and customers.
5. A modern drug store should fulfil all the minimum requirements as laid down in Schedule 'N' of The Drugs and Cosmetic Rules, 1945.

6. To start a retail drug store a minimum of 10 sq. meter area is required. Similarly, to start a wholesale drug store a minimum 10 sq. meter area is required.
7. The premises of a drug store must be separated from rooms for private use.
8. The outer front of the drug store should be very attractive and built with innovative construction techniques.
9. The material used for constructing the drug storefront is normally glass, glazed tiles and marbles which are easy to clean.
10. The floor of the drug store should be smooth and washable. The walls should be plastered or tiled or oil painted to maintain a smooth durable and washable surface, adequate lighting should be provided, preferably tube lights which are concealed.
11. Good lighting system provides a cheerful atmosphere for the customers, and the merchandise stored and displayed appears more attractive. It also helps in identifying the medicines etc. quickly and easily and thus increases the efficiency of the store.

b. Mention the causes of dispensing errors. Give strategies to minimize dispensing errors.

Ans: Common Dispensing Errors:

1. Dispensing medication for a wrong patient
2. Dispensing wrong medicine
3. Dispensing wrong drug strength (dose)
4. Dispensing the wrong quantity
5. Dispensing wrong dosage form
6. Dispensing with wrong information on label
7. Dispensing at wrong time
8. Failure to dispense
9. Dispensing medicines of inferior quality
10. Dispensing expired or almost expired drugs.

OR

1. Poor handwriting of the prescriber
2. Retrieval of wrong drug from the stock
3. Dose interpretation: Dose error/Wrong dose
4. Incorrect interpretation of abbreviation.
5. Expiry error

Strategies for minimising dispensing errors:

1. **Confirm contents of prescription:** Any doubts and uncertainties should be clarified with the prescriber.
2. **Beware of LASA (Look alike sound alike):** The name should be read carefully.
3. **Organize workplace:** Proper lighting, adequate counter space, and proper temperature and humidity of the workplace.
4. **Reduce distraction:** Avoid multitasking.
5. **Reducing stress and balance workload:** Give regular breaks and freedom from secondary responsibility to the employee.
6. Thoroughly check all prescriptions
7. Thorough patient counselling
8. Educating the patients about safe and effective use of their medicines

c. Define patient counselling. Discuss the patient counselling points for hypertensive patients.

Ans: Patient counselling: Patient counselling is a process wherein pharmacists have face-to-face interaction with the patient to provide oral or written information on directions of use and advice on side effects to help them use their medications appropriately.

Patients Counselling in Hypertension:

- Patients should be counselled about the nature of the disease and the management of hypertension, before being subjected to laboratory evaluation and drug treatment.
- Hypertension (systolic blood pressure 140 mm Hg or diastolic pressure 90 mm Hg) Risk increases with age: those who are normotensive at age 55 have a 90% lifetime risk of developing hypertension.
- Counselling hypertensive patients requires insight, creativity and ingenuity because fixed messages will fall flat.
- Effective counselling covers following essential themes:
  a. Improving health status with adherence.
  b. Providing information on adverse effects.
  c. Contraindications.
  d. Promoting healthy behaviours.
- Always begin by asking patients what prescribers told them previously, in order to save time and to identify information related to their disease quickly.

Emphasizing Medication Adherence:

- Because patient adherence is lower for symptomless conditions, it is crucial to emphasize controlling blood pressure and to list the risks of medication non-adherence.
- Inform patients about what to do if they miss a dose. Repeat the name of the medication frequently so that patients become familiar with it.
- Make suggestions that incorporate multiple daily doses into the patient's routine.
- Be cautious, however, about pairing medications with meals because some patients eat only 2 meals a day, others may have 4. Instead, specify the number of times per day to take the medication.
- Ask specific questions about the patient's ability to follow directions, such as "This medication must be taken twice; when in your day do you think you would take it?"

Adverse Effects and Contraindications:

- Make adequate counselling ideal by offering tips for coping with common adverse effects. Not rare but serious side effects and describe the circumstances under which patients should contact their physician.
- Warn patients about drug, food or OTC product interactions and other contraindications.
- Highlight transient side effects, such as orthostatic or gastrointestinal complaints are temporary.
- Counsel patients about the dangers of stopping the medication before talking to their physician. Sudden termination of many antihypertensive may lead to rapid, dangerous blood pressure escalation.
- Tell patients to keep enough medicine to last through weekends, holidays or vacations. Suggest carrying an extra prescription in a billfold or purse in case of an emergency.
- Always encourage patients to call the pharmacy whenever needed help with medications.

Promoting Healthy Behaviours:

- Effective changes in health behaviours help the patient set realistic, achievable goals.
- Suggest small changes that elicit firm commitments. Patients may balk at 30 minutes of exercise but be willing to commit

to 10 minutes a day. They may roll their eyes at a 10% weight reduction but commit to losing 5 lb. Sometimes adding new behaviours (e.g. exercising) is easier than eliminating old habits (e.g. eating salty chips).

Patient Self-Monitoring:

- Many patients monitor their own blood pressure.
- They should be told to keep a log and to record their BP at the same time each day.
- Additionally, they should take their cuff with them when they visit their doctor to ensure that they are taking readings correctly and that the machine is calibrated accurately.
- Building confidence begins with demonstrating a genuine interest in what happens to the patient, and communicating your concern by saying "See you next month, OK?"

d. Explain the role of pharmacist in OTC medication dispensing.

Ans: OTC Medication: Over-the-counter (OTC) medicines are the drugs which are available to the patients without a prescription. These medicines are called non-prescription medicines.

Role of pharmacists in OTC medication dispensing:

- **Effective treatment:** Pharmacists can help in effective treatment and reduce its cost.
- **Public health:** Pharmacists can help improve public health by screening patients' health, providing information on drug safety, and deciding on rational use of OTC products.
- **Rational use of medicines:** Pharmacists need to check regarding interactions of OTC medications with herbal and dietary supplements or prescription drugs.
- **Education and counselling:** Pharmacists need to counsel patients regarding appropriate use of OTC products like dose, dosage form, route of administration, duration of action, special directions, precautions, side-effects, interactions and contraindications.
- **Keeping check:** Pharmacists need to check OTC medicines interactions with other drugs, prescription drugs or with food.
- **Preventing drug abuse and misuse:** Pharmacists need to keep check on drug abuse and misuse by the patients.
- **Referral to doctor:** The community pharmacists need to identify whether OTC products are appropriate for the patient or the case needs to be referred to a doctor.

e. What factors need to be considered while selecting a site for setting up a community pharmacy?

Ans: The following factors should be considered while selecting a site for a new community pharmacy.

Various factors are:

1. Physicians
2. Clinic/hospital
3. Other drug store
4. Flow of traffic
5. Parking
6. Business locality
7. Residential areas
8. Developing areas
9. Near hotel, school, playground, cinema hall, etc.
10. Visibility and accessibility

1. **Physicians:** If a location is having a good practice of more than three physicians, then 70% of business will come through prescriptions. But if physicians are dispensing their own medicines, they will prove to be competitors for the drug store.
2. **Hospital:** If a hospital or clinic has a good practice of doctors without its own pharmacy, then it is considered to be a very good location.
3. **Other drug stores:** The area where no other pharmacies exist should be selected, but if the potential is very high and already a number of pharmacies are existing then this area may be selected. This area may become a major business centre for drugs. People in large numbers may visit the area thinking that all types of medicines are available and in turn the sales increase.
4. **Flow of traffic:** A pharmacy should be in an area, where there is no traffic congestion. A pharmacy should not be opened near traffic signals or road circles as it may lead to traffic jams. It should be opened on that side of road which people take to reach their homes because people prefer to buy goods while returning home from their jobs.
5. **Parking:** Enough parking space is always advisable when selecting a location.

6. **Business locality:** Number of people coming to business locality is high. In this case, if shop is made attractive people may visit to purchase drug simultaneously. The disadvantage is that the shop is not easily available and the price of shop is very high. Huge investment is required to maintain the standard of pharmacy.
7. **Residential areas:** Thickly populated areas should be selected for a pharmacy. People prefer to buy medicines from nearby areas.
8. **Developing area:** Nowadays in cities new areas are developing fast. It is a good location to serve the needs of customers initially providing all types of services. Competition is not a problem in this area.
9. **Near hotels, schools, playground, cinema halls:** These locations are not preferable for starting a drug store because generally people live at a distance from schools, playgrounds, hotels, etc. If a site is near a restaurant, it may create a problem of maintaining cleanliness in the neighborhood of the drug store. In case cold drinks or ice-cream facilities are also extended then it is preferable to open a pharmacy near cinema halls.
10. **Visibility and accessibility:** The pharmacy should be easily visible and accessible to the customers. It should be on a ground floor and near the footpath

f. Define Diarrhoea. Describe the causes, symptoms and self-care advice for management of diarrhoea.

Ans: **Diarrhoea:** Diarrhoea is an increased frequency and decreased consistency of faecal discharge as compared with an individual's normal bowel pattern.

Causes:

- Allergies to certain foods
- Diseases of the intestines (such as Crohn's disease or ulcerative colitis)
- Eating foods that upset the digestive system
- Infection by bacteria (the cause of most types of food poisoning) or other organisms like parasites
- Laxative abuse or a reaction to medications like antibiotics and certain cancer drugs
- Running (Some people get “runner’s diarrhea” for reasons that are not clear.)
- Some cancers

- Surgery on your digestive system
- Trouble absorbing certain nutrients, also called "malabsorption"
- Overactive thyroid (hyperthyroidism)

Symptoms:

- Bloating in your belly
- Thin or loose stools
- Watery stools
- An urgent feeling that you need to have a bowel movement
- Nausea and throwing up
- Leaking stool, and you cannot control your bowels (incontinence)

Self-care Advice:

Drink liquids: Drink clear fluids or oral rehydration to replace lost fluids:

- Clear liquids such as water or broth are the best choices.
- Do not have drinks with a lot of sugar in them, such as juices and sodas. These can make diarrhoea worse.
- If you have severe vomiting, do not drink sports drinks, such as electrolyte solutions. These do not have the right mix of water, sugar and minerals.
- They can also make the symptoms worse. In this situation, commercially available oral rehydration (ORS) solutions are best.
- Suck on ice chips if the thought of drinking something makes you queasy.

When you are able to eat again: Tips include the following:

- As your appetite comes back, you can resume your normal diet.
- Avoid eating unhygienic food.

Medicines: Know the following about medicines:

- Vomiting and diarrhoea are ways your body uses to rid itself of harmful substances such as bacteria. Do not use antidiarrhoeal or anti-vomiting (antiemetic) medicines unless your healthcare provider tells you to do so.
- Aspirin, medicine with aspirin and many aspirin substitutes can irritate your stomach. So do not use them when you have a stomach upset.
- Certain prescription and over-the-counter medicines can cause vomiting and diarrhoea. Talk with your healthcare provider about any medicines you take that may be causing these symptoms.

- Certain over-the-counter antihistamines like dimenhydrinate can help control nausea. Other medicines can help soothe stomach upset. Ask your healthcare provider which medicines may help you.

g. Enlist various inventory control techniques useful for community pharmacy. Explain any two techniques in detail.

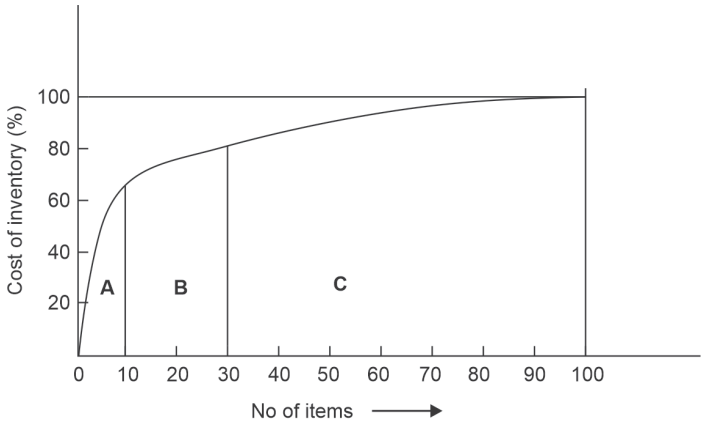
Ans: Inventory Control: It is defined as a continuous process that involves planning, organizing, and controlling inventory to minimize the investment in inventory while maintaining an optimum level stock of the items.

Techniques of inventory control:

1. ABC analysis
2. Economic order quantity (EOQ)
3. Perpetual inventory system
4. VEN/VED analysis
5. Setting of various levels
6. FIFO and LIFO
7. Establishing an effective purchase procedure

ABC analysis: (Always Better Control): In this, the materials are divided into three groups–A, B and C according to the cost of material and money value of consumption.

Sl. no.	A-items	B-items	C-items
1.	It covers 10% of total inventories.	It covers 20% of total inventories.	It covers 70% of total inventories.
2.	It consumes about 70% of total budget.	It consumes about 20% of total budget.	It consumes about 10% of total budget.
3.	It requires very strict control.	It requires moderate control.	It requires slight or loose control.
4.	It needs minimum follow up.	It needs periodic follow up.	It needs close follow up.
5.	It requires more effort to reduce lead time.	It requires moderate effort to reduce lead time.	It requires minimum effort to reduce lead time.
6.	It requires low safety stock.	It requires moderate safety stock.	It requires high safety stock.



Q.2. Answer any TEN of the following: **30 Marks**

a. What are the factors to be considered while selecting the vendors to supply the medication material in community pharmacy?

Ans: The wholesaler or distributor is the vendor for community pharmacies.

A vendor audit is a useful tool which can be used while selecting vendors for supplies.

Vendor audit should take into account the following:

1. Vendor has a drug license for wholesale.
2. Vendors should ensure quality, uninterrupted supply, at a competitive price of medicines.
3. Has good stocking and transport facility (as the quality of medicines is dependent on storage and transport)
4. The wholesaler should have proper storage including a refrigerator and freezer. The whole facility must have air conditioning.
5. Whether the vendor has, and follows, standard operating procedure for its activities
6. Conditions of supply like modes and dates for payment, frequency of supply, etc.
7. When there are many vendors offering quality products, market reputation and economic aspects are considered.

b. Define communication skills. Enlist the points to make telephone conversation effective.

Ans: Communication is the sharing of information, ideas, thoughts and feelings.

It involves not just the spoken word but also what is conveyed through inflection, vocal quality, facial expression, body posture and other behavioural responses.

Points to make telephone conversation effective:

1. Speak slowly and clearly
2. Listen actively
3. Develop rapport
4. Attention
5. Clarifying the content
6. Be friendly and welcoming
7. Privacy protection
8. Remembering names
9. Prepare in advance
10. Friendliness
11. Be professional
12. Clear enunciation.

c. Explain the procedure of measuring capillary blood glucose level by using glucometer.

Ans: Capillary blood glucose level method:

1. **Wash hands:** Begin by washing your hands with soap and water to ensure cleanliness.
2. **Prepare glucometer:** Turn on the digital glucometer and ensure it is calibrated and has enough battery power.
3. **Insert test strip:** Insert a new, compatible test strip into the glucometer as per the manufacturer's instructions.
4. **Lance finger:** Use a lancet to prick the side of your fingertip gently. A small drop of blood will form at the puncture site.
5. **Apply blood sample:** Touch the blood droplet to the designated area on the test strip. Ensure enough blood is applied to get an accurate reading.
6. **Wait for result:** The glucometer will process the blood sample and display the blood glucose level on the screen.
7. **Record the reading:** Note down the blood glucose reading along with the date and time for record-keeping or to share with your healthcare provider.
8. **Dispose of test strip:** Safely dispose of the used test strip according to the manufacturer's instructions.
9. **Clean up:** Clean the glucometer and your hands as needed after the measurement.

d. Define community pharmacy. Explain the current scenario of community pharmacy in India.

Ans: Community pharmacy is defined as any place under the direct supervision of a pharmacist where the practice of pharmacy occurs or where prescription orders are compounded and dispensed other than a hospital pharmacy or a limited-service pharmacy.

Current Indian Scenario:

- The pharmacy practice scenario and especially community pharmacy practice during the pre-independence era was highly unregulated and there were no restrictions on the practice of pharmacy in India. The standardization of pharmacy education was introduced in 1945.
- In 1949 Pharmacy Council of India was established under Pharmacy Act 1948.
- In 1953 education regulation came into force in some states but other states lagged behind.
- In 1954 Drugs and Magic Remedy Act was passed to stop misleading advertisement.
- In 1955 Medicinal and Toilet Preparations Act was introduced to enforce uniform duty for all states for alcohol products.
- In India, provisions of the Pharmacy Act 1948 enforced community pharmacists working in India to have a pharmacist registration certificate issued by the State Pharmacy Council of the respective state. To obtain a registration certificate, the prospective pharmacist must acquire the minimum diploma (DPharm) from a pharmacy institute recognized by the Pharmacy Council of India (PCI). Both DPharm and BPharm holders are allowed to practice in any community pharmacy.
- In 1985 Narcotic and Psychotropic Substances Act was enacted to protect society from the danger of attitude drugs.
- The primary objective of education and training of community pharmacists is the safe and effective use of medicines to improve patient outcomes. The training was provided during educational programs but to maintain registration continued professional development was essential to ensure that the practice is kept up-to-date.

e. What are the advantages and disadvantages of self-medication?

Ans: Advantages of self-medication

- Number of doctors available are limited. So it is not practical to treat every minor ailment through a doctor.

- It can save patients' money and time.
- Quick relief to patients
- Wide variety of OTC medicines are readily available.
- The OTC products are relatively safe and efficacious.

Disadvantages of self-medication

- Self-diagnosis may not be correct
- Wrong and prolonged self-medication can delay proper diagnosis and treatment
- Possibility of adverse drug reaction and drug dependence
- It should only be done for minor illness with OTC medicines and for limited time only.

f. What are the professional responsibilities of community pharmacist?

Ans: Professional responsibilities of a pharmacist:

1. Prescription processing
2. Dispensing of medication
3. Patient counselling
4. Drug information services
5. Health screening services
6. Response to minor and common ailments
7. Health promotion
8. Professional relationship

1. **Prescription processing:** The pharmacist has to receive the prescription and check its legality.
2. **Dispensing of medication:** The pharmacist dispenses the medications in a proper manner.
3. **Patient counselling:** Patient counselling services are an important part of the duty of pharmacists while dispensing medicines.
4. **Drug information services:** Pharmacists should provide information regarding standard therapy, alternative therapy, adverse drug reactions, etc.
5. **Health screening services:** Community pharmacists should help in detection of diseases, reduce risk factors and maintain well-being by various health screening programmes.
6. **Response to minor and common ailments:** Community pharmacists can advise the patients to visit a physician depending on the condition. They can advise on self-limiting ailments.

7. **Health promotion:** They can promote health by helping in rational drug use and various disease eradication programmes.
8. **Professional relationship:** Community pharmacists have professional relationships with other healthcare professionals like doctors to promote patient's well-being.

The other responsibilities of a community pharmacist includes:

1. Establishing a pharmacy
2. Extemporaneous preparations
3. Rational drug use
4. Patient care
5. Act as family pharmacist
6. Individualization of drug therapy
7. Pharmacovigilance
8. Non-pharmacological counselling
9. Women, infants and elderly care
10. Home care
11. Addiction help
12. Social work and national health programmes

g. What documents are required to open a new retail drug store?

Ans: Documents required for opening retail drug store:

1. Application in duplicate on Form 19 of the Drugs and Cosmetic Rules 1945
2. Challan of fee deposited for obtaining drug license
3. Details of the premises: The minimum space for retail pharmacy is 10 sq.m.
4. Plan of the premise duly signed by proprietor/partner, A copy of partnership deed in case of partnership firm.
5. Pharmacist details: Name, attested copy of Diploma in Pharmacy from Institution recognized by PCI, affidavit of registered pharmacist.
6. Applicant's details: Affidavit of non-conviction of proprietor/ partner/director under the D & C Act 1940. Passport size photograph, address and identity proof.
7. Details of the storage facilities: Refrigerator purchase receipt, Air conditioner purchase receipt along with their installation certificate.

h. Write a note on handling of prescription.

Ans: Prescription handling: The dispensing of medicines requires proper prescription handling. The various steps include:

- Receiving the prescription
- Checking the prescription
- Assembling the medicines
- Packing the medicines and labelling
- Billing and filling the patient medications report
- Instructions to the patient
- Endorsement
- **Receiving the prescription:** The pharmacist should receive the prescription from the patient or the relative in a professional manner with a smile, eye-to-eye contact and friendly courtesy.
- **Checking the prescription:** The pharmacist should always check the prescription for its proper format (legality) and completeness. In case of any difficulty, the pharmacist should consult another pharmacist or the prescriber. The pharmacist should never guess the medicines on a prescription as it may lead to serious issues.
- **Assembling the medicines:** While taking out the medicines from the shelves, the pharmacist should pay attention to the dosage form, strength and the expiry date. All the medicines should be kept in a tray.
- **Packing the medicines and labelling:** The medicines should be packed properly to keep the potency of the medicines intact. Medicines requiring storage in cold temperatures should be packed with ice packs. Proper labelling of the products is required in case dispensing is done from bulk containers.
- **Billing and filling the patient medications report:** The medicines should be checked for dosage form, strength, quantity and expiry date while billing. The pharmacist should make an entry into the patient medication report for each patient while billing. The bill should be signed by a registered pharmacist.
- **Instructions to the patient:** Patient counselling is an important step while dispensing of medicines. The pharmacist should provide instructions regarding dosing time and simple advice regarding the medications.
- **Endorsement:** The prescription should be stamped with date and sign of the pharmacist.

i. Explain the importance of body language with respect to posture and eye contact.

Ans: Role of body language in communication:

- This is important for face-to-face meetings and video conferencing. Make sure that you appear accessible, so have open body language. This means that you should not cross your arms and keep eye contact so that the other person knows that you are paying attention.
- Your posture has the greatest impact on your communication. The impression you have on others is split approximately:
  (i) Body (visuals) 55%,
  (ii) Voice (sound) 38%,
  (iii) Words (content) 7%.
- Folded arms, crossed legs, hunched shoulders, hands in pockets, looking down these are just some of the protective measures that make us feel safer, and should be avoided when giving a presentation or speech. Appearing relaxed makes us exert dominance and authority.
- If you watch politicians speak, notice how relaxed and confident they appear, talking slowly and making positive body movements. Use your arms to emphasize a point and illustrate the message.

j. What are the benefits of patient counselling?

Ans: Benefits of patient counselling

1. Counselling is beneficial in understanding the patients and their illnesses, and to frame strategies to deal with the health issues.
2. Patients will have a better understanding of the prescribed therapy and the appropriate use of the medication.
3. Counselling helps to ensure that correct medicine is supplied to the correct patient.
4. It improves patient adherence to the treatment.
5. It is beneficial in verifying patients' understanding, knowledge, and ability to self-manage therapy.
6. It helps to reduce medication errors and misuse and enhance patient monitoring.
7. It helps to reduce healthcare costs of individuals, society and government by preventing adverse events.
8. Promotes the image of pharmacist as a professional.
9. It helps to build trusting relationships with patients.

k. What are the patient-related factors for medication non-adherence?

Ans: Patient-related factors for medication non-adherence: Medication adherence is adversely affected by patient-related factors that are closely linked to the other factors previously discussed. Most of the time patient behavioural factors may not be perceived well by the doctors resulting in decreased adherence. Most variations in taking medication occur include omission of doses or delays in the timing of doses.

Patients with low literacy usually have difficulties in understanding instructions; which ultimately results in decreased adherence and poor medication management. The list of these factors includes:

a. Physical factors
b. Visual impairment
c. Hearing impairment
d. Impaired mobility/dexterity
e. Swallowing problems
f. Psychological/behavioural factors
g. Motivation
h. Fear of possible adverse effects
i. Fear of dependence
j. Feeling stigmatized by disease
k. Frustration with healthcare providers
l. Psychosocial stress/anxiety/anger
m. Alcohol/substance abuse.
n. Chronic diseases

Q.3. Answer ALL Questions of the following: 20 Marks

a. Define finance.

Ans: Finance is defined as a provision of money when business requires it.

b. Define self-medication.

Ans: WHO has defined self-medication as selection and use of medicines by individuals to treat self-recognized illnesses or symptoms.

c. COPD stands for _____.

Ans: Chronic obstructive pulmonary disease

d. Stadiometer measures the _____ of the patient.

Ans: height

e. Define pharmaceutical pictogram.

Ans: Pharmaceutical pictograms are representation of the information in the form of simple pictures or symbols which include directions for use, warning and precautions while taking medications.

f. Define daybook.

Ans: A daybook is a book of original entry in which the transactions are recorded by date in chronological order.

g. Define patient package insert.

Ans: A patient package insert is a document which is included in the medication package and provides information regarding the drug and its use.

h. The drugs enquiry committee was formed in which year and who headed the committee?

Ans: The drugs enquiry committee was formed in the year 1930 and was headed by Col. RN Chopra

i. The minimum floor space specified for operating a retail pharmacy is _____.

Ans: 10 m^2

j. Define SOP.

Ans: SOP may be defined as a written procedure which has to be carried out step by step for a particular activity.

k. What is the full form of DOTS?

Ans: Directly Observed Therapy Short course

l. Lead time is _____

(i) Time to get the supply after ordering.
(ii) Ideal time to order supply.
(iii) Time to order economic order quantity.
(iv) None of the above.

Ans: (i) Time to get the supply after ordering

m. GPP for community pharmacy setting is developed by _____

(i) WHO and FIP
(ii) WHO and UNICEF
(iii) FIP and UNICEF
(iv) WHO

Ans: (i) WHO and FIP

n. Cash memo is the testimony of _____

(i) Purchase record (ii) Sales record
(iii) Counselling record (iv) None of the above

Ans: (i) Sales record

o. A patient is considered adherent if he takes as prescribed _____ of their medications as prescribed.

Ans: >80%

p. Household remedies are listed in schedule _____ of drugs and cosmetics rules.

Ans: K

q. Which of the following health screening services in non-invasive?

(i) Blood glucose level (ii) Blood pressure level
(iii) Blood hemoglobin level (iv) Blood lipid level

Ans: (ii) Blood pressure level

r. Medicines like ibuprofen, naproxen are _____

(i) OTC in India (ii) Schedule H in India
(iii) Schedule X in India (iv) Schedule G in India

Ans: (ii) Schedule H in India

s. Define digital health.

Ans: It is defined as use of communication and information technology to improve the health.

t. Storage at cold condition indicates _____

(i) Keeping below 0°C (ii) Keeping at 0°C
(iii) Keeping at 0°C to +18°C (iv) Keeping at 2°C to 8°C

Ans: (iv) Keeping at 2ºC to 8ºC

Winter Examination 2024 (Question Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Attempt any SIX of the following: **30 Marks**

a. Define dispensing and write about the dispensing process.
b. Explain the types of barriers of patient counselling. Describe the strategies to overcome the barriers.
c. What is OTC product? Describe the role of pharmacist on OTC product dispensing.
d. Write about following minor ailments with its symptoms and advice for self care (Any two).
   (i) Diarrhoea (ii) Fever (iii) Vomiting
e. Describe the legal requirements to set up a community pharmacy.
f. Write about pharmacy layout and interior design. Draw an Ideal pharmacy layout design.
g. Explain digital health. What are its benefits? Give the advantages of online pharmacies.

Q.2. Attempt any TEN of the following: **30 Marks**

a. Discuss the role of community pharmacist.
b. Define SOP. State the contents in SOP. Give the benefits of SOP.
c. Define auxiliary label and pictogram. Give the auxiliary label for eye preparations and dispersible tablets.
d. Write about body language as a type of communication.
e. Describe communication over the telephone.
f. Define patient counselling. State the patient counselling tips for diabetes.
g. Enlist the factors influencing medication non-adherence. State the strategies to overcome medication non-adherence.
h. Give the importance of various health screening services.
i. What are the advices given by the pharmacist to the patients in cough and cold?
j. Explain the types of cash book.
k. Write about VED analysis.

Q.3. Attempt ALL questions. **20 Marks**

a. The two year professional course Chemist and Druggist Diploma was started in Madras Medical College for the first time in the year _____.

b. A good pharmacy practice manual in India was developed by _____ with help of _____ and CDSCO.

c. FIP stands for _____.

d. What is subscription?

e. Nonmedication measures for controlling hypertension includes following *except*:

(i) Weight reduction (ii) Regular exercise
(iii) Dietary changes (iv) Amlodipine.

f. Drug of choice in asthma _____.

(i) Lisinopril (ii) Sitagliptin
(iii) Montelukast (iv) Ethambutol

g. What are the modes of transmission of TB?

h. Define medication non-adherence.

i. Define health.

j. Minor ailments include:

(i) Cancer (ii) Cough (iii) COPD (iv) Diabetes

k. Drug of choice in pain and fever:

(i) Acetaminophen (ii) Cetirizine
(iii) Bisacodyl (iv) Zintac.

l. Define self-medication.

m. Aspirin is used in the treatment of _____

(i) Pain (ii) Inflammation
(iii) Prevention of heart attack (iv) All of the above

n. Minimum requirement of area to start a pharmacy is _____m^2

o. Give formula for EOQ. Analysis.

p. Enlist the types of petty cash book.

q. E-prescription in pharmacy stands for:

(i) Electronic prescription (ii) Essential prescription
(iii) Error prescription (iv) All of the above.

r. State any two advantages of opening a pharmacy in an urban location.

s. Give any two benefits of customer relation management.

t. Define procurement.

Winter Examination 2024 (Specimen Answer Paper)
Second Year Diploma in Pharmacy
Subject: Community Pharmacy and Management (20222)

Time: 3 Hours **Max Marks: 80**

Q.1. Attempt any SIX of the following: **30 Marks**

[*Refer Specimen Answer Papers of Summer 2023, Winter 2023, Summer 2024 Examinations and Answers from this book for the Question 1 (a), (b), (c), (d), (e), (f), (g)]

Q.2. Attempt any TEN of the following: **30 Marks**

[*Refer Specimen Answers Paper of Summer 2023, Winter 2023, Summer 2024 Examinations and Answers from this book for the Question 2 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k)]

Q.3. Attempt ALL questions. **20 Marks**

a. The two year professional course Chemist and Druggist Diploma was started in Madras Medical College for the first time in the year _____.

Ans: 1874

b A good pharmacy practice manual in India was developed by _____ with help of WHO _____ and CDSCO.

Ans: IPA; WHO India office

c. FIP stands for _____.

Ans: International Pharmaceutical Federation

d. What is subscription?

Ans: The directions given by the doctor to the pharmacist regarding the dosage form and number of units to be compounded and supplied is called the subscription.

e. Nonmedication measures for controlling hypertension includes following *except*:

(i) Weight reduction (ii) Regular exercise
(iii) Dietary changes (iv) Amlodipine.

Ans: (iv) Amlodipine.

f. Drug of choice in asthma _____.

(i) Lisinopril (ii) Sitagliptin
(iii) Montelukast (iv) Ethambutol.

Ans: (iii) Montelukast

g. What are the modes of transmission of TB?

Ans: Air droplet

h. Define medication non-adherence.

Ans: Medication non-adherence can be defined as any deviation by the patient from the advice of healthcare professional.

OR

If the patient takes <70% of the prescribed doses.

i. Define health.

Ans: Health is defined as the state of complete physical, mental and social well-being.

j. Minor ailments include:

(i) Cancer (ii) Cough (iii) COPD (iv) Diabetes

Ans: (ii) Cough

k. Drug of choice in pain and fever:

(i) Acetaminophen (ii) Cetirizine

(iii) Bisacodyl (iv) Zintac.

Ans: (i) Acetaminophen

l. Define self-medication.

Ans: According to the WHO's definition, self-medication is the use of drugs to treat self-diagnosed disorders or symptoms or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms.

m. Aspirin is used in the treatment of _____

(i) Pain (ii) Inflammation

(iii) Prevention of heart attack (iv) All of the above

Ans: (iv) All of the above

n. Minimum requirement of area to start a pharmacy is _____

Ans: 10 m^2

o. Give formula for EOQ. Analysis.

Ans: EOQ = $\sqrt{2a/cs}$

a = annual consumption,

b = buying cost per order

c = cost per unit of material

s = storage and other inventory carrying cost

p. Enlist the types of petty cash book.

Ans: There are two types of petty cash books:

Columnar petty cash book and imprest petty cash book

q. E-prescription in pharmacy stands for:

(i) Electronic prescription (ii) Essential prescription
(iii) Error prescription (iv) All of the above.

Ans: (i) Electronic prescription

r. State any two advantages of opening a pharmacy in an urban location.

Ans:
1. Population is more
2. Awareness of health is more.
3. Better medical facilities
4. More buying capacity
5. Better transport, financial, commercial and communication facilities
6. Better availability of skilled labour

s. Give any two benefits of customer relation management.

Ans:
1. Developing long lasting relationship with patient/customers
2. Providing better services to customers
3. Creating loyalty and customer retention
4. Increase in the profit
5. Customer satisfaction
6. Get competitive advantage in the market
7. Building image and reputation
8. High return on investment

t. Define procurement.

Ans: Procurement can be defined as the process of acquiring supplies by purchasing from manufacturers or distributors or private or public suppliers.

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