

**Model answer key: Q.P.Code 02284**

**Date: 24<sup>th</sup> May 2019**

**First year B.Pharm. (Sem II) (CBCGS) 2018-19**

**Hospital Pharmacy and drug store management (HPDSM)**

**N.B.: The answer key is listing points. Try to use it as guideline and judge answers.**

**Q.1 (a) Give organisational structure of hospital. List any two functions of hospital. 2M**

Organisational structure 1M

Functions of hospital 1M

**(b) Explain role of hospital pharmacist and nursing staff in charging policies in wards. 2 M**

Role of hospital pharmacist 1M

Role of nursing staff 1M

Elaborate on how both function in ordering medicines from pharmacy and how documentation is done for the same.

**(c) Explain suitable method used for addition and deletion of drugs in hospital formulary 2M**

Role of PTC in addition or deletion of the drug in HF and how the people using HF be informed (0.5M)

3-4 points for addition of the drug e.g. new drug in pharmacopoeia, Physicians consider the drug of great /proven clinical value

For deletion ... some side effects reported or adverse drug reactions (1.5M)

**(d) Explain infection control policies in hospital. 2M**

Minimum 4 points (0.5 M per point) to be mentioned for infection control policies as per American Society of hospital pharmacists(ASHP)

**(e) Write note on 'Drug utilization review'. 2M**

Drug utilization review(2M)(Elaborate the following points)

- ▶ Includes prescribing, dispensing, administering and ingesting of prescriptions of drugs
- ▶ Hospital pharmacist should take patient medication profile

**(f) Enlist various techniques used for sterilization in hospital supplies. Explain any one in brief. 2M**

Techniques of sterilisation (1M)

1. Physical Processes:

- I) Thermal methods: Dry heat, Moist heat, Heating with bactericide
- II) Non Thermal Methods: UV light sterilisation, Ionising radiations, Filtration, Aseptic handling

2. Chemical Processes

Explain any one in brief (1M)

**(g) Enlist various Intravenous additives. 2 M**

In the preparation of parenteral products, the following substances are added to make a stable preparation: The active drug, Vehicles:a) Aqueous vehicle (e.g. water for injection, water for injection free from CO<sub>2</sub>) b) Non-aqueous vehicle (e.g. Ethyl alcohol, propylene glycol, almond oil)

Adjuvants : i)Solubilizing agents (e.g. Tweens & polysorbates) ii) Stabilizers & antioxidants (e.g. thiourea, ascorbic acid, tocopherol) iii) Buffering agents (e.g. citric acid, sodium citrate) iv) Antibacterial agents (e.g. benzyl alcohol, metacresol, phenol) v) Chelating agents (e.g. EDTA) vi) Suspending, emulsifying & wetting agents (e.g. MC, CMC) vii) Tonicity factor (e.g. sodium chloride, dextrose)

**(h) List different traits to be possessed by an entrepreneur. 2 M**

Traits to be possessed by an entrepreneur:

Technical ability: Thorough knowledge of pharmaceutical sciences

Human relation ability Emotional Stability Consideration Co-operation Cheerfulness

Can be Cultivated

Communication ability: Written and verbal, can be cultivated and improved

Drive: Initiative Persistence Vigor Accepting responsibility

Thinking ability: Can be cultivated but upto certain limit

**(i) Explain functions of purchasing. 2M**

1. Formulating effective buying policies:  
Depends on type of drug store, Needs and desires of patrons, Selection of wholesaler as primary source of supply
2. Determining the demands and desires of the patrons:  
Inside source and outside source
3. Buying right quantity

4. Satisfy customers
5. Avoid 'out of stock' situation

**(j) Write note on Risk management in retail practice. 2M**

**TYPES OF RISK:**

- **MARKET RISK (Dynamic Risk):** This is due to changing market or economic conditions.
- **EXOGENENOUS OR STATIC RISK:** Fires, windstromes, patient injured on premises, negligent employees, business interruption, theft, death of key person.

**APPROACHES TO RISK MANAGEMENT**

1. **RISK AVOIDANCE:** Market risk can only be avoided by not entering in the business. So avoiding risk is simply avoiding exposure.
2. **RISK ASSUMPTION:** Decision to assume risk is the best decision, and taking the required policy and starting paying premium. Otherwise keeping sufficient fund for that risk from your business called as self- insurance.
3. **REDUCING OF HAZARDS:** Taking safety precautions and methods of control, less prevention programs can be carried out, fire extinguishers, fire escapes and efficient operating sprinkler system.
4. **SHIFTING THE INSURANCE:** Use of surety bonds, adopting corporate form of organization for limited liability feature.
5. **THROUGH INSURANCE:** Primary way to reduce risk through contract. Gambling reduces marginal utility while insurance works to reduce risk and increased the overall marginal utility.

**Q.2 (a) Describe the role of pharmacist in excercising control on ward stock items related to control substances. 4M**

hospital control procedure :

1. **Responsibility for controlled substances in hospital:**  
 Administration head-medical superintendent or dean, responsible for proper safegaurding & controlled substance within the hospital  
 Medical officer is responsible for purchase,storage,accountability & proper dispensing of bulk controlled substance within hospital mattron or head nurse of nursing unit is responsible for proper storage &use of nursing units controlled substances.Ward stock form should be used for ordering controlled items from pharmacy .before supplying new order old stock should be fully accounted loss or storage of dosage of drugs on ward-nurses incharge must prepare report to cover the incident this should b e duplicate;one copy to pharmacy for replacement &another to nursing officer.

**I. Daily controlled drugs administration form**

Date: ward no. : floor:  
 name: sp. Drescriptionof drugs : no, of tablet injctn: strength used: orderdby (doctor): adm by (nurses): time given:

**Procedure in case of waste or destruction, contamination.**

1. Aliquot part of narcotis soltn used for dose expel shld through in the sink.

2. Prepared dose refused by patient or cancelled by doctor:nurse shall expel solution into sink & record why the drug was not administered.
3. Accidental destruction or contamination of drugs person responsible shall indicate the loss.
4. Narcotics Rx not to be dispense unless dr. confirm supplies of narcotics to be used for patient in ward
5. Control of narcotics on ward by nurses: auditing of inventory with each change of nursing shift narcotics delivery to ward should be done by only selected nursing staff.

6. Charges for narcotic to the patient :as per policy PROTOCOL FOR REPORTING DRUG ABUSE/DIVERSION

(a) Elaborate duties of Hospital Pharmacy (2 Marks)

1. To provide and evaluate services in support of the care pursuant to the objectives and policies of the hospital.
2. To provide departmental services and implement the pharmaceutical principles objectives, policies and standards of the hospital.
3. To participate in and adhere to the safety programme of the hospital.
4. To estimate requirements for the department and recommend and enforce the policies and procedures to maintain an adequate and competent staff.
5. To develop and maintain an effective system of clinical and administrative records and reports.

**(b) Comment on adverse drug reaction monitoring. 4M**

**Following points to be elaborated**

**Role of PTC in Adverse drug reaction monitoring**

- ▶ Proforma
- Drug agent producing reaction
- Type of reaction
- Therapy and results
- Age, sex
- Source of drug: Prescription, OTC, other
- Date
- Attending Physician Name

**(c) Write note on 'Legal aspects related to wholesale' 4M**

1. Area not less than 10 sq. meters equipped with facilities for proper storage of drugs with a view to preserve the potency of drugs like refrigerator, AC ,

2. In the charge of a competent person, a registered person or who has passed matriculation examination or its equivalent with 4 years of experience in dispensing of drugs.
3. Licenses – To be displayed in prominent place  
Separate licences for SCHEDULE C and C1 Drugs

Schedule X drugs

Drugs Other Than Those Specified In C and C1 and X. etc.

Records to be preserved for a period of atleast 3 years from date of sale

Sale to only licenced person.

Q.3

a) Handling of radiopharmaceuticals in hospital pharmacy:

Following points should be covered:

Separate containers for urine and other biological waste.

Well labelled containers with instructions such as radiopharmaceutical waste

Patient safety protocol should be followed

Necessary precautions should be taken for the safety of the medical staff

Exposure time and dose should be strictly followed

Standard and approved waste disposal procedures should be followed.

b) Sterilization of surgical dressings and rubber gloves:

Following points should be covered:

Surgical dressings: Packaging before sterilization and use of drums

Moist heat sterilization method

Precautions after sterilization

Rubber gloves:

Wrapping and folding procedure

Autoclave sterilization method

Or Chemical sterilization

c) Importance of advertising in retail drug store

Following points should be covered:

Consumer awareness

Information of products and services

Increase profits

To build brand image of the store

Attract new customers

d) Want book method:

Following points should be covered:

Want book maintained as per the new demand from the customers

Different want books-based on distributors/products

Importance of want book

Availability of inventory based on want book

Q.4

a) Following points should be covered:

Different aspects of budget with the role of pharmacist should be explained.

Aspects like:

Things included under- Income

Things included under- Expenditure

b) Hospital formulary:

Following points should be covered:

Definition:

Continually revised compilation of approved pharmaceuticals, plus important ancillary information, which reflects the current clinical judgment of the institution's medical staff.

Role and responsibility of Editorial committee in preparing the hospital formulary

c) Joint stock Company:

Following points should be covered:

Procedure and purpose of formation

Concept of share and share holder

Stock price

Or

c) Functions of retailer:

Following points should be covered:

Understand the consumer requirement

Make the products available through appropriate channels of distribution

Link between consumer and distributor

Product feedback

Product promotion

d) Risk management in drug store:

Following points should be covered:

Types of risks

Different insurance policies

**Q.5 a) Explain care to be taken in designing procedures for administration of control: drug to in – patients**

Purchasing and stock management

Monitoring the effect of medications on the patient and ordering appropriate changes in therapy

Medication distribution systems

1. Bulk ward stock replenishment
2. Individual medication order system
3. Unit-dose system
4. Automated medication dispensing

Patient medication records **2M**

**b) State importance of PTC. Give composition of PTC.**

- Organizational line of communication between medical staff and pharmacy
- Policy development
- Education
- Drug safety and adverse drug monitoring **1M**

Composition of PTC **1M**

**c) Describe layout of CSSR. Elaborate on important factors to be considered for functioning of CSSR**

Layout of CSSR **2M**

CSSR ensures efficiency, economy and safety

-Distribution

- It helps in better coordination because of central location

- It saves time

- Reduces the risk of recontamination

- Nurses are able to look after the patients **2M**

**d) What do you understand by inventory control? Enlist different inventory control systems used in drug store Explain any one in detail. 4M**

Importance of inventory control:

Points such as -To increase the profits by maintaining the right inventory with right quantity

- To maintain the budget

-To understand what to buy

-How much to buy

-From where to buy

Inventory control methods **1M**

VED, ABC, EOQ, Want book, systematic want book **1M**

ABC Method:

- Points such as: Classifying the goods in ABC category based on the cost and sales volume and the details about the same. **2M**

OR

**Explain the factors to be considered in establishing purchasing policies in drugs store.**

Traffic flow analysis will be done.

Various inventory control methods helps in purchase.

Credit system helps in purchasing

items are recorded in appropriate want book based on the need as indicated by an order card located with each product or a strip of card board on the edge of shelf .

Information on card or strip indicates min/max quantities. i.e the no at which the items or quantities to order to bring the inventory to maximum level. **4M**

**6 a) Explain the ‘Role of hospital pharmacist in efficient running of a hospital.’**

Roles and responsibilities of hospital Pharmacist

With ethics and codes of pharmacist **4M**

**b) Enlist different packaging materials used for sterilization. Elaborate on any one.**

1. metal drums

2. card board boxes

3. wrappings

4. paper **1M**

Wrapping by paper and sterilization by Autoclave sterilization cycle – 121<sup>0</sup>c 15 lbs pressure, 15 min **1M**

OR

**Discuss various components of TPN with special precautions to be taken in manufacturing of TPN.**

(TPN) supplies all daily nutritional requirements. TPN can be used in the hospital or at home. Because TPN solutions are concentrated and can cause thrombosis of peripheral veins, a central venous catheter is usually required.

Total Parenteral Nutrition Components

Dextrose.

Amino acids.

Electrolytes.

Vitamins.

Minerals.

Fat emulsion      **2M**

**c. Explain 'Role of wholesaler in channels of distribution of pharmaceuticals.'**

1. The wholesaler buys the product in large quantity from the manufacturer and sells in small quantities to retailers as per his requirement.
2. The wholesaler provides warehousing (storing) facilities for goods.
3. The wholesaler provides distribution facilities for goods.
4. The wholesaler maintains adequate stocks of the entire range of product marketed by the companies.
5. The wholesaler helps to finance distribution by allowing credit to retailers though usually he pays for his own supplies promptly.
6. The wholesaler provides the information about the market trend to the manufacturer.
7. In some cases the wholesaler has to grade, brand, and pack the products before sale **2M**

**d. Elaborate on objectives of a drug store, Comment on role of store building, store front and doorway in efficient running of a drug store      4M**

Objective of drug store **1M** ,

Role of store building, store front and doorway in efficient running of a drug store **3M**