

December 2025

**PHARMACEUTICAL CHEMISTRY**

Time Allowed: 3 Hours

Full Marks: 80

(Answer all questions as directed)

**1. A. Fill in the blanks with appropriate words (any ten).**

1×10

- The closeness of two or more measurements to each other is known as \_\_\_\_\_
- $\beta$ -Lactams containing 3,6-dihydro-2H-1,3-thiazine rings are named as \_\_\_\_\_
- Ramipril is the prodrug for the drug \_\_\_\_\_
- Example of a dissociative anaesthetic is \_\_\_\_\_.
- What happened when Arsenious acid reacts with nascent hydrogen?
- Weakly basic drugs are generally assessed by \_\_\_\_\_ titration.
- Silver nitrate is used as \_\_\_\_\_ (primary/secondary) standard in \_\_\_\_\_ titration.
- Pheochromocytoma is \_\_\_\_\_
- \_\_\_\_\_ is the drug having antidiabetic as well as antineoplastic activity.
- Tocolysis is \_\_\_\_\_
- Anaket is the brand name of \_\_\_\_\_
- \_\_\_\_\_ antibiotic is generally used for the treatment of rocky mountain spotted fever.

**B. Choose the correct alternative (any ten)**

1×10

- Isosorbide dinitrate is mainly used for treating – (i) Gonorrhoea (ii) Meningitis (iii) Type-II DM (iv) Angina pectoris
- Which of the following drug belongs to Macrolide antibiotics – (i) Minocycline (ii) Clindamycin (iii) Chloramphenicol (iv) Azithromycin
- This drug is currently used for the possible treatment of Covid-19 in adults – (i) Remdesivir (ii) Favipiravir (iii) Zidovudine (iv) Acyclovir
- Vinblastine Sulphate is obtained from- (i) Catharanthus roseus (ii) Catharanthus penicillanic (iii) Catharanthus roseous (iv) None of these
- Endocarditis is an inflammation of - (i) Ear (ii) Heart (iii) Lungs (iii) Nose
- Molecular Formula of Potassium dichromate is – (a)  $\text{KCrO}_4$  (ii)  $\text{K}_2\text{Cr}_2\text{O}_2$  (iii)  $\text{K}_2\text{Cr}_2\text{O}_7$  (iv)  $\text{K}_2\text{CrO}_7$
- First edition of Indian Pharmacopoeia was published in the year – a) 1960 b) 1955 c) 1966 d) 1985.
- Limit of impurities is expressed as -a) mcg b) mg c) ppm d) ml.
- On complete reaction of acidified  $\text{KMnO}_4$  with oxalic acid, the colour of the solution becomes - a) pink b) colourless c) blue d) unchanged.
- Non-aqueous titration is carried out for- -a) water insoluble drug b) weakly acidic drug c) weakly basic drug d) all of a, b & c.
- Burnt infection is treated topically with the dilute solution of -a) Iodine b)  $\text{KMnO}_4$  c)  $\text{AgNO}_3$  d)  $\text{ZnO}$ .

**2. Answer any 10 (Ten) questions from the following:**

10×3

- Write the principle and chemical reaction involved in Limit Test for Iron
- Write the steps involved in Gravimetric analysis.
- What do you mean by broad spectrum antibiotics? Cite two examples.
- Write in brief about antiviral agents.
- Classify nonaqueous solvents with example.

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- f) Write a short note on Insulin preparations.
- g) Define Redox potential and write the names of different types of Redox titration.
- h) Write a short note on Primary Standard and Secondary Standard.
- i) Write down the chemical structure and name (any two)- (a) Thiopental sodium (b) Diazepam (c) Phenytoin.
- j) Define and classify with example- anti-arrhythmic drugs.
- k) Write down the uses, storage conditions, formulation of Idoxuridine and Pioglitazone.
- l) Write a brief note on (any one)- i) Co-trimoxazole ii) Antimetabolites.

3. Answer any 6 (Six) questions from the following:

6×5

- a) What are antidepressant agents? Classify antidepressants with example.
- b) Write down the chemical structure, IUPAC name and dosage forms – i) Frusemide ii) Propranolol.
- c) Discuss the various tests of impurities performed for pharmaceuticals.
- d) Define with examples (any two)- (a) Equivalence Point (b) Saline cathartics (c) Denture cleaners.
- e) Write down the molecular formula, synonym, pharmaceutical category and formulations of Ferrous sulphate and Aluminium hydroxide.
- f) Define and classify antibiotics depending on the basis of chemical structure.
- g) Give the chemical structure of – (i) Diazepam (ii) Ketoconazole (iii) Aspirin (iv) INH (v) Amoxycillin.
- h) Write short notes on (any one)- Sulphonamides OR Sedatives & Hypnotics.