JHARKHAND Rai University
RANCHI

Annual/Reappear (Year I) Examination May 2025

Programme: D. Pharm **Full Marks: 80**
Subject: Pharmaceutical Chemistry **Time: 3 Hrs.**
Subject Code: ER20-12T
Enrolment No: _____

Section I

1. Objective type questions. Answer all questions. **1 x 20 = 20**

i. Which limit test is carried out using stannous chloride as a reducing agent?
a. Arsenic b. Iron c. Lead d. Sulphate

ii. Metformin belongs to which class of hypoglycemic agents?
a. Sulfonylureas b. Gliptins c. Biguanides d. Gliflozins

iii. Limit test for iron involves the use of:
a. Dithizone b. Diphenylthiocarbazone c. Thioglycolic acid d. sulphuric acid

iv. Which of the following is a potassium-sparing diuretic?
a. Furosemide b. Acetazolamide c. Spironolactone d. Mannitol

v. Which antifungal belongs to the azole class and has a triazole ring?
a. Ketoconazole b. Fluconazole c. Amphotericin B d. Griseofulvin

vi. Which antibiotic belongs to the tetracycline class?
a. Doxycycline b. Azithromycin c. Amoxicillin d. Rifampicin

vii. Thiopental sodium is classified as a:
a. Barbiturate anesthetic b. Benzodiazepine sedative c. Opioid d. Local anesthetic

viii. Which of the following is NOT a sympathomimetic agent?
a. Epinephrine b. Dopamine c. Acetylcholine d. Phenylephrine

ix. Which assay method is used for Ascorbic acid?
a. Complexometry b. Iodometry c. Gravimetry d. UV spectroscopy

x. Which of the following antibiotics contains a macrolide ring?
a. Amoxicillin b. Ciprofloxacin c. Azithromycin d. Chloramphenicol

xi. Which titration method is used for the assay of Ferrous sulfate?
a. Iodometry b. Complexometry c. Redox titration d. Non-aqueous titration

xii. Which is an imidazole antifungal?
a. Ketoconazole b. Terbinafine c. Fluconazole d. Griseofulvin

xiii. Norfloxacin is chemically classified as:
a. Penicillin b. Cephalosporin c. Quinolone d. Tetracycline

xiv. Which drug is a first-line treatment for absence seizures?
a. Phenobarbital b. Ethosuximide c. Diazepam d. Phenytoin

xv. The functional group in Aspirin that contributes to its acidity is:
a. Alcohol b. Ester c. Carboxylic acid d. Amine

xvi. Which of the following is NOT used as a haematinic?
a Ferrous fumarate b. Ferrous sulphate c. Carbonyl iron d. Calcium carbonate

xvii. Which diuretic is used to treat acute pulmonary edema?
a. Mannitol b. Hydrochlorothiazide c. Furosemide d. Spironolactone

xviii. In iodometric titration, the endpoint is usually detected using:
a Methyl orange b. Phenolphthalein c. Starch indicator d. Potassium ferrocyanide

xix. Which of the following drug structures contains a thiazolidinedione ring?
a. Metformin b. Pioglitazone c. Glibenclamide d. Repaglinide

xx. Which of the following is classified as a Class IV antiarrhythmic agent?
a. Amiodarone b. Lidocaine c. Verapamil d. Propranolol

Section II

2. Short Answer type questions. Answer any ten. 10 x 3 = 30

a. Write about acid-base titration with an example.
b. Write the uses and storage conditions of ferrous sulphate and ferric ammonium citrate.
c. Draw the structure of Diclofenac sodium. Provide its chemical name and formulation.
d. Write pharmacological uses, and dosage forms of Phenytoin Sodium and Valproic acid.
e. Compare Ibuprofen and Aceclofenac in terms of structure, and class.
f. Write uses, structure, and dosage form of Ketoconazole and Fluconazole.
g. Draw the structure of Amlodipine. Mention its use and classification.
h. What are the pharmaceutical applications of hydrogen peroxide and boric acid?
i. Differentiate between accuracy and precision with examples.
j. Mention the structure and IUPAC name of Quetiapine. List its therapeutic class and use.
k. Mention indications, formulation types, and structure of Amoxicillin and Cloxacillin.

Section III

3. **Long Answer type questions. Answer any six. 6 x 5 = 30**

a. Describe the principle of non-aqueous titration. Name two drugs analyzed by this method.
b. Explain the nomenclature rules for heterocyclic compounds with any two examples.
c. Classify anti-arrhythmic and anti-anginal drugs with suitable structures and formulations.
d. Discuss the chemical structure, uses, and stability of Celecoxib and Piroxicam.
e. Write a short note on the composition, chemical action, and storage of topical agents.
f. Write in detail the principle and procedure of limit tests for chlorides, sulphates, iron, and arsenic.
g. Write the classification of NSAIDs. Describe the structure and mechanism of action of Diclofenac and Paracetamol.

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