

Roll No. 212604124045.

**2041172(041)**

**D. Pharmacy (First Year)**  
**EXAMINATION, April-May, 2025**

**(Scheme : PCI)**

**(Branch : Pharmacy)**

**PHARMACEUTICAL CHEMISTRY**

**Time : Three Hours ] [ Maximum Marks : 80**

**Note : This question paper contains three Parts.**

- (i) Part I contains 20 multiple choice questions. Each question carries 1 mark. All questions are compulsory.
- (ii) Part II contains 11 short answer type questions. Each question carries 3 marks. Attempt any *ten* questions.
- (iii) Part III contains 7 long answer type questions. Each question carries 5 marks. Attempt any *six* questions.

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Part—I

(Multiple Choice Questions)

Note : Attempt all questions. Each question carries 1 mark.  $20 \times 1 = 20$

1. The study of a drug with respect of its molecules and structure is called ..... Chemistry.  
(a) Environmental  
(b) Pharmaceutical  
(c) Electrical  
(d) None of the above
2. Which is the major source of impurities in pharmaceutical manufacturing ?  
(a) Raw material  
(b) Processing and product development  
(c) Environment  
(d) All of the above

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3. Name the apparatus which is used for limit test of arsenic test :  
(a) Nessler cylinder  
(b) Flame photometer  
(c) Gutzeit apparatuses  
(d) None of the above
4. Ferric ammonium citrate is used for ..... as a compound.  
(a) Expectorant  
(b) Haematinics  
(c) Acid neutralizer  
(d) Base neutralizer
5. The concept of acid and base titration is based on a .....  
(a) Complexometric reaction  
(b) Neutralization reaction  
(c) Non-aqueous reaction  
(d) None of the above

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6. Another name of nitrous oxide gas is :
- (a) Tear gas
  - (b) Laughing gas
  - (c) Methane gas
  - (d) Oxygen gas
7. Structure of pyrrole contain heteroatom that is :
- (a) N-H
  - (b) H-H
  - (c) C-C
  - (d) C-O-C
8. Example of short acting anesthesia is :
- (a) Thiopental sodium
  - (b) Ketamine
  - (c) Propofol
  - (d) Xylocaine

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9. The pharmaceutical agent which is used to treat seizure or epilepsy is called as :
- (a) Anticoagulant
  - (b) Anticonvulsant
  - (c) Antipyretic
  - (d) Antimicrobial
10. Example of a drug acting on sympathomimetic nervous system is :
- (a) Norepinephrine
  - (b) Phenylephrine
  - (c) Quinidine sulphate
  - (d) None of the above
11. Which drug is common as a cholinergic blocker agent ?
- (a) Atropin
  - (b) Clonidine
  - (c) Tropicamide
  - (d) None of the above

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12. Drug which acts as loop diuretic is :
- (a) metozolamide
  - (b) benzthiazide
  - (c) sipronolactone
  - (d) acetazolamide
13. Ciprofloxacin, moxifloxacin are antibiotics used for the treatment of .....
- (a) Bacterial infection
  - (b) Viral infection
  - (c) Anticancer
  - (d) None of the above
14. Dapsone is a combination of :
- (a) Bimolecules of 4-aminobenzene
  - (b) Sulphur ring
  - (c) Aniline
  - (d) All of the above

15. Example of cyclic ring antibiotics is :
- (a) Ciprofloxacin
  - (b) Tetracycline
  - (c) Macrolides
  - (d) None of the above
16. Drug which is a broad spectrum antibiotic :
- (a) Cephalosporin
  - (b) Tetracycline
  - (c) Both (a) and (b)
  - (d) None of the above
17. Antiviral drug acyclovin acts on ..... mode of action.
- (a) Convert action of viral thymidine kinase diphosphate by guanylate kinase
  - (b) Protein precipitation
  - (c) DNA modulation
  - (d) None of the above

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18. Glass tube which is used to test the limit test of Iron, sulphate and choride is :

- (a) Nessler cylinder
- (b) Hydrogen test tube
- (c) Wintrob tube
- (d) Gutzeit apparatus

19. Stage when cancer cell starts get migrating toward blood stream :

- (a) Metastasis
- (b) Clotting
- (c) Fibrosis
- (d) None of the above

20. Vincristine and Vinblastine are the drugs used against :

- (a) Antihypertensive
- (b) Anticancer
- (c) Antipsychotic
- (d) None of the above

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Part-II

(Short Answer Type Questions)

Note : Attempt any *ten* questions out of eleven questions. Each question carries 3 marks. 10×3=30

1. What are the scope and objectives of Pharmaceutical Chemistry ?
2. Define Accuracy and Precision and its significant figures.

Or

- What are the various sources of impurities and effects in pharmaceutical preparation ?
3. What do you understand by Acid-Base titration ?

Or

What is limit test ? Write down the principle and reaction of limit test of iron.

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4. What is the principle of Gravimetric Analysis ?
5. Define antacid. Give its classification and method of preparation of calcium carbonate.

Or

What are dental products ? Give the method of preparation of sodium fluoride.

6. Define organic chemistry. Give its classification in short.
7. Give short introduction about heterocyclic compound with suitable example.
8. Enlist in short about the drug acting in CNS.
9. What are sedative and hypnotics ?
10. Give the definition of Antidepressant, and Anticonvulsant with example of selected drugs.
11. What are the various methods of gravimetric analysis ?

Part-III

(Long Answer Type Questions)

Note : Attempt any *six* questions out of seven questions. Each question carries 5 marks.  $6 \times 5 = 30$

1. Write in detail about the drug act on ANS along with its chemistry.
2. What are CVS drugs ? Explain its classification with chemistry of quinidine sulphate.
3. What are diuretics ? Give its classification and explain the chemistry of Acetazolamide and Spironolactone.
4. What are hypoglycemic agents ? Give in detail chemistry of insulin and metformin.
5. What are Analgesic and Anti-inflammatory agents ? Give the detailed classification of NSAIDs drugs.

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6. What are Anti-infective agents ? Give its classification with suitable example.
7. What are antibiotics ? Write the chemistry of penicillin antibiotics.

*Or*

What are anticancer agents ? Give the classification of anticancer agents with suitable example of drugs.

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