

Code No. : 5416

Sub. Code : ZCHE 21

M.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024

Second Semester

Chemistry – Core

Elective – MEDICINAL CHEMISTRY

(For those who joined in July 2021-2022 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Loading capacity of mucoadhesive drug delivery system is _____.
(a) poor
(b) high
(c) medium
(d) very poor

6. Which of the following was the first widely used antiseptic and disinfectant?
(a) Alcohol (b) Phenol
(c) Chlorine (d) Iodine
7. A good local anesthetic agent should not cause _____.
(a) Vasodilation
(b) Systemic toxicity
(c) Fast on set and long duration of action
(d) Local irritation and tissue damage
8. Which drug inhibits the effect of anticoagulants?
(a) NSAIDs
(b) Barbiturates
(c) Rifampicin
(d) Both barbiturates and rifampicin
9. Which factor increases the efficacy of antineoplastic drugs?
(a) Additional immunotherapy
(b) Drug-provoked mutations
(c) Decrease in tumor blood supply
(d) Tumor cells acquire natural insensitivities

2. What does pharmacokinetics include?
(a) Interaction of Substances
(b) Excretion of substances
(c) Mechanisms of d-g action
(d) Localization of d-g action
3. Which of the following is incorrect regarding receptors?
(a) They have constant shape
(b) They are proteins
(c) The shape of receptors binding site changes to fit the messenger
(d) They are present in the cell membrane
4. Which of the following is a chemical messenger?
(a) Nerve
(b) Hormone
(c) Neurotransmitter
(d) Both hormone and neurotransmitter
5. Which of the following statements is incorrect regarding gram negative bacteria?
(a) Cell wall has a thin peptidoglycan layer
(b) Cell wall lipid content is very low
(c) Lipopolysaccharide layer is present
(d) All of these

10. Waiting chamber of heart is _____.
(a) Left auricle (b) Right auricle
(c) Right ventricle (d) Left ventricle

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Narrate the concept of bioisosterism.
Or
(b) Give an account on rigid docking.
12. (a) Give an account on elementary treatment of drug receptor interactions.
Or
(b) Write a brief note on development of new drugs.
13. (a) Write briefly on Gram-positive and Gram-negative bacteria.
Or
(b) Narrate the classification and uses of antibiotics.

14. (a) How will you synthesis benzodiazepine?
Or
(b) Disucss the mechanism of mode of action of phenothiazines.

15. (a) Write a note on cardiovascular diseases.
Or
(b) Write briefly about recent developments in cancer chemotherapy.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) (i) Explain the elementary aspects of ADME.
(ii) What is meant by pharmacokinetics?
(iii) Define receptors.

Or

- (b) Write an account on :
(i) Carrier based drug delivery system.
(ii) Mucoadhesive drug delivery system.
(4+4)

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17. (a) Explain the structure Activity Relationship of morphine and penicillin.

Or

- (b) Write an account on :
(i) Free-Wilson analysis.
(ii) Hansch analysis.

18. (a) Give the synthesis of the following drugs:
(i) Penicillin G,
(ii) Ampicillin
(iii) Cephalosporin.

Or

- (b) Write the structure and mode of action of
(i) Fosfomycin
(ii) Ethambutol

19. (a) (i) Explain the synthesis of piperidimedione and diclofenac.
(ii) What are antimalarials? Give an example.

Or

- (b) Discuss the synthesis and mode of action of paracetamol and sulfonyl urea.

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20. (a) Describe the synthesis of cyclophosphamide and methyldopa.

Or

- (b) Write detail about role of alkylating agents and antimetabolites treatment of cancer.

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