

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5280

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Unique Paper Code : 3184000016

Name of the Paper : Pharmacological Science

Name of the Course : **GE - Biomedical Science (NEP-UGCF)**

Semester : VIII

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all
3. Question no. 1 is compulsory.
4. Attempt subparts of a question together.

Q1. (a) Define (Any Six)

(6x2=12)

- i. Orphan drugs
- ii. Proprietary Name
- iii. Bio-transformation
- iv. Half-life of drug
- v. Pharmacodynamic
- vi. Pre-systemic metabolism
- vii. Agonist

(b) Differentiate between (Any Three)

(3x4=12)

- i. Therapeutic window and Therapeutic Index
- ii. Intracellular and Membrane-bound receptors
- iii. Efficacy and Potency
- iv. Zero order and First order kinetics

(c) State True or False. Justify your answer. (Any Two)

(2x3=6)

- i. Brand names help in identifying the chemical composition of drugs.
- ii. Only free (unbound) drug is pharmacologically active.
- iii. Drugs given via enteral routes can be affected by gastric pH and food.

P.T.O.

Q2. Write mechanism of action and contraindications of (Any Three) (3x5=15)

- a. Diazepam
- b. Bethanecol
- c. Tolbutamide
- d. Isoprenaline

Q3. Write short note on

(3x5=15)

- a. Insulin
- b. NSAID
- c. HRT

Q4. (a) Discuss the classification of drug dosage forms according to their physical state. Give two examples from each category and mention a key point about their use or formulation.

(b) Explain the determinants for selecting a route of drug administration. Give the advantages and disadvantages of oral administration.

(c) Describe the relationship between urine pH and renal excretion of drugs. How does this affect acidic and basic drugs differently? Give examples. (5,5,5)

Q5. (a) Explain the major classes of macromolecular targets of drugs and their significance in pharmacology.

(b) Explain the pharmacological action of Amphotericin B and discuss the important adverse reactions associated with its administration.

(c) Discuss the significance of graded versus quantal dose-response curves in pharmacology, emphasizing the distinction between individual and population-level responses. (5,5,5)

Q6. (a) Describe antimicrobial therapy and discuss how bactericidal drugs differ from bacteriostatic drugs in their action.

(b) Explain the different phases of drug metabolism and their significance in pharmacology.

(c) Define adverse drug reaction (ADR) and discuss how pharmacovigilance helps in detecting, preventing, and managing ADRs. (5,5,5)