

**RAN-1903080203040031****M.Sc. (Organic Chemistry) (Sem.-III) Examination October - 2025****Organic Chemistry : Medicinal Chemistry-I (Paper-IV)****Time: 3 Hours]****[Total Marks: 70****સૂચના : / Instructions**

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right indicate full marks of the questions.

Seat No.:

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Student's Signature

- Q.1. Answer any three of the following: 18**
- Write down the importance of ADME based on pharmacokinetics. Write a short note on adsorption.
 - What is drug design? Explain in detail how a lead compound can be modified for maximum potency.
 - Enlist different kinds of phase-I and phase- II reactions. Explain the following:
 - Oxidative reactions
 - Reductive reactions.
 - Describe allosteric modulation. Explain the elementary treatment of enzyme stimulation.
- Q.2. Answer any three of the following: 18**
- How the general anaesthetics differ from local anaesthetics? Discuss the structural variation among the general anaesthetics.
 - Discuss the structure variation and mode of action of barbiturates used as sedatives and hypnotics.
 - Discuss the SAR of local anaesthetics containing an amide linkage. Give the structure variation among esters as local anaesthetics.
 - Give the synthesis and therapeutic uses of the following drugs:
 - Thiopental
 - Amobarbital
 - Diazepam
- Q.3. Answer any three of the following: 18**
- Describe the mechanism of action of pyrazolone and pyrazolidone derivatives as analgesic and antipyretic drugs.
 - Define narcotics and non-narcotics analgesics. Give the structural variation in morphine and its derivatives.
 - What are anti- inflammatory agents? Give the names of receptors associated with opioids. Explain the limitations of opioid receptors.
 - Give the synthesis and therapeutic uses of the following drugs:
 - Meclofenamate sodium
 - Ibuprofen
 - Oxybutazone.

Q.4. Answer any three of the following:

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- a. Enlist various parts of nephrons. Classify the diuretics. Give two examples and uses of loop diuretics and osmotic pressure diuretics.
 - b. Explain the term aquaretic diuretics. Discuss calcium channel blockers as antiarrhythmic agents. Discuss structure variation in dihydropyridines.
 - c. What are primary and secondary blood pressure? Give the classification of antihypertensive drug giving suitable examples.
 - d. Give the synthesis and therapeutic uses of the following:
 - i. Methyldopa
 - ii. Acetazolamide
 - iii. Atenolol.
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