

**RAN-2003080204040031**

M. Sc. (Sem. - IV) Examination September - 2025
Organic Chemistry (Paper - IV) Medicinal Chemistry - II

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) All questions are compulsory. (3) Figures to the right indicate full marks of the question.	Seat No.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

Q. 1. Answer any three of the following. (18)

- a. Enlist the different names of microorganisms. Give the structure variation in cephalosporin antibiotics.
- b. Explain the terms *in vivo* and *in vitro* activity. Describe the SAR of penicillin and the structure variation of tetracyclines.
- c. Explain macrolide antibiotics. Elaborate Chloramphenicol and Erythromycin giving a suitable structures.
- d. What are aminoglycoside antibiotics? Classify them. Discuss any two of them.

Q. 2. Answer any three of the following. (18)

- a. What is histamine? Give the structure variation of aminoalkylethers and phenothiazine derivatives.
- b. Enlist the classification of the sulphonamides. Discuss the - classification of sulphonamides on the basis of chemical structure with examples.
- c. Classify the antituberculosis drug with examples. Explain the mode of action of antituberculosis agents by inhibiting mycolic acid.
- d. Give the synthesis and therapeutic uses of any two of the following:
 - i. Pyriline
 - ii. Pyrazinamide
 - iii. Sulfalene

Q. 3. Answer any three of the following. (18)

- a. Explain the 8-amino quinolines and 4-amino quinolines as antimalarial and discuss their SAR.
- b. What is metastasis? State the characteristics of malignant tumor. Give an account on the alkylating agent used in the treatment of cancer.
- c. Define the antimalarial drugs. Explain the life cycle of Plasmodium.
- d. Give the synthesis and therapeutic uses of any two of the following:
 - i. Pyrimethamine
 - ii. Cytarabine
 - iii. Primaquine

Q. 4. Answer any three of the following. (16)

- a. What is a hepatitis C virus? Discuss various stages of the life cycle of a virus.
 - b. Give the classification of the antiviral agents used to treat viral infections other than HIV infection. Describe the advantages of Interferons as antiviral agents.
 - c. Write the characteristics of viruses. Discuss a brief account of nucleosides and nucleotides used as antiviral agents.
 - d. Give the synthesis and therapeutic uses of the following:
 - i. Acyclovir
 - ii. Amantadine
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