

Question Paper

Exam Date & Time: 11-May-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Instructions: Answer ALL questions.

Medicinal Chemistry [PCH 3.5T-S3]

Marks: 70

Duration: 180 mins.

Section A

Answer all the questions.

Long Answer Questions (3 x 10 marks = 30 marks)

- 1) 1A. Write 4 salient structural features for the following: (10)
amino quinolines as antimalarial agents,
benzimidazoles as anthelmintic agents,
fluro quinolones as antibacterial agents 5M
1B. Outline the synthesis of pamaquine and mebendazole. Explain the strategies used in the design of antiviral drug. Write one structure each of reverse transcriptase inhibitor and Protease inhibitor. Outline the synthesis of amantadine. 5M
- 2) Classify and give examples for the following classes of drugs (10)
1. Anti-hypertensive drugs
2. Anti-arrhythmic drugs
3. Diuretic drugs. 6M
How do you synthesize Thiouracil and Verapamil? 4M
- 3) Classify cephalosporins by giving one structure under each generation. Write the chemistry of macrolide antibiotic. Outline the synthesis of chloramphenicol (10)
Classify DNA intercalators and Plant products as anti cancer agents. Write 2 structures under each class with their applications

Section B

Answer all the questions.

Short Answer Questions (6 x 5 marks = 30 marks)

- 4) Drawing the general structure, explain the SAR features of Carbonic anhydrase inhibitors. (5)
- 5) Outline the synthesis of clotrimazole, metronidazole and INH with their uses (5)
- 6) Mention the descriptors used in QSAR. Define prodrugs, combinatorial chemistry and radio contrasting agents (5)
- 7) What are antiseptics? How are they different from Disinfectants. Mention the role of nitro furans as antiseptics. Outline the synthesis of methylene blue and chloramine T (5)
- 8) Drawing the general structure, enlist the basic structural features of Statins. Write the structure of Mevastatin and give its mechanism of action. (5)
- 9) Classify Intestinal Sulpha drugs with their structure. Outline the synthesis of Sulphasalazine and tolnaftate (5)

Section C

Answer all the questions.

Give Reasons for the Following (5 x 2 marks = 10 marks)

- 10) Clavulanic acid is given in combination with Amoxicillin (2)

- 11) Oral dosage form of Insulin is not available (2)
- 12) Suramin is a drug of choice in trypanosomiasis (2)
- 13) Sotalol is used as anti-arrhythmic drug (2)
- 14) Antitubercular agents are basic in nature (2)

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