

Question Paper

Exam Date & Time: 29-Nov-2017 (02:00 PM - 05:00 PM)



MANIPAL UNIVERSITY

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017 PROGRAM: MPHARM SEMESTER 1

DATE: 29/11/2017

TIME: 2:00PM - 5:00PM

Advanced Organic Chemistry I [PCH-MPC102T]

Marks: 50

Duration: 180 mins.

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Discuss with mechanism Wittig & Horner-Emmons reaction. (5)
- 2) Give any one method of synthesis for the following heterocycles: (5)
 - a) Isoquinoline
 - b) benzopyran
- 3) Give the structures for the following IUPAC names. (5)
 - a) azetidine
 - b) 1,2-oxazole
 - c) 2-pyrone
 - d) 1,4-dihydroazine
 - e) dibenzo[b,e]pyridine
- 4) What is Ugi? Explain with mechanism. (5)
- 5) Explain the chemistry of enolates. (5)
- 6) Explain the various methods for protection of amino group. (5)
- 7) What are the strategies in synthetic planning? Explain. (5)
- 8) Discuss the stability of carbocations. (5)

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) What is aromaticity? Give the criteria for a molecule to exhibit aromaticity. (2)
 - A) What is the role of sodium metal and ammonia in Birch reduction? (2)
 - B) What is β -addition? Give an example. (2)
 - C) What is Lawesson's reagent? Give its synthetic applications (2)
 - D) Give two synthetic applications of Sodium hydride (2)

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**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017**

PROGRAM : MPHARM SEMESTER I

DATE : 01-12-2017

TIME : 2:00PM - 5:00PM

Advanced Medicinal Chemistry [PCH-MPC103T]

Marks: 50

Duration: 180 mins.

Answer the following (5 marks x 8 = 40 marks)

- 1) Explain the various theories proposed for drug receptor interactions. (5)
- 2) What are important properties that an ideal enzyme inhibitor should possess? (5)
- 3) List out the strategies necessary for a LEAD modification. Explain any three in detail. (5)
- 4) Enumerate the applications of prodrugs. (5)
- 5) Explain alteration of interatomic distance and bioisosteric replacement as tools in analogue design (5)
- 6) Discuss the solid phase technique in combinatorial synthesis (5)
- 7) What are peptidomimetics? Explain the incorporation of conformationally rigid analogues in peptidomimetic design (5)
- 8) How is chirality important in drug? Explain how geometrical isomer effects pharmacokinetics and pharmacodynamics properties of drugs (5)

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) Justify that Penicillin is a suicide inhibitor. (2)
- A) (2)
- B) What is Michaelis-Menton equation? Mention its significance. (2)
- C) Give an example of a rigid analogue in analogue design (2)
- D) Give an example of Peptidomimetic drug design by peptide bond isosteres (2)
- E) What are the applications of HTS? (2)

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Time: 04-Dec-2017 (02:00 PM - 05:00 PM)



MANIPAL UNIVERSITY

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017
PROGRAM : MPHARM SEMESTER I
DATE : 04-12-2017
TIME : 2:00PM - 5:00PM

Chemistry of Natural Products [PCH-MPC104T]

Marks: 50

Duration: 180 mins.

a

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Explain the rationale used in the development of synthetic and semi synthetic analogues from Natural leads of Morphine and Quinine. (5)
- 2) Discuss the structural elucidation of Atropine. (5)
- 3) Enlist 4 enzymes used in organic synthesis and Explain the role of any two enzymes (5)
- 4) Explain the general structural elucidation for flavonoids. (5)
- 5) Classify Eicosonoids and mention their therapeutic implications. (5)
- 6) Explain the chemistry of sterols and cardiac glycosides. (5)
- 7) Explain protein engineering with suitable example. Write the steps involved in PCR. (5)
- 8) Classify terpenoids with examples and discuss its isolation procedure. (5)

b

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) Write 2 structures of Macrolide antibiotics with their specific uses. (2)
 - A) (2)
 - B) Give 2 structures of diterpenoids with their specific uses. (2)
 - C) Write the advantages of II, III and VI generation cephalosporins over I generation Cephalosporins with suitable examples (2)
 - D) Classify alkaloids with suitable examples . (2)
 - E) Write salient features of sapogenin. (2)

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