

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, September 2019

Chemistry

CH 242(b) – ORGANIC CHEMISTRY – IV

(2016 Admission onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

Answer **any two** among (a), (b) and (c) from each question. Each question carries **2** marks.

1.
 - (a) What is Tebbes reagent? Give its significance.
 - (b) What are green solvents? Give one example.
 - (c) Explain the characteristic properties of organic zeolite.
2.
 - (a) Give the synthetic importance of cryptands.
 - (b) What is denaturation of protein?
 - (c) Suggest a method of preparation of organo aluminium compounds.
3.
 - (a) What is Taft equation? Explain the terms in it.
 - (b) Draw the structures of diazepam and sulphamethoxazole.
 - (c) How lipophilicity of a drug affects the bioavailability?



4. (a) State any two examples of polymer supported halogenating agents.
(b) Give any two advantages of using scavenger resins.
(c) What is the structural difference between cellulose and starch?
5. (a) Draw the structures of paracetamol, benzyl penicillin.
(b) What are biodegradable polymers? Give any two examples.
(c) What are protecting groups? Give any two examples of amino protecting group.

(10 × 2 = 20 Marks)

SECTION – B

Answer (a) or (b) of each question and each question carries 5 marks.

6. (a) Discuss the preparation and synthetic applications of Gilman reagent.
(b) What is a polymer supported reagent? Give any two examples. What are its advantages over conventional reagents?
7. (a) Illustrate Edman method of protein sequencing.
(b) Discuss the synthesis of diazepam.
8. (a) Explain the use of green solvents in organic synthesis.
(b) Illustrate the principle and application of sonication in organic synthesis.
9. (a) Calculate atom economy of a typical (i) aldol and (ii) Diels Alder reaction. Use simple example.
(b) Explain with a suitable example the use of Ziegler Natta catalyst in the synthesis of stereoregular polymers.

10. (a) Explain the following:

- (i) tweezers
- (ii) carcerands
- (iii) calixarenes

(b) Write a note on Shapiro reaction.

(5 × 5 = 25 Marks)

SECTION – C

Answer **any three** questions. Each question carries **10** marks.

- 11. How drugs are classified? Explain the synthesis of one example for each class.
- 12. Discuss briefly the types of interactions used in supramolecular chemistry and include one example for each.
- 13. What is SPPS? What are its advantages? Give a detailed account for obtaining the tripeptide Ala-Glu-Gly using SPPS.
- 14. What are the alternate energy sources and reaction media recommended currently on the basis of green chemistry principles.
- 15. What are Grignard reagents? Give the synthetic applications of Grignard Reagents.

(3 × 10 = 30 Marks)