29/3/22

Total No. of printed pages = 2

MPC 102 T

Roll No. of candidate | | | | | | | | | | |

2021

M.Pharm. 1st Semester End-Term Examination

(Regular)

Pharmaceutical Chemistry

ADVANCED ORGANIC CHEMISTRY — I

(New Regulation) (w.e.f 2017-18)

Full Marks – 75 Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *seven* from the rest.

1. Answer the following questions : (5 × 1 = 5)
   (a) Explain Friedal craft acylation with example.
   (b) What are the steps of free radical reaction?
   (c) Where Markovnikov's rule is applied give suitable example.
   (d) Differentiate mesomeric effect and inductive effect citing example.
   (e) Define synthon with example.

2. Explain the principle and application of retro synthesis in details. (10)

3. Differentiate E_1 and E_2 reaction citing suitable example and explaining mechanism. (10)

4. Write down the method of formation, stability and synthetic applications of Carbocations, carbanions and nitrenes. (10)

5. Write down the mechanism and synthetic application of following reactions- (4×2.5=10)
   (a) Mitsunobu reaction,
   (b) Mannich reaction,
   (c) Vilsmeyer-Haack Reaction
   (d) Shapiro and Suzuki reaction

[Turn over

6. What is the importance of the protective group in organic synthesis? Describe Protection for the hydroxyl group, including 1, 2-and 1, 3-diols, esters, cyclic acetals & ketals. (2+8=10)

7. Write down the application of Osmium Tetroxide, Titanium Chloride, Diazopropane, Diethyl Azodicarboxylate, Triphenylphosphine. (10)

8. Write two rearrangement reactions with mechanism and application. (5+5=10)

9. Explain SN^1 and SN^2 reaction stereochemically with example. Discuss Nucleophilic addition reaction citing example. (5+5=10)

10. Write down the Synthesis of the following drugs containing heterocylic nucleus: (4×2.5=10)

    (a) Ketoconazole

    (b) Celecoxib

    (c) Alprazolam

    (d) Chlorpromazine
