

Total Page: 1

PG (CBCS)
M.SC. Semester-IV Examination, 2021
CHEMISTRY
 PAPER: CEM-402
 (ADVANCED ORGANIC CHEMISTRY-III)

Full Marks: 40**Time: 2 Hours****Answer any FOUR questions from the following:****4X10=40**

1. What are Norrish Type I and Norrish Type II reactions? Discuss with examples.
Discuss the essential criteria for photochemical reactions. 4+4+2
2. Draw the Jablonski diagram? What is the use of this diagram? What is Di-Pi
methanerearrangement? 4+3+3
3. What are antibiotics? Write the structure and biological activity of Penicillin G,
Cephalosporin and streptomycin? 10
4. Write the structures and effects on human body of Vitamin A1, B1, C and K. 10
5. What are the main features of Watson and Crick model of DNA? Give the basic
structure of RNA. 5+5
6. Explain the following observations: 2X5
 - a. The reactivity order towards electrophilic substitution reaction pyrrole > Furan > Thiophene.
 - b. Pyrrole undergoes electrophilic substitution at the position C-2.
 - c. Pyridine undergoes electrophilic substitution at the position C-3
 - d. The order of basicity of pyrrole, pyridine and piperidine follows the order: pyrrole < pyridine < piperidine
 - e. The aromaticity order of heterocyclic five-membered compounds are thiophene > pyrrole > furan.
7. Write notes on each of the following 2.5X4
 - (a) Hantzsch Pyridine synthesis, (b) Friedlander Quinoline synthesis (c) Bischler-Napieralski Isoquinoline synthesis (d) Compare the dipole moments of pyrrole and furan
8. What are Paal Knorr Furan synthesis and Hantzsch Pyrrole synthesis. Mention some
important biological activity of mono heterocyclic compounds. 3+3+4
