QP CODE: 25020356

25020356

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Sixth Semester

CORE COURSE - CH6CRT10 - ORGANIC CHEMISTRY - IV

Common for B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc Chemistry Model III Petrochemicals

2017 Admission Onwards

BE14AD2C

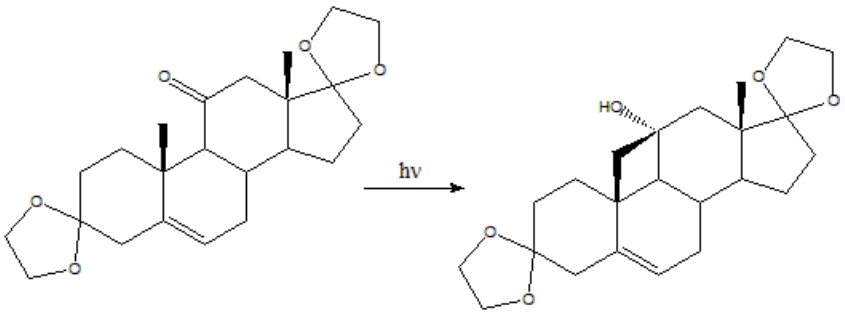
Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What is the hydrolysis product of citral?
2. What are waxes?
3. Give an example of an unsaturated fatty acid present in oils and fats.
4. What are hormones?Give one example.
5. Write the structure of the dipeptide:Gly-Ala.
6. What is Sanger's reagent?
7. What are enzyme inhibitors?
8. What are super molecules?
9. Identify the named reaction



10. What do you mean by bathochromic shift?
11. Which of the following alkene has high λ max : ethene or 1,3-butadiene? Why?

12. Define mass spectrum.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. What is the reaction which can establish the unsaturation in the structure of natural rubber?

14. Detail about the environmental aspects of detergent use.

15. Give a brief account of vitamin deficiency diseases.

16. What is Ninhydrin reagent? How is it used for identification of amino acids?Explain giving chemical equations.

17. Discuss the replication of DNA.

18. Write the mechanism of enzyme action.

19. Explain molecular recognition in DNA.

20. Draw and exlain Jablonki diagram.

21. Account for the following observations (i) Substitution of an amino group on the p-position of acetophenone shifts the C=O frequency 1685 cm-1 to 1652 cm-1 where as the attachment of nitro group at the p-position yeilds a C=O frequency of 1693 cm-1. (ii) An aliphatic aldehyde containing unconjugated double bond exhibits C=O and C=C streching at 1720-1740 cm-1 and near 1650 cm-1 respectively where as crotonaldehyde exhibits the corresponding absorptions at 1700 and 1630 cm-1.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Detail the synthesis of nicotine from N-methyl-2-pyrrolidone.

23. Give an account of the primary and secondary structure of proteins.

24. Explain the secondary structure of DNA.

25. An organic compound with molecular formula C9H10O2 exhibits following spectral data: UV : λ max= 268, 264, 262,257 nm,; IR data: 1745 (s), 1225 (s) 749 (s) and 697 (s) cm-1; NMR data: δ= 1.96 (3H, singlet); 5.00 (2H,singlet),7.22 (5H, singlet). Identify the organic compound.

(2×10=20)