24000598

QP CODE: 24000598

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, MARCH 2024

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

BFD3D4AE

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

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

1. what is the name of the trans isomer of citral ? what is its structure ?
2. What are derived lipids? give examples?
3. Give example of a simple fatty acid present in oils and fats.
4. Mention the physiological importance of cholesterol.
5. Write the name of the C-terminal residue in the given tripeptide: Gly-Ala-Phe.
6. Give any two examples for proteins with α -helix structure.
7. What are prosthetic groups?
8. What are super molecules.?
9. Give an example for a photochemical reaction.
10. The UV spectrum of acetone shows two peaks at (i) λ max= 280 nm, ε max 15 and (ii) λ max= 190 nm, ε max =100. Identify the electronic transition responsible for both peaks.
11. In the case of stillbene, for which isomer π to π* transition occurs at a higher wavelength and higher extinction coefficient and why?
12. An organic compound with molecular formula C_5H_{12} exhibits only one signal in their ^1H NMR. Identify the compound and give its structural formula.

(10×1=10)

Part B

*Answer any **six** questions.*

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

13. What are the general classification methods of alkaloids?

14. Explain the chemistry of removing dirt by soaps?

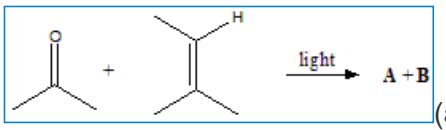
15. Write the structure and biochemical functions of Vitamin B6.

16. Discuss in brief any one method used for the C-terminal amino acid determination in proteins.

17. Write the differences between DNA and RNA.

18. Write a note on enzyme inhibitors

19. Explain molecular recognition in DNA

20. 

(a) Draw the mechanism. (b) Predict the products **A** and **B**.

21. An organic compound with molecular formula C6H12O exhibits following spectral data : IR: 1715 cm-1 . 1H NMR data :δ= 1.0 (9H,singlet); 2.0 (3H,singlet). Identify the An organic compound with molecular formula C4H8O exhibits following spectral data : UV: λ max=275nm, ε max=17; IR: 2941-2857(m), 1715(s), 1460(m) cm-1. 1H NMR data :δ= 2.42 (2H, quartet); 2.12 (3H,singlet); 1.07 (3H, triplet). Determine the structure of the compound.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain the vulcanization technique? What structural changes can be made to natural rubber by this technique

23. Writ a note on the physical and chemical properties of amino acids.

24. Write a note on the important functions of nucleic acids.

25. (i) Define chemical shift. Explain various the various factors which affects chemical shift.
(ii) How would you distinguish acetaldehyde and acetone using 1H NMR spectroscopy.

(2×10=20)