



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) $\lambda_{\text{max}} = 280 \text{ nm}$, $\epsilon_{\text{max}} = 15$ and (ii) $\lambda_{\text{max}} = 190 \text{ nm}$, $\epsilon_{\text{max}} = 100$. Identify the electronic transition responsible for both peaks.
11. In the case of stilbene, 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)



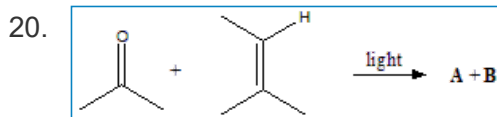


Part B

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



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

21. An organic compound with molecular formula $C_6H_{12}O$ exhibits following spectral data :
IR: 1715 cm^{-1} . ^1H NMR data : $\delta = 1.0$ (9H,singlet); 2.0 (3H,singlet). Identify the An organic compound with molecular formula C_4H_8O exhibits following spectral data : UV: $\lambda_{\text{max}} = 275\text{nm}$, $\epsilon_{\text{max}} = 17$; IR: $2941\text{--}2857(\text{m})$, $1715(\text{s})$, $1460(\text{m})\text{ cm}^{-1}$. ^1H NMR data : $\delta = 2.42$ (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)

