



23105133

QP CODE: 23105133

Reg No : .....

Name : .....

**B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,  
MARCH 2023**

**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

D2B62C29

Time: 3 Hours

Max. Marks : 60

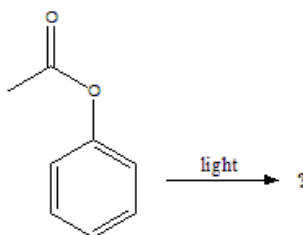
**Part A**

*Answer any **ten** questions.*

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

1. Write the structure of isoprene.
2. What are simple lipids? Give examples?
3. What fatty acid is present in butter?
4. Draw the structure of Vitamin A.
5. Give any two examples for essential amino acids.
6. What type of linkages are responsible for the formation of  $\alpha$  -helix?
7. Name one enzyme deficiency disease.
8. What are molecular receptors?

9.



Predict the product.





10. Cis-1,2-dichloroethylene is IR active with respect to C=C vibrations where as trans-1,2-dichloroethylene is not. Why?
11. Which region of IR spectrum constitutes finger print region?
12. Define chemical shift.

(10×1=10)

### Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Establish natural rubber as a polymer of isoprene units.
14. Explain the detergent action of soaps.
15. What are hormones? Explain their physiological importance.
16. Write the different steps involved in the synthesis of a tripeptide having three different amino acid units.
17. Discuss the replication of DNA.
18. Explain the classification of enzymes.
19. Explain molecular recognition in DNA.
20. Draw and explain Jablonski diagram.
21. A compound having molecular formula  $C_{10}H_{14}$  exhibits following  $^1H$  NMR data : (i)  $\delta = 0.88$  (9H, singlet) ; (ii)  $\delta = 7.28$  (5H, singlet). Assign the structural formula of the compound and explain the NMR data.

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **10** marks.

22. How was the structure of Nicotine recognized?
23. Explain the different end group analyses used for the determination of primary structure of proteins.





24. Discuss the general structure of nucleic acids.
25. (a) What are the different types of electronic transitions observed in organic compounds?  
(b) Explain the variation of  $\lambda_{\text{max}}$  in the following compounds:  $\text{CH}_3\text{Cl}$ ,  $\lambda_{\text{max}} = 173\text{nm}$ ,  
 $\text{CH}_3\text{Br}$   $\lambda_{\text{max}} = 204\text{nm}$ ,  $\text{CH}_3\text{I}$ ,  $\lambda_{\text{max}} = 258\text{ nm}$ . (c) State and explain Beer- Lambert's law.
- (2×10=20)

