

2316

240

Class – B.Sc. III, Sem VI
Subject – Organic Chemistry
Paper –Organic Chemistry

Time Allowed : 3 Hours

Maximum Marks : 35

PART-A

Note:– Attempt All questions. Each question carries one mark.

1. Which organosulphur compounds are responsible for the odour of freshly chopped onions and garlic?
2. What are the condensation polymers?
3. What do α -, D and (+) in the name of α - D (+) -glucose indicate?
4. Which property of glucose is not explained by open chain structure?
5. What are enamines and how are they formed?
6. Suggest a commonly used method for the synthesis of 1, 3 dithiane itself.
7. What changes in U.V. spectrum of a compound are expected on increasing the conjugation in the compound?
8. What is meant by shielding of a proton?

PART-B

Note:– Attempt Two questions from each section. Each question carries 4.5 marks.

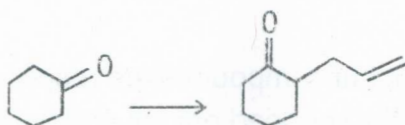
SECTION-I

9. (a) Using dimethyl malonate how will you prepare the following

(i) Cyclobutane Carboxylic acid

(ii) 3-ketobutanoic acid

(b) Complete the following interconversion giving mechanism



3, 1½

10. (a) How are sulphonamides prepared? Explain their acidic character.

(b) Convert acetanilide into sulphaguanidine.

(c) Out of ethanol and ethanethiol which is more acidic and why?

11. (a) Describe the preparation and uses of

(i) Buna - S (ii) Neoprene (iii) Buna - N

(b) Write a note on biodegradable polymers. 3, 1½

SECTION-II

12. (a) Describe the Killiani Fischer synthesis for lengthening the carbon chain of aldoses by one carbon atom.

(b) What are reducing and non reducing sugars? Give examples. 3, 1½

13. (a) Describe the term mutarotation. Explain why an aqueous solution of α -D(+), β -D(+)glucose shows mutarotation but that α - and β -methyl glucoside does not.
- (b) Why do glucose and fructose form the same osazone? 3, 1½
14. (a) Give open chain structure of D(+) glucose along with evidence in its favour.
- (b) What is the structural difference between starch and cellulose? 3, 1½

SECTION-III

15. (a) The molar extinction coefficient of $n \rightarrow \pi^*$ transition is low ($< 10^2$) while that of $\pi \rightarrow \pi^*$ transition is high ($10^4 - 10^5$). Explain.
- (b) Azobenzene is orange red coloured compound but hydrazo-benzene is colourless. Explain. 3, 1½
16. (a) How many types of equivalent protons are present in dimethyl ether?
- (b) What is coupling constant? What are its units and what is its significance? 1½, 3
17. (a) Why protons of benzene are deshielded while for acetylene are shielded?
- (b) An organic compound has molecular formula $C_9H_{11}Br$. The compound upon NMR analysis gave following data :
- (i) Multiplet τ 7.85 (2H)

(ii) Triplet τ 7.25 (2H)

(iii) Triplet 6.62 (2H)

(iv) Singlet 2.78 (5H)

Predict the structure of the compound.

1½, 3
