

Organic
Chemistry

XK (II) - Ch (7)

(2)

2012-14
(Second Semester)

Full Marks : 80

Time : 3 hours

The figures in the right-hand margin indicate marks

Answer four questions including Question 1
which is compulsory

1. Explain the following : 4×5
- (a) Furanose form is less stable than pyranose form of monosaccharide.
- (b) 2-Amino sugars do not give Molisch test.
- (c) Amino acids are amphoteric.
- (d) α -Terpineol is optically active.
2. (a) What are α -amino acids? How are they related to proteins? 8
- (b) Draw structural formula for each of the following peptides and indicate the C-terminal and N-terminal amino acids in these peptides : 4×3
- (i) Gly-Ser-Phe-Gly

(ii) Pro-Leu-Asp-Ala

(iii) Glu-Ala-Gly

(iv) Phe-Ala-Gly.

3. (a) ^{Clear} What products would be obtained if (+) maltose itself were subjected to methylation and hydrolysis? What would this tell us about structure of (+) maltose? 14
- (b) Show that glucose and mannose are epimers. 6
4. (a) ^{Clear} What are nucleosides and nucleotides? What are structural differences between RNA and DNA? 4+10
- (b) Describe the biological significance of nucleic acids. 6
5. (a) What are fatty acids and lipids? Explain with one example to each. 4×2
- (b) Explain the metabolism of lipids. 12
6. (a) What are alkaloids and how are they classified? What is Herzig-Meyer method of showing the presence of N-methyl groups? 3+5+4

(3)

clear (b) Discuss the structure of papavarine. 8

7. (a) What are terpenes? How are they classified? Write and explain 'Isoprene rule' with example. 3+4+5

clear (b) Discuss the structure of camphor. 8

8. (a) Discuss the different structures of RNA. 10

clear (b) Explain the role of RNA in protein synthesis with suitable examples. 10
