

Question Paper

Exam Date & Time: 01-Jun-2018 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES
IV SEMESTER B.S. DEGREE MAKE-UP EXAMINATION-MAY/JUNE 2018

DATE: 1 JUNE 2018

TIME: 9.30 AM TO 12.30 PM

Biochemistry [CH 241]

Marks: 100

Duration: 180 mins.

Answer ANY FIVE full Questions.

Missing data, if any, may be suitably assumed

- 1) Convert the Fischer projection of the monosaccharide D-glucose to a Haworth projection with a 6-membered ring and the anomeric carbon in the β -configuration (6)
 - A)
 - B) Name the three different polymers of glucose (with α -1,4 glycosidic linkage) and brief their properties (6)
 - C) What is the common disaccharide repeat obtained from these polysaccharides (b)? Draw its structure and mention whether it is reducing or non-reducing? Is this polysaccharides digestible by humans? Why? Or why not? (8)
- 2) Describe about mutarotation with an example (6)
 - A)
 - B) Draw the structure of sucrose and explain why it is not a reducing sugar? (6)
 - C) Explain the different type of linkages among monomeric units of carbohydrates and their biochemical importance (8)
- 3) List out the characteristics of a peptide bond (6)
 - A)
 - B) Brief about the essential amino acids and their importance (6)
 - C) Write an account on simple, conjugated and derived proteins (8)
- 4) Describe about (i) saturated (ii) unsaturated and (iii) cyclic fatty acids with examples. (10)
 - A)
 - B) Draw and describe the sterols of biological importance (10)
- 5) Write an account on simple, conjugated and derived lipids (10)

- A)
B) Differentiate the structures of DNA and RNA with a neat sketch (10)
- 6) Calculate and show all possible stereoisomers of D-glucose (10)
- A)
B) Sketch the structure of ATP and list out its biological significance (10)
- 7) Describe the functions of Zinc, Molybdenum, Cobalt, Fluoride and Selenium (10)
- A)
B) Describe the classification, absorption and regulation of minerals in human (10)
- 8) Draw the structure of porphyrin and list out the properties (10)
- A)
B) List out the source, properties and importance of vitamins (10)

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