



BR-1303

Seat No. _____

B. Sc. (Sem. II) Examination

March / April - 2014

Biotechnology : Paper - CBT - II

(Molecules of Life)

Time : 3 Hours]

[Total Marks : 70

- 1 MCQ (Write any ten) 10
- (1) The bond angle of water is
(a) 104.5° (b) 109°
(c) 100° (d) 110.5°
 - (2) The H^{+} ion present in a solution is the measure of
(a) acidity (b) basicity
(c) alkalinity (d) None of these
 - (3) The ratio of $[HCO_3^-]/[H_2CO_3]$ required for the pH blood plasma to remain 7.4 is
(a) 1:2 (b) 2:1
(c) 1:20 (d) 20:1
 - (4) Which bond is present between $COOH$ & NH_2 of two amino acid of protein
(a) glycosidic (b) peptide
(c) H-bond (d) phosphodiester
 - (5) Which vitamin is called yellow enzyme
(a) Vit B_1 (b) Vit B_2
(c) Vit B_3 (d) Vit B_5
 - (6) Which hormonal deficiency produce pellagra
(a) Vit B_2 (b) Vit B_6
(c) Vit K (d) Vit C
 - (7) Which of the following form clover leaf structure
(a) t-RNA (b) r-RNA
(c) m-RNA (d) DNA

- (8) _____ is the formula of Ribose.
- $C_5H_{10}O_5$
 - $C_6H_{12}O_6$
 - $C_7H_{14}O_7$
 - None of the above
- (9) Which of these is sulfur containing amino acid.
- Lysine
 - Proline
 - Cystein
 - Tryptophan
- (10) Which of the following is reducing sugar
- Glucose
 - Sucrose
 - Both of these
 - None of these
- (11) Which of the following sugar is present in DNA
- Xylose
 - Hexose
 - Ribose
 - Ribulose

2 Do as directed (Any ten)

10

- Define reducing sugar with example
- Define pH and pka
- Define essential aminoacid with example
- Give examples of lipid soluble vitamine
- Give two examples of saturated fatty acids
- Give the fullform of MUFA & PUFA
- Write any two difference between DNA and RNA
- Differentiate nucleotide & nucleoside
- Give example of biomolecules containing co-ordinate or dative bond.
- Justify: " In Giant redwoods water rises about 100 meters above the ground against gravity without motor."
- What is buffer? Give examples.
- Differentiate between starch & cellulose

3 Write short note on: (Any four) 32

- (1) Discuss Biological Buffers.
- (2) What is bond ? Discuss various types of bonds
- (3) Describe the structure of DNA
- (4) Write classification of aminoacids
- (5) Write about fisher and Haworth projection of carbohydrate
- (6) Write about polysaccharide & importance of carbohydrate
- (7) Write about Fat-soluble vitamins

4 Explain in detail (Any two) 18

- (1) Properties of water
 - (2) Classification of Lipid
 - (3) Write a note on RNA
 - (4) Discuss classificatoin of carbohydrate in detail (with monosaccaride classification).
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