SEAT No.

No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY

B.Sc. - III Semester Examination, 2018

Subject Code: US03CBCH01

Title: Biochemistry of Biomolecules-1

| Date: 24/11/18, Saturday Time: 0 Q1. Choose the correct option and write it in the answer sheet: | | me: 02.00 to 05.00 PM Total Marks: 70 | |
|--|--------------------------------------|--|-------------------|
| | | t _{ir} . | [10] |
| 1. Which is the repeating monosa | ccharide unit of glycogen? | | |
| a) α-D-glucose | b) β-D-glucose | | |
| c) α-D-galactose | d) β-D-galactose | | |
| 2. Which of these carbohydrates of | loes not react with mineral acid? | • | |
| a) Ribose | b) Glyceraldehyde | | |
| c) Lactose | d) Glucose | | |
| 3. Invert sugar formed by hydroly | sis of sucrose is solution | on: | |
| a) Laevorotatory | b) Dextrorotatory | | • |
| c) Racemic mixture | d) Optically inactive | | |
| 4. Which of these amino acids do | es not have an asymmetric carbon | ? | |
| a) Glycine | b) Proline | | |
| c) Alanine | d) Serine | | 3 * ⁷⁴ |
| 5. Which amino acid produces ye | llow color with ninhydrin reagent | ? | |
| a) Valine | b) Phenylalanine | • | |
| c) Proline | d) Leucine | | |
| 6. Which of these bases is not a p | art of DNA? | | |
| a) Adenine | b) Thymine | | |
| c) Uracil | d) Guanine | | |
| 7. How many rings are present in | a purine base? | | |
| a) One | b) Two | | |
| c) Three | c) Four | • • | |
| 8. Which one of these bonds is n | ot present in the structure of DNA | ? | |
| a) Phosphodiester bond | b) Peptide bond | | |
| Glycosidic bond | d) Hydrogen bond | | |
| 9. Which mineral is required for | transmission of nerve impulse? | | |
| a) Potassium | b) Iodine | | |
| ; c) Iron | d) Calcium | , | |
| 10. În human body maximum ame | ount of iodine is present in | ; | |
| a) Liver | b) Thyroid gland | | |
| c) Pituitary gland | d) Adrenal Gland | 4 | |
| | ~ | | (PiTiO) |

| Q2. Answer the following (any ten): | | |
|--|-------|-------------|
| 1. What are enantiomers? Briefly explain with examples. | | [20] |
| 2. Discuss about optical activity in carbohydrates. | | |
| 3. Draw structure of: (i) α-D-glucopyranose (ii) β-D-fructofuranose | | |
| 4. Briefly discuss stereoisomerism in amino acids. | | |
| 5. Draw structure of: (i) Histidine (ii) Tyrosine | | |
| | | |
| 6. Briefly discuss reaction of amino acids with Sanger's reagent.7. What is Chargaff's rule? | | |
| 8. What is Tm value with reference to DNA? | | |
| 9. Write about Z- DNA. | | |
| 10. Give classification of minerals with examples. | | |
| 11. Write food sources and functions of jodine. | | |
| | | |
| 12. What are the functions of chlorine in body? | | |
| | | |
| Q3. A. Write a note on structure and importance of Lactose. | | TO 813 |
| | | [05] |
| B. Discuss mutarotation in carbohydrates with example. | | [05] |
| OR | | |
| Q3. A. Write a note on structure and importance of Sucrose. | | [05] |
| B. Discuss reaction of carbohydrates with dilute alkali. | | [05] |
| | | |
| Od A Discover combatevia action and in 1 41 II C | | |
| Q4. A. Discuss amphoteric nature and isoelectric pH of amino acids. | | [05] |
| B. Discuss classification of amino acids based on polarity. | | [05] |
| OR | | |
| Q4. A. Draw titration curve of Glycine and write its main features. | | [05] |
| B. Write short notes on: (i) Essential amino acids (ii) Amide formation | | [05] |
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| | | |
| Q5. A. Write a note on pyrimidine nitrogenous bases. | | [05] |
| B. How is phosphodiester bond formed? | | [05] |
| OR | | |
| Q5. A. Draw double helical structure of DNA and write its characteristics. | | [05] |
| B. What is meant by COT value? Explain. | | [05] |
| | | [05] |
| | 11 4 | |
| Q6. A. Discuss biochemical functions of calcium. | | [AZ] |
| B. Write a note on food sources, RDA and functions of Iron. | 10.45 | [05] |
| The complete of the complete o | • | [05] |
| OR | | |
| Q6. A. Write a note on food sources, RDA and functions of sodium. | | [05] |
| B. Write a note on RDA and biochemical functions of Phosphorus. | | [05] |
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