

[A-24]

SEAT No. _____

No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY

S.Y. B.Sc.

III Semester Examination-2018

Saturday, 24th November

02.00 p.m. to 05.00 p.m.

Basic Biochemistry: US03CBCE01

(2010 BATCH)

Total Marks: 70

Q1. Choose the correct option and write in the answer sheet:

[10]

- 1) Which of these is a non reducing sugar?
a) Glucose b) Maltose c) Sucrose d) Fructose
- 2) Which of these is a hexose sugar?
a) Glyceraldehyde b) Fructose c) Ribose d) Lactose
- 3) The bond that joins the monosaccharides is _____:
a) Hydrogen bond b) Ester bond c) Glycosidic bond d) Peptide bond
- 4) Which of these amino acid does not have a chiral carbon?
a) Glycine b) Leucine c) Serine d) Alanine
- 5) Which of these is a basic amino acid?
a) Lysine b) Leucine c) Valine d) Proline
- 6) A nucleoside is a combination of nitrogenous base and _____:
a) Phosphate b) Pentose sugar c) Fatty acid d) Amino acid
- 7) Which of these bonds joins the two bases in double helical structure of DNA.
a) Peptide bond b) Phosphodiester bond
c) Disulphide bond d) Hydrogen bond
- 8) Cynocobalamine is the chemical name of _____:
a) Vitamin B₁ b) Vitamin B₁₂ c) Vitamin B₂ d) Vitamin B₅
- 9) The mineral not required for acid-base balance is _____:
a) Manganese b) Chlorine c) Sodium d) Potassium
- 10) Which of these minerals is essential for bone development?
a) Sodium b) Potassium c) Iron d) Calcium

Q2. Answer the following (any six):

[12]

- 1) Define: (i) Chiral carbon (ii) Epimers
- 2) Draw structure of (i) α -D Glucopyranose (ii) D-glyceraldehyde
- 3) What are essential amino acids?
- 4) Draw structure of AMP and dCMP
- 5) Write a short note on pentose sugar present in nucleic acids.
- 6) Define: (i) Enthalpy (ii) Entropy
- 7) Write biochemical functions of Vitamin B₁.
- 8) Write sources and RDA of Iron.

①

(P.T.O.)

Q3. (a) Discuss classification of carbohydrates. [04]
(b) Write a note on osazone formation. [04]

OR

Q3. (a) Write a short note on maltose. [04]
(b) Explain mutarotation in carbohydrates. [04]

Q4. (a) Write a note on amphoteric nature and isoelectric pH of amino acids. [04]
(b) Discuss reaction of ninhydrin with amino-acids. [04]

OR

Q4. (a) Draw titration curve of glycine and briefly discuss it. [04]
(b) Draw structure of: Alanine, Histidine, Proline, Trptophan. [04]

Q5. (a) Discuss structure and types of vitamin K. [04]
(b) Explain role of Niacin as co-enzyme. [04]

OR

Q5. (a) Discuss structure of vitamin D. [04]
(b) Write sources and biochemical functions of Thiamine. [04]

Q6. (a) Discuss role of ATP in cell bioenergetics. [04]
(b) Write about effects of insulin on carbohydrate metabolism. [04]

OR

Q6. (a) Write a note on oxidation of fats. [04]
(b) Discuss metabolic effects of glucagon. [04]

Q7. (a) Write a note on purine nitrogenous bases. [04]
(b) Discuss formation of phosphodiester bond. [04]

OR

Q7. (a) Discuss double helical structure of DNA. [04]
(b) Write a short note on nucleosome concept. [04]

Q8. (a) Give classification of minerals with examples. [04]
(b) Discuss sources and biochemical functions of sodium. [04]

OR

Q8. (a) Write a note on biochemical functions of calcium. [04]
(b) Discuss sources and biochemical functions of iodine. [04]

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(2)