

SEAT No. _____

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[19185]

SARDAR PATEL UNIVERSITY

No. of Printed Pages : 2

M.Sc. I Semester Examination (NC)

PS01EBIT21/PS01EMIC21 (Biochemistry)

19th Thursday, April, 2018 Time: 10.00 am to 1.00 pm

Total Marks: 70

1 Choose the most appropriate answer.

(8)

- i) Which biomolecule is used by cells as instant source of energy?
(a) Glucose (c) Amino acid
(b) Fatty acid (d) none of the above
- ii) The net gain of ATP in the glycolysis is.
(a) Two (c) Three
(b) One (d) Both (b) and (c)
- iii) ATP synthetase complex of ETC in mitochondria present in/on.
(a) Outer membrane of mitochondria (c) Inner membrane of mitochondria
(b) Mitochondrial matrix (d) Inter membrane space of mitochondria
- iv) Process of Beta oxidation of Palmitoyl- CoA occur in.
(a) Mitochondrial matrix (c) Golgi apparatus
(b) Nucleus (d) Peroxisome
- v) Water soluble vitamins is.
(a) Vitamin A (c) Vitamin E
(b) Vitamin C (d) Both (a) and (b)
- vi) Which is the correct equation to represent actual free energy.
(a) $\Delta G'^0 = -RT \ln K'eq$ (c) $\Delta G = \Delta G'^0 + RT \ln K'eq$
(b) $\Delta G'^0 = +RT \ln K'eq$ (d) None of the above
- vii) Collagen consists of
(a) Only α Helix (c) Only β Helix
(b) Both (a) and (b) (d) None of the above
- viii) Two amino groups present in
(a) Leucine (c) Glutamate
(b) Arginine (d) Threonine

(1)

C.P. T.O.)

2 Answer ANY SEVEN of the following question in brief:

(7 X 2 = 14 Marks)

- i) Justify: ATP is universal currency.
 - ii) Define standard free energy with equation.
 - iii) Write Henderson–Hasselbalch equation.
 - iv) Draw a labelled diagram of the ATP synthetase.
 - v) Write down the site of following processes in the cell:
(1) Pentose phosphate pathway (2) Alpha oxidation.
 - vi) Enlist the major functions of lipids.
 - vii) Write the significance of biological waxes.
 - viii) Enlist the four names of glucogenic amino acids.
 - ix) What are aromatic amino acids?
3. a) Write a note on gluconeogenesis. (6)
b) Comment: glycolysis is under tight regulation. (6)
OR
b) Write the reversible reactions of TCA cycle. (6)
4. a) Explain the enzyme complexes involved in ETC. (6)
b) Explain structure and function of ATP synthetase. (6)
OR
b) Explain chemosmotic model proposed by Peter Mitchell. (6)
5. a) Write a note on Beta Oxidation of stearic acid. (6)
b) List out and describe role of fat soluble vitamins. (6)
OR
b) Explain shuttle for transfer of acetyl group from mitochondria to the cytosol and the regulation of fatty acid biosynthesis. (6)
6. a) Explain the secondary structures of protein. (6)
b) Discuss Urea cycle and its importance. (6)
OR
b) Discuss De Novo synthesis of Purine nucleotide. (6)

