



Seat No: _____

No. of printed pages: 02

[11]

SARDAR PATEL UNIVERSITY

Course: B. Sc. Biotechnology, VI – Semester Examination

Code No.: US06CBIT06, Paper Title: Metabolism

Date: 29-06-2022, Day: Wednesday, Time: 10:00 am to 12:00 pm

Note: Figures to the right indicate marks.

Total Marks: 70

[10]

Q.I Multiple Choice Questions

- 1) Glycolysis is the conversion of glucose into _____
 - a) Pyruvate
 - b) Glycerol
 - c) Phosphoenolpyruvate
 - d) Phosphoglycerate
- 2) The kreb cycle occurs in _____.
 - a) Mitochondrial matrix
 - b) Nucleus
 - c) Golgi bodies
 - d) Ribosomes
- 3) Which of the following is the essential product of pentose phosphate pathway?
 - a) DNA
 - b) NADPH
 - c) RNA
 - d) Ribulose 5 phosphate
- 4) Which of the following is not a ketone body?
 - a) Acetone
 - b) D-β-hydroxy-butyrate
 - c) Acetoacetate
 - d) Acetaldehyde
- 5) The pyrimidine ring is first synthesized as _____.
 - a) Inosinate
 - b) Thymidylate
 - c) Tetrahydrofolate
 - d) Orotate
- 6) _____ to be oxidized enters mitochondria, via carnitine shuttle.
 - a) Malonyl CoA
 - b) Fatty acids
 - c) Lipids
 - d) Acetyl CoA
- 7) The first amino group to enter the urea cycle is derived from _____.
 - a) Aspartate
 - b) Glutamine
 - c) Glutamate
 - d) Ammonia
- 8) Which of the following amino acid is involved in the transamination reaction?
 - a) Threonine
 - b) Lysine
 - c) Methionine
 - d) Proline
- 9) Chemiosmotic theory was postulated by _____.
 - a) Peter Mitchell
 - b) Kreb
 - c) Boyer
 - d) Watson
- 10) Which of the following is not a high energy compound?
 - a) 1,3-Bisphosphoglycerate
 - b) Phosphoenol pyruvate
 - c) Glycerol 3-phosphate
 - d) Phosphocreatine

Q.II Do as directed [08]

- a) _____ is also known as E.M.Pathway.
- b) The enzymes of fatty acid oxidation in animal cells are located in the _____.
- c) _____ is also known as Ornithine cycle.
- d) In ETC, complex II is known as _____
- e) In Krebs cycle, TCA means Tetra carboxylic acid. (True/False)
- f) Odd numbered fatty acids are broken down by β oxidation to Acetyl CoA & Propionyl CoA. (True/False)
- g) A Uricotelic organisms excretes nitrogenous waste in the form of urea.(True/False)
- h) In ETC when oxygen is reduced, water is produced. (True/False)

Q.III Answer the following questions in short. (Attempt any 10) [20]

- a) What is substrate level phosphorylation?
- b) Enlist the names of enzyme involved in Krebs's cycle.
- c) What is gluconeogenesis?
- d) Write about ketone bodies.
- e) Give the importance of nucleotides in the cell.
- f) What is β - oxidation?
- g) What are Ureotelic organisms?
- h) Define the term Deamination
- i) Give the importance of biological amines synthesized from amino acids.
- j) Write about Proton motive force.
- k) Write about complex I of ETC.
- l) What is Q cycle?

Q.IV Answer the following question in detail. (Attempt any four) [32]

- a) Explain in detail about preparatory & pay off phase of glycolysis.
- b) Describe oxidative & non oxidative phase of HMP pathway.
- c) Give an account on β - oxidation of saturated fatty acid
- d) Explain in detail de novo pathway for purine biosynthesis.
- e) Discuss in detail Urea cycle.
- f) Give an account on overview of amino acid biosynthesis
- g) Write in detail on ATP Synthase.
- h) Describe the mechanism for phosphorylation of ADP as proposed by binding change hypothesis.
