[A-63]

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SARDAR PATEL UNIVERSITY

B.Sc VI SEMESTER EXAMINATION
SATURDAY, 9TH APRIL 2016
2:30 P.M TO 5:30 P.M
BIOTECHNOLOGY: US06CBIT06
METABOLISM

Total Marks: 70

Q.I Multiple choice questions **[10]**

1) Glycolysis is also known as _____.
   a) E.M.Pathway b) HMP c) Phosphogluconate pathway d) TCA

2) Essential product of hexose monophosphate pathway is _____.
   a) Ribulose -5- phosphate b) DNA c) RNA d) NADPH

3) Enzymes for Kreb's cycle are located in_____.
   a) Cytoplasm b) Mitochondria c) Golgi bodies d) Endoplasmic reticulum

4) _____to be oxidized enters mitochondria, via carnitine shuttle.
   a) Fatty acyl-CoA b) Acetyl CoA c) Malonyl CoA d) Oleoyl CoA

5) The pyrimidine ring is first synthesized as_____.
   a) Inosinate b) Thymidylate c) Inosinate d) Orotate

6) The combined action of an aminotransferase and glutamate dehydrogenase is referred to as _____.
   a) Transdeamination b) Deamination c) Transamination d) None of these

7) Which of the following is an important enzyme involved in formation of NH_3 from amino acids in human?
   a) L-amino acid oxidase c) Histidase
   b) Glutamate dehydrogenase d) Transaminase

8) Aminotransferases are classic examples of enzymes catalyzing _____ reactions.
   a) Bi-substrate b) Uni-substrate c) Ping pong d) Multi substrate

9) The movement of _____ through ATP synthetase occurs from the intermembrane space to the matrix.
   a) H^+ b) OH^- c) O_2 d) H_2O

10) NAD is _____.
   a) Nicotin Adenine Dinucleotide c) Nicotinamide Adenine Dinucleotide
   b) Nicotin Adenine Dinucleoside d) Nicotinamine Adenylate Dinucleotide

P.T.O

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

1) How phosphofructokinase I is allosterically regulated in glycolysis?
2) What is substrate level phosphorylation?
3) Give another names & importance of pentose phosphate pathway.
4) Define: β- oxidation.
5) Draw the carbon skeleton for purine and pyrimidine.
6) Give difference between De novo pathway & Salvage pathway.
7) Define: Decarboxylation.
8) What is the significance of Urea cycle?
9) Give any two examples of biogenic amines with their functions.
10) Define: Oxidative phosphorylation
11) What are energy rich compounds? Enlist the names of it.
12) List out the names of electron carrier in ETC.

Q.III a) Explain in detail Glycolytic pathway. **[06]**
b) Give a note on a non oxidative phase of HMP shunt. **[04]**

OR

Q III a) Discuss in detail Kerb's cycle. **[06]**
b) Write a note on bypass reactions of gluconeogenesis. **[04]**

Q.IV a) Discuss the pathway for the de-novo biosynthesis of GMP. **[06]**
b) Give an account on Ketogenesis. **[04]**

OR

Q.IV a) Describe the de-novo pathway for pyrimidine nucleotide biosynthesis. **[06]**
b) Discuss in detail β- oxidation of Palmitoyl CoA. **[04]**

Q.V a) Draw and explain in detail the Urea cycle. **[06]**
b) Explain in detail Amino acid pool. **[04]**

OR

Q.V a) Write about an overview of amino acid biosynthesis. **[05]**
b) Describe in detail the transamination reaction. **[05]**

Q.VI Explain in detail electron transport complexes with neat and labelled diagram. **[10]**

OR

Q.VI Write short note on the following: a) ATP synthetase **[10]**
b) Binding Change Hypothesis

X=X=X