



MAU-003-001318 Seat No. _____

B. Sc. (Sem. III) (CBCS) Examination

October / November – 2016

BT-301 : Basic Aspects of Cellular Metabolism

Faculty Code : 003

Subject Code : 001318

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer the following questions in one word. 20

- (1) _____ are not consumed in the reactions they catalyze.
- (2) The enzyme having low affinity for the substrate will have _____ km.
- (3) The enzyme that catalyses the change in the location of the functional group from one position to another in the compound is called _____.
- (4) Acetyl-CoA is an ideal substrate for gluconeogenesis. True or False ?
- (5) The model that explain that the active site is flexible and the catalytic group can be brought into proper alignment by the substrate is called _____.
- (6) β pleated sheet are the example of _____ structure of proteins.
- (7) Protein folding is mediated by other protein called _____.
- (8) The chemical bond between two amino acid is _____.
- (9) Citric acid cycle takes place in _____.
- (10) During glycolysis electron removed from glucose are passed to _____.

- (11) In electron transport chain electron ultimately passes to _____.
- (12) Deficiency of _____ enzyme is responsible for Phenylketoneuria (PKU).
- (13) The product of light reaction of photosynthesis is _____.
- (14) How many carbon atoms are in a molecule of RuBP ?
- (15) The photosynthetic pigment is located on the _____ of cyanobacteria.
- (16) Who proposed fluid mosaic model of cell membrane ?
- (17) Long chain fatty acids are oxidized stepwise in one carbon unit starting from the _____.
- (18) A best described ketogenic amino acid is _____.
- (19) The final product of odd chain fatty acid oxidation forms _____.
- (20) Protein sequencing is a technique to determine the _____ of a protein.

2 (a) Write any three out of six.

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- (1) Which are the methods used for protein sequencing ?
- (2) What is oxidative deamination ?
- (3) What is proximity effect ?
- (4) What is G protein ?
- (5) What is substrate level phosphorylation ?
- (6) Name the enzymes which help in conversion of pyruvate to ethanol.

- (b) Write any three out of six. 9
- (1) Write the nomenclature and classification of enzyme.
 - (2) Difference between Biocatalyst and Chemical catalyst.
 - (3) Regulation of glycolysis.
 - (4) What are the methods used to study DNA-Protein interaction ?
 - (5) Explain the mechanism of transportation.
 - (6) Explain the Dark reaction of photosynthesis.
- (c) Write any two out of five. 10
- (1) Draw and write the reaction of TCA cycle.
 - (2) Explain the Michaelis menton equation.
 - (3) Explain different level of protein structure.
 - (4) Explain the role of hormones in the regulation of cellular metabolism.
 - (5) Explain any two disease of inborn error of metabolism.
- 3 (a) Write any three out of six. 6
- (1) Define allosteric enzyme.
 - (2) What are the components of ETC ?
 - (3) What are the products of pentose phosphate pathway ?
 - (4) What is Photorespiration ?
 - (5) What is signal transduction ?
 - (6) What is transmination ?

- (b) Write any three out of six 9
- (1) Explain covalent modification with example.
 - (2) Write a note on PDH.
 - (3) Explain Urea Cycle.
 - (4) Explain any one linear transformation of MM equation.
 - (5) Explain Competitive and Non-competitive inhibition.
 - (6) Explain the four complexes of electron transport chain.
- (c) Write any two out of five. 10
- (1) Explain the process of protein folding.
 - (2) Write the reaction of gluconeogenesis.
 - (3) Explain the β oxidation of fatty acid.
 - (4) Explain the cyclic and non-cyclic photophosphorylation
 - (5) Explain the mechanism of message transfer in cell in detail.
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