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DA-003-001318 Seat No. _____

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

March – 2022

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 question in one word : **20**

(1) β pleated sheet are the example of _____ structure of proteins.

(2) Enzymes are _____

(3) Enzymes are made of

(4) Koshland proposed which model of enzyme reaction?

(5) Acetyl-CoA is an ideal substrate for gluconeogenesis. True or False

(6) Uncatalyzed reaction shows _____ activation energy.

(7) The chemical bond between two amino acid is _____

(8) Glycolysis takes place in _____

(9) Electron transport chain occurs in _____

(10) Deficiency of _____ enzyme is responsible for Phenylketoneuria (PKU).

(11) Dark reaction of photosynthesis Takes place in_____.

(12) How many carbon atoms are in a molecule of RuBP?

(13) The intrinsic protein present in the cell membrane mainly functions as

(14) Aerobic respiration is performed by _____.

(15) The final product of odd chain fatty acid oxidation forms _____

(16) Protein sequencing is a technique to determine the _____ of a protein.

(17) Plasma membrane is composed of

(18) The enzyme involved in the conversion of glutamate to Ammonia is

(19) Transaminase enzymes are present in

(20) The urea cycle is also referred to as Krebs-Henseleit cycle. (True/False)

2 (A) Write any **three** out of six : **6**

(1) Define biocatalyst.

(2) What is oxidative deamination?

(3) What is G protein ?

(4) What is signal transduction?

(5) Define metabolism.

(6) What is covalent modification?

(B) Write any **three** out of six : **9**

(1) Write the nomenclature and classification of enzyme.

(2) Difference between biocatalyst and chemical catalyst.

(3) Pathway of glycolysis.

(4) Explain competitive and non-competitive inhibition.

(5) Explain the mechanism of transportation.

(6) Explain the light reaction of photosynthesis.

(C) Write any **two** out of five : **10**

(1) Explain the Michaelis Menton equation.

(2) Explain different level of protein structure.

(3) Draw and write the reaction of TCA cycle.

(4) Explain any two diseases of inborn error of metabolism.

(5) Draw Urea cycle and explain in detail.

3 (A) Write any **three** out of six : **6**

(1) What is gluconeogenesis?

(2) What are the components of ETC?

(3) What are the products of pentose phosphate pathway?

(4) What is oxidative deamination?

(5) What is fluid mosaic model?

(6) Give an example of substrate level phosphorylation.

(B) Write any **three** out of six : **9**

(1) Explain allosteric regulation with example.

(2) Write a note on PDH.

(3) What are the four complexes of ETC?

(4) Explain any one linear transformation of MM equation.

(5) What are the methods used to study DNA-Protein interaction?

(6) Write a note on ATP synthetase.

(C) Write any **two** out of five : **10**

(1) Explain the β oxidation of fatty acid.

(2) Explain the process of photophosphorylation.

(3) Explain the reaction of pentose phosphate pathway.

(4) Explain the process of protein folding.

(5) Write the reaction of gluconeogenesis.
