



JBE-1603120102010200 Seat No. _____

M. Sc. (Biochemistry) (Sem. I) (CBCS) Examination

December - 2019

CBC - 2 : Metabolism

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

[Total Marks : 70

1 Answer briefly Any **Seven** of the following questions : **14**

- (a) Person suffering from pyruvate kinase deficiency causes haemolytic anemia; Why ?
- (b) What is role of fructose 2, 6 bisphosphate in regulation of glycolysis.
- (c) What are the activators of glycogen phosphorylase in muscle ?
- (d) Give brief note. on alpha oxidation of fatty acids
- (e) Give the importance of acetyl CoA carboxylase as regulatory enzyme of lipid metabolism.
- (f) Name the coenzyme that is essential for transamination reactions. What is the mechanism of amino group transfer by transaminases ?
- (g) Under which three circumstances amino acid catabolism occurs ?
- (h) Explain - Allosteric regulation of amino acid biosynthesis.
- (i) Give a brief account of inhibitors of ATP synthesis.
- (j) Describe proton motive force in brief.

2 Answer any **two** of the following questions : **14**

- (a) What is glycogenesis? Describe the steps and state under which glycogenesis would be promoted in the body.
- (b) Describe the biosynthetic pathway of triacylglycerol
- (c) Discuss malate aspartate shuttle.

- 3 (a) Outline steps of urea cycle and state its importance. 7
(b) Write a detailed note on - Bypass reactions of Gluconeogenesis. 7

OR

- (c) Give the stoichiometry of complete oxidation of palmitic acid. 7
(d) Give a diagrammatic representation of arrangement of different complexes of mitochondrial ETC. Show the flow of electrons, sites of ATP formation and the sites of action of inhibitors of different complexes of ETC. 7
- 4 Answer the following questions : 14
(a) Write the fate of pyruvate under different metabolic condition.
(b) What is oxidative deamination of amino acids? Explain with example.
- 5 Answer the following questions : (Any Two) 14
(a) Write importance of HMP pathway. Describe the non oxidative phase for HMP.
(b) What is ketoacidosis? Outline the steps of formation of ketone bodies.
(c) Discuss denovo pathway for synthesis of pyrimidine nucleotides.
(d) Discuss the clinical significance of transaminases.
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