

B.E./B.TECH Degree Examination, December 2020

Third Semester

**BT18304- Biochemistry**

(Regulation 2018)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

**PART A - (8 X 2 = 16 marks)**

1. The product of Pyruvate Carboxylase enzyme is
  - a). Acetyl CoA
  - b). Phosphoenol Pyruvate
  - c). Oxaloacetate
  - d). Lactate
2. An example for Di phosphatidyl glycerol is
  - a). Plasmalogens
  - b). Eicosanoids
  - c). Cardiolipin
  - d). Spingosine
3. Tryptophan can be qualitatively identified by
  - a). Million's test
  - b). Sulphur Test
  - c). Hopkins Cole Test
  - d). Biuret Test
4. The marker enzyme for prostate cancer is
  - a). CPK
  - b). LDH
  - c). ALP
  - d). ACP
5. Write the Pentacovalent intermediate structure of ATP.
6. Mention the composition of invert sugar, its significance and write its Haworth cyclic Ring structure.
7. Outline the significance of active site of an enzyme with its structural information and an example.
8. What are Plasmalogens? Write its structure with an example.

**PART B - (4 X16 = 64 marks)**

09. (a) (i) Discuss the formation of glucose from Pyruvate by illustrating all the necessary steps. (8)
- (ii) Discuss the structure, properties and functions of table sugar and milk sugar. (8)
- (Or)**
- (b) (i) Write in detail about the formation of alpha keto glutarate from acetyl CoA with all necessary steps of enzymes catalyzed with ATP production. (8)
- (ii) Explain the structure, properties and functions of Animal Starch. (8)
10. (a) (i) Describe the biosynthesis of lysine with complete enzymatic reaction steps. (8)
- (ii) Explain in detail on all types of Deaminations and Transaminations of amino acids with enzymatic steps. (8)
- (Or)**
- (b) (i) What are ketone bodies? Explain how is it synthesized and broken down in the hepatocytes to get energy and NADH reducing equivalents? (8)
- (ii) With stepwise equations explain in detail on beta-oxidation of palmitic acid, and the amount of ATP formed at different stages. (8)
11. (a) (i) Derive the MM Equation and explain it with a graphical representation and its significance. (8)
- (ii) Describe in detail the mechanism of enzyme action through three theories with neat illustrations. (8)
- (Or)**
- (b) (i) Explain the biological properties of proteins with an example for each (8)
- (ii) Explain the regulation of biosynthesis of cholesterol. (8)
12. (a) (i) Explain the Chemi-Osmotic theory of Oxidative Phosphorlyation with a neat illustration. (8)
- (ii) Explain the concepts of Bioenergetics, ATP Cycle and High energy compounds with suitable examples. (8)
- (Or)**
- (b) (i) Elaborate on respiratory chain in detail with a neat sketch. (8)
- (ii) Discuss the ETC complexes in detail with a neat illustration. (8)