

**B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2010**

Third Semester

**BIO TECHNOLOGY**

BTY102: Biochemistry

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Which one of the following coming under the classification of monosaccharide?  
a) Glucose                      b) Sucrose                      c) Starch                      d) Maltose
2. Which one of the following is an aromatic amino acid?  
a) Glycine                      b) Alanine                      c) Phenyl alanine                      d) Valine
3. Which of the following enzyme is involved in glycogenesis?  
a) UDP Glu pyrophosphorylase                      b) Mevalonate-5 Phosphate  
c) Decarboxylase                      d) Squalene synthase
4. ATP synthesis occurs in  
a) Lysosome                      b) Mitochondria                      c) Cytosol                      d) Endoplasmic Reticulum
5. Which is the enzyme involved in glycolysis?  
a) Pyruvate kinase                      b) CoA transferase                      c) Thiophorase                      d) CoA synthetase
6. The enzyme involved in urea cycle is.  
a) HMG – CoA synthase                      b) Arginase  
c) HMG- CoA lyase                      d) Succinyl - CoA.
7. The fatty acid biosynthesis starts with  
a) Succinyl COA                      b) Malonyl COA  
c) Acetyl COA                      d) Aceto – acetyl COA
8. The enzyme involved in  $\beta$ -oxidation is  
a) Glucokinase                      b) Thiolase  
c) Trasaminase                      d) Histidase
9. Which of the following is a purine?  
a) Ribose                      b) Adenine  
c) Thymine                      d) Uracil
10. Which of the following is a pyrimidine?  
a) Cytosine                      b) Phosphate  
c) Adenine                      d) Guanine

**PART B (10 x 2 = 20 Marks)**

11. Write the structure of any two disaccharides?
12. Define Isoelectric point of an amino acids?
13. What do you understand by Gluconeogenesis?
14. Explain in short note on oxidative phosphorylation?
15. Give the structure of Aromatic amino acids?
16. Draw the structure of Adenosine Tri Phosphate (ATP) and give its importance in the cell.
17. Draw structure of cholesterol?
18. Explain the composition of triacyl glycerol with a diagram.
19. Give the structure of purines.
20. Differentiate salvage pathway from *denovo* pathways?

**PART C (5 x 14 = 70 Marks)**

21. a) Write in detail the classifications of carbohydrate.

**(OR)**

- b) (i) Explain the primary structure of protein with an example. (7)  
(ii) Explain the tertiary structure of protein with an example. (7)

22. a) Describe the metabolic pathway of TCA cycle with a flow diagram.

**(OR)**

- b) Describe the glycolysis pathway with a flow diagram.

23. a) Give the importance of urea cycle and explain the reactions involved with a flow chart.

**(OR)**

- b) Explain the biosynthesis of essential amino acids. (Met, Thr, Lys).

24. a) Give an account of Biosynthesis of fatty acid.

**(OR)**

- b) (i) Explain the biosynthesis of cholesterol. (7)  
(ii) Write on the regulation of cholesterol biosynthesis. (7)

25. a) Explain the *denovo* synthesis of purine nucleotide.

**(OR)**

- b) (i) Describe the regulatory mechanism of purines (7)  
(ii) Explain the regulatory mechanism of pyrimidines. (7)

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