

Register Number:

B.E./B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2012

Third Semester

BIOTECHNOLOGY

BTY102: Biochemistry

Time: Three Hours

Maximum Marks: 100

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. Non-polar aliphatic side chains are present in:
(a) Cystine (b) Asparagine (c) Glutamine (d) Glycine
2. Glycogen is a:
(a) Branched polymer of glucose (b) Linear polymer
(b) Polymer of fructose (d) Polymer of galactose
3. How many irreversible steps occurs in glycolysis?
(a) 2 (b) 10 (c) 3 (d) 5
4. Deficiency of glucose-6-phosphatase is seen in
(a) Albinism (b) Galactosemia (c) Von-Gierk's disease (d) Alkaptonuria
5. Major enzymes involved in ammonia assimilation are
(a) pyridoxamine phosphate (b) glutamine synthetase
(c) Serine dehydratase (d) pyridoxal phosphate
6. The necessary coenzyme for transamination reactions is
(a) Pyridoxal Phosphate (b) Thiamine Pyrophosphate
(c) Coenzyme A (d) Tetrahydrobiopterin
7. The rate limiting step of fatty acid synthesis is catalyzed by:
(a) Acetyly CoA carboxylase (c) ATP-citrate lyase
(b) Pyruvate dehydrogenase (d) Thiolase
8. A lipid containing alcoholic amine residue is
(a) Phosphatidic acid (b) Ganglioside (c) Glucocerebroside (d) Sphing
9. A nucleoside phosphorylase:
 1. Cleaves a nucleoside with the production of ribose 1-phosphate.
 2. is necessary for the major salvage pathway for pyrimidines.
 3. is used in the degradation of purine nucleotides.
 4. is responsible for the equilibration of nucleoside monophosphates and nucleoside diphosphate.

- (a) 1, 2 and 3 (b) 1 and 3 (c) 2 and 4 (d) All four
10. Pyrimidine nucleotides are made from
- (a) Cytidine 5'-Triphosphate (b) Uridine 5'-monophosphate
(c) Cytidylate Synthetase (c) Carbamoyl phosphate

PART B (10 x 2 = 20 Marks)

11. Give a brief account on inulin with structure.
12. Give examples of Acidic and basic amino acids
13. Distinguish between glycolysis and gluconeogenesis?
14. Write a short note on Embden-Meyerhof pathway
15. What are Allosteric inhibitors?
16. Name the α -amino acids that are required in the urea cycle.
17. How are lipids classified based on the solubility?
18. Draw a structure for lecithin.
19. What is alkaptonuria? How is it caused?
20. What is the basic difference between De Novo and Salvage pathways of nucleotide synthesis?

PART C (5 x 14 = 70 Marks)

21. a) Explain in detail about the types of Polysaccharides and their significance.
- (OR)**
- b) Explain the different levels of the structure of protein with example and Function.
22. a) Give a detailed account of glycolysis and krebs cycle.
- (OR)**
- b) Explain in detail about thermodynamics of energy.
23. a) Write in detail about urea cycle.
- (OR)**
- b) (i) Describe biosynthesis of essential amino acids (any two).
(ii) Explain about amino acid degradation. What are the metabolic disorders associated with branched chain and aromatic amino acid degradation?
24. a) Explain in detail about fatty acid synthesis and oxidative degradation.
- (OR)**

b) Describe the Cholesterol biosynthesis. Explain the mode of action of cholesterol lowering drugs.

25. a) Explain in detail about denovo pathway for nucleotide biosynthesis.

(OR)

b) Write in detail about degradation of purines and pyrimidines. Describe the clinical disorders of nucleotide metabolism.
