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Question Paper Code: 53B03

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Third Semester

Biomedical Engineering

15UBM303 - BIOCHEMISTRY

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What form of nucleotide represents the major energy currency of a cell? CO1- U
(a) Adenosine-5'- Phosphate (b) 3', 5'- cyclic adenosinemonophosphate
(c) 2'-o- methyladenosine (d) Adenosine- 5',5'- diphosphate
2. The hydrolysis products of sucrose are CO1- R
(a) Maltose (b) Glucose only (c) Glucose & Fructose (d) Fructose only
3. The common currency of energy in the biological reaction is CO2- U
(a) AMP (b) ATP (c) ADP (d) UDP
4. Trimalmitin belongs to the category of CO2- R
(a) Proteins (b) Lipids (c) Enzymes (d) None of the above
5. Which of the following bases is not present in DNA? CO3- R
(a) Adenine (b) Guanine (c) Uracil (d) Cytosine
6. A system at equilibrium under conditions of constant temperature and pressure, which one of the following will be minimum? CO3- R
(a) Enthalpy (b) Entropy (c) Gibbs free energy (d) Volume
7. Nucleic acids are polymers of CO4- R
(a) Nucleotides (b) Nucleosides
(c) Nuclei of heavy metals (d) Proteins\

8. The amino acid found in the active site of enzyme is commonly CO4- U
 (a) Methionine (b) Lysine (c) Arginine (d) Histidine
9. Which one of the nitrogenous base present in lecithin? CO5- U
 (a) Choline (b) Ethanolamine (c) Inositol (d) Serine
10. The internal energy of a gas increases by 1 J when it is compressed CO5 -R
 by a force of 1 Newton through 2 metres. The heat change of the
 system is
 (a) 1 J (b) -1 J (c) 2 J (d) -2 J

PART – B (5 x 2= 10Marks)

11. Give the application of thermodynamics in biochemistry. CO1- R
12. What is the principle of ELISA TEST? CO2- U
13. What is a metabolic Pathway biology? CO3- R
14. Define Watson & Crick model of DNA. CO4- U
15. What is Phospholipids? CO5- R

PART – C (5 x 16= 80Marks)

16. (a) What are tools used in biochemistry and how these are used in CO1- U (16)
 analysis of molecules separation?
 Or
 (b) Explain in detail how the molecules are separated from one CO1- U (16)
 another using different tools in biochemistry.
17. (a) What is the basic principle of mass spectrometry and how to CO2- U (16)
 calculate the mass of the molecule.
 Or
 (b) Discuss in detail about the chromatographic technique in CO2- U (16)
 Pollution analysis.
18. (a) What are the types of Mucopolysaccharides and explain it. CO3- U (16)
 Or
 (b) Explain the Glycogenesis pathway and its regulation. CO3- U (16)
19. (a) Draw the structure of Protein and explain in detail about the CO4- U (16)
 denaturation
 Or
 (b) Describe the Watson and Crick Model Structure of DNA. CO4- U (16)

20. (a) What is the chemical nature and properties of enzyme? CO5- U (16)
- Or
- (b) Discuss the general classification of lipids and explain how phospholipids is present within lipids and give its structure. CO5- U (16)

