

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 53B03

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. Which one the following property is based on the affinity chromatography principle? CO1- U
 - (a) Non-covalent binding of proteins to other molecule
 - (b) Covalent binding of proteins to other molecule
 - (c) Non-covalent binding of lipids to other molecule
 - (d) Covalent binding of lipids to other molecule
2. The hydrolysis products of sucrose are CO1- R
 - (a) Maltose
 - (b) Glucose only
 - (c) Glucose & Fructose
 - (d) Fructose only
3. Which law is involved in colorimeter? CO2- U
 - (a) Lamberts law
 - (b) Thermodynamics law
 - (c) Chargaff's law
 - (d) Watson-crick model
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. Ribose and deoxyribose differ in structure around a single carbon namely, CO3- R
 (a) C1 (b) C2 (c) C3 (d) C4
7. Nucleic acids are polymers of CO4- R
 (a) Nucleotides (b) Nucleosides
 (c) Nuclei of heavy metals (d) Proteins
8. One of the following bonds in protein structure that are not broken on denaturation? CO4- U
 (a) Hydrogen bonds (b) Peptide bonds (c) Ionic bonds (d) Disulfide bonds
9. Which one of the nitrogenous base present in lecithin? CO5- U
 (a) Choline (b) Ethanolamine (c) Inositol (d) Serine
10. Name a non-protein compound that bring about catalysis in biological system. CO5 -R
 (a) DNA (b) RNA (c) Lipids (d) Carbohydrates

PART – B (5 x 2= 10Marks)

11. List out the types of tools used in Biochemistry. CO1- R
12. What is electrophoresis? CO2- U
13. What are reducing sugar? Give example. CO3- R
14. State the difference between DNA and RNA. CO4- U
15. Mention the common property of lipids. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the stabilizing forces involved in molecules and what are the laws involved in thermodynamics. CO1- U (16)
- Or
- (b) Explain in detail how the molecules are separated from one another using different tools in biochemistry. CO1- U (16)
17. (a) What is the basic principle of mass spectrometry and how to calculate the mass of the molecule. CO2- U (16)
- Or
- (b) Explain the metabolism of Nitrogen containing compounds through Nitrogen fixation and photosynthesis. CO2- U (16)

18. (a) Describe the glycolytic pathway and calculate the yield number of ATP molecules per molecule of glucose degraded. CO3- U (16)
- Or
- (b) Explain the Glycogenesis pathway and its regulation. CO3- U (16)
19. (a) Discuss the properties of amino acids and Explain in detail how DNA act as a genetic material. CO4- U (16)
- Or
- (b) Describe the Watson and Crick Model Structure of DNA. CO4- U (16)
20. (a) Explain the different types of enzymes and describe any one method used to measure enzyme activity. 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)

