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GIET UNIVERSITY, GUNUPUR – 765022
M. Sc. (First Semester) Examinations, March – 2023
22LSPC101 – Biophysics and Biochemistry
(Life Science)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A**(2 x 10 = 20 Marks)**

Q.1. Answer all questions

| | CO# | Blooms Level |
|--|-----|-----------------|
| a. Define dielectric constant. | 1 | K1 |
| b. Differentiate between conformation and configuration. | 1 | K1 |
| c. How can we find the charge of an amino acid? Explain. | 2 | K2 |
| d. What are the laws of thermodynamics? | 2 | K1 |
| e. Differentiate between reducing sugar and non-reducing sugar. | 3 | K2 |
| f. Write the quadrant and angles of collagen triple helix and alpha chain of collagen. | 3 | K3 |
| g. Malonate is the inhibitor of succinate dehydrogenase. Explain the mechanism of Inhibition. | 3 | K4 |
| h. Write any 4 four function about proton pump. | 4 | K2 |
| i. Write the end product and energetics of aerobic glycolysis. | 4 | K3 |
| j. How scientist can induce the blockage of Cyt bc1 complex and Cyt c oxidase in yeast? Explain. | 4 | K4 |

PART – B**(10 x 5 = 50 Marks)**Answer ANY FIVE questions

| | Marks | CO # | Blooms Level |
|--|-------|---------|-----------------|
| 2. a. Extricate the characteristics of ionic bond and hydrogen bond. | 05 | 1 | K2 |
| b. Explain about isomerism with an example. | 05 | 1 | K2 |
| 3.a. Biological oxidation and reduction is vital mechanism. Justify the comment | 05 | 2 | K3 |
| b. Explain about buffer system in blood. | 05 | 2 | K3 |
| 4. a. What are the classification of phospholipid? Name the major phospholipid. | 05 | 3 | K3 |
| b. Describe the formation of glycosidic linkage. | 05 | 3 | K3 |
| 5.a. Write the mechanism in RBC for energy production. | 05 | 4 | K4 |
| b. What is the alternative method to gain energy in cell if there will be scarcity of glucose takes place? | 05 | 4 | K4 |
| 6. a. Differentiate between emulsion and suspension with example. | 05 | 1 | K2 |
| b. Describe the structure of atom and role in the compound formation. | 05 | 2 | K3 |
| 7.a. Derive Michaelis-Menten Equation and their application | 05 | 3 | K3 |
| b. Explain the line-weaver burckh plot/double reciprocal plot. | 05 | 3 | K3 |
| 8. a. Enumerate the auto-phosphorylation in leaves of mirabilis jalapa. | 05 | 4 | K3 |
| b. Decarboxylation process occurs in mitochondria. Explain it | 05 | 4 | K4 |

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