

Exam. Code : 107401

Subject Code : 1823

B.Sc. Biotechnology 1<sup>st</sup> Semester

BT-9 : BIOCHEMISTRY-A

Time Allowed—3 Hours] [Maximum Marks—40

**Note** :— All questions are of 8 marks each. Attempt total *five* questions selecting *one* from each section and *fifth* question can be attempted from any section.

**SECTION—A**

1. (a) Define pH and pI with their significance. 4  
(b) Define buffer. Give example of one strong and one weak buffer. 4
2. Calculate the pH of a buffer solution made from 0.10 mol/L  $\text{HC}_2\text{H}_3\text{O}_2$  and 0.50 mol/L  $\text{C}_2\text{H}_3\text{O}_2^-$ . The acid dissociation constant of  $\text{HC}_2\text{H}_3\text{O}_2$  is  $1.2 \times 10^{-5}$ . 8

**SECTION—B**

3. Discuss the structure and function of one structural and one storage polysaccharide. 8
4. Discuss Haworth projections of maltose and sucrose. 8

**SECTION—C**

5. Discuss the structure and function of glycolipids in detail with examples. 8
6. Justify the role of carbohydrates as informational molecules with examples. 8

**SECTION—D**

7. Differentiate between nucleosides and nucleotides structure with example. 8
8. Discuss Watson and Crick model of DNA structure. 8

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