Examination and Evaluation Pattern for Undergraduate courses (Autonomous)

Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
End Semester Examination: Jan.2022
Faculty: Science and Technology

Program: B.Sc. Code (BScBiotech04) **Semester: I** **SET: B**
Program (Specific): Biotechnology **Course Type: Core**
Class: F. Y B.Sc Biotechnology **Max. Marks: 35**
Name of the Course: Biochemistry I
Course Code: 22 BBT-103 **Time: 2Hr**

Instructions to the candidate:

1) *There are 4 sections in the question paper. Write each section on separate page.*
2) *All Sections are compulsory.*
3) *Figures to the right indicate full marks.*
4) *Draw a well labelled diagram wherever necessary.*

SECTION: A

Q1) Define or Explain or Very short answer questions (Attempt any 5/6) **5**

1. **Define Buffer capacity.**
2. **What are anomers?**
3. **Give the biological function of cholesterol.**
4. **Define Vander Walls interactions**
5. **Give name of an aldose and ketose.**
6. **Define osmosis.**

SECTION: B

Q2) Short answer questions (Attempt any 5/6) **10**

1. **Derive Henderson- Hassel Balch equation.**
2. **Discuss oxidation and reduction reaction of monosaccharides.**
3. **What are waxes? Give their two important functions.**
4. **What is inversion of sugar?**
5. **Calculate the concentration of H^+ in a solution of 0.1 M NaOH?**
6. **Define Rancidity. Why does it occur?**

SECTION: C

Q3) Short answer questions (Attempt any 2/4) **8**

1. **Mention unique properties of water that has enabled life on the planet Earth.**
2. **What is saponification number and iodine number? Give their significance.**
3. **Compare biological functions of polysaccharides; starch, glycogen, cellulose and chitin.**

4. **Explain the experiment performed by Miller-Haldane-Urey. What does this experiment indicate?**

SECTION: D

Q4) Long answer Questions (Attempt any 2/4) 12

1. **Draw the labelled structures of Maltose, Sucrose and Amylopectin indicating the linkages.**
2. **Define phospholipids. Draw the structure of phosphatidic acid. Write the functions of phospholipids.**
3. **Draw the structures of the Following- Cephalin, Mannose, Fructose, Erythrose, Essential fatty acid, Dihydroxyacetone**
4. **Discuss the role of various covalent and non covalent interactions in biomolecules.**