

**Sardar Patel Mahavidyalaya, Chandrapur.**  
**Model Examination Summer – 2020 B.Sc. Sem II (CBCS)**  
**Subject: Microbiology- Paper I**  
**(Microbial Chemistry and Physiology)**

**Time:3Hrs.**

**Max.Marks:50**

Note: 1. All questions are compulsory and carry equal marks.

- |      |   |    |
|------|---|----|
| Q.1. | Discuss different types of bonds with their importance.                           | 10 |
|      | OR  |    |
|      | Classify amino acids on the basis of R group.                                     |    |
| Q.2. | Classify lipids with suitable examples. Add note on significance of lipids.       | 10 |
|      | OR  |    |
|      | Describe in details. Watson and crick model of DNA.                               |    |
| Q.3  | a) Write short note on optical isomers.   | 2½ |
|      | b) Give general features of amino acids.  | 2½ |
|      | c) Explain the biological significance of carbohydrates.                          | 2½ |
|      | d) Discuss the peptide bond theory.   | 2½ |
|      | OR  |    |
|      | e) Give importance of isomers in biology.   | 2½ |
|      | f) Give biological significance of proteins.                                      | 2½ |
|      | e) Explain the structure of hyaluronic acid.                                      | 2½ |
|      | f) Describe in short the general structure of mRNA.                               | 2½ |
| Q.4  | a) Explain different types of solutions.  | 2½ |
|      | b) Give general structure of amino acids.   | 2½ |
|      | c) Give the structure of glucose and fructose ?                                   | 2½ |
|      | d) What are simple proteins? Explain with two examples.                           | 2½ |
|      | OR  |    |
|      | e) Explain cis-trans isomers in biology.  | 2½ |
|      | f) Write short notes on uncommon amino acids.                                     | 2½ |
|      | e) Describe the structure of raffinose.   | 2½ |
|      | f) Explain different types of bonds which maintain tertiary structure of protein. | 2½ |
| Q.5  | Attempt any ten   | 10 |
|      | a) Define atom and molecule.  |    |
|      | b) Define Redox Potential.  |    |
|      | c) Draw the structure of Maltose.   |    |
|      | d) Give two examples of sulfur containing amino acids.                            |    |
|      | e) Draw the structure of lysine.  |    |
|      | f) Give the list of 20 amino acids.   |    |
|      | g) What are dextro-rotatory compounds. Give example.                              |    |
|      | h) Give two examples of Homopolysaccharides.                                      |    |
|      | i) What are Glycerophospholipids.   |    |
|      | j) Give three difference between DNA and RNA.                                     |    |
|      | k) What are nucleotides.  |    |
|      | l) Give names of different types of nitrogen bases.                               |    |

**All The Best**