

**M.Sc. I Semester Degree Examination, April/May - 2024****MICROBIOLOGY****Microbial Biochemistry and Physiology****(NEP)**

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with question No. **1 (Q.1)** is **Compulsory**. Each question carries **equal** marks.

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| 1. | (a) | Write the structure and properties of water molecule. | 5 |
| | (b) | Explain Henderson-Hasselbalch equation. | 5 |
| | (c) | Define molarity, normality, molality and mole fraction. | 4 |
| 2. | (a) | Explain Ramachandran plot and its significance. | 7 |
| | (b) | Write an account on globular protein and chaperonin. | 7 |
| 3. | (a) | Discuss the Structure and function of amino acids. | 5 |
| | (b) | Explain nucleic acids structure and functions. | 5 |
| | (c) | Write a note on lipids in membranes. | 4 |
| 4. | (a) | Explain the TCA cycle and its regulation. | 7 |
| | (b) | Discuss Glycolysis and its regulation. | 7 |
| 5. | (a) | Discuss the β -oxidation of fatty acids and write a note on ketone bodies. | 7 |
| | (b) | Discuss the biosynthesis and degradation of cholesterol. | 7 |
| 6. | (a) | Discuss HMP pathway and its significance. | 5 |
| | (b) | Explain synthesis of triacylglycerol. | 5 |
| | (c) | Describe Transamination and deamination with example. | 4 |



- 7.** (a) Discuss mechanism of oxidative phosphorylation. **5**
(b) Explain Calvin's Cycle. **5**
(c) Write a note on facultative anaerobes. **4**
- 8.** (a) Write note on Photosynthetic Pigments. **5**
(b) Explain biosynthesis of pyrimidine nucleotides. **5**
(c) Write an account on bacterial response to environmental stress. **4**

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