

**PD-547**  
**M.Sc. Biotechnology**  
**1st Semester Examination, Dec 2020**  
**Paper-IV**  
**Biochemistry**

Time: Three Hours}

[Maximum Marks: 80  
[Minimum Pass Marks: 29

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Note: Answer from **both** the sections as directed. The figures in the right-hand margin indicate marks

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**Section-A**

1. **Answer the following questions:** 1X10
- (a) Write formula for electrostatic interaction.
  - (b) Mention any one essential microelement.
  - (c) What is catabolism?
  - (d) How many ATP molecules produce in Glycolysis.
  - (e) Write expand form of TCA.
  - (f) Write any one acidic amino acid.
  - (g) What is the application of Ramachandran plot?
  - (h) What is a helix?
  - (i) Give any one example for fatty acid.
  - (j) Give any one example for pigment.
2. **Answer the following questions:** 2X5
- (a) Write a note on hydrophobic interaction.
  - (b) Write about structure of disaccharide.
  - (c) Write a note on biosynthesis of amino acids.
  - (d) Explain about metabolism of lipids.
  - (e) What is gluconeogenesis? Explain.

**Section - B**

**Unit-I**

**Answer the following questions:**

- 3 Explain in detail about scope and importance of Biochemistry.

OR

Write an essay on principles of thermodynamics.

**Unit-II**

- 4 Write an essay on catabolism of carbohydrates.

OR

Explain in detail on structure and classification of carbohydrates.

**Unit-III**

- 5 Write about structure and classification of proteins.

OR

Write an essay on proteins of biomembrane and nucleoprotein.

**Unit-IV**

- 6 Write about synthesis and oxidation of fats.

OR

Explain in detail on structure, function and applications of vitamins.

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