



Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: OCT / NOV 2024
Faculty: Science and Technology

Program: BScGen03
Program (Specific): Zoology
Class: T.Y.B.Sc
Name of the Course: Biological Chemistry
Course Code: 24 -ZO -353
Paper: III

Semester: V

SET: A
Course Type: DSEC
Max.Marks: 35
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

5

- a) Define Optical activity.
- b) Explain co-factor
- c) Explain Beri-beri.
- d) Define Hypoglycaemia.
- e) Explain pH.

Q2) Very short answer questions (Attempt any 4/6)

4

- a) Describe biological buffer.
- b) What is glycosidic linkage?
- c) Explain isozymes.
- d) What are monosaccharides?
- e) Describe saturated fatty acids with a suitable example.
- f) What is obesity?

SECTION: B

Q3) Short answer questions (Attempt any 4/6)

8

- a) Describe essential amino acids with a suitable example.
- b) State the role of the hormone released by alpha (α)-cells of the pancreas.
- c) Draw the biochemical structure of glucose.
- d) Derive the Henderson- Hasselbalch equation.
- e) Highlight the importance of biochemistry in Pharmaceutical industry.
- f) Mention the significance of carbohydrates.



Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: OCT / NOV 2024
Faculty: Science and Technology

SECTION: C

Q4) Short answer questions (Attempt any 4/6)

8

- a) Illustrate the structure of α - helical structure of proteins.
- b) What is Phenylketonuria?
- c) Describe the gluconeogenic pathway.
- d) Explain simple lipids with a suitable example.
- e) Write a note on polar amino acids.
- f) Comment upon the role of the bicarbonate buffer in biological systems.

SECTION: D

Q5) Long answer type Questions (Attempt any two of the following)

10

- a) What are enzymes? Give a detailed account of nomenclature and types of enzymes.
- b) Comment upon the role and biological significance of proteins in detail.
- c) State the biochemical name, dietary sources, biological functions and deficiency symptoms of Vitamin C.
- d) Describe the structure of haemoglobin protein with a neat labelled diagram.



Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: OCT / NOV 2024
Faculty: Science and Technology