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: B.Sc. Code(Gen 03) **Semester: V** **SET: A**
Program (Specific): General B.Sc. **Course Type: Core**
Class: T.Y.B.Sc. (Gen) **Max. Marks: 35**
Name of the Course: Biophysics
Course Code: 24-PHY-356 **Time: 2Hr**
Paper: VI

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 neat labelled diagram wherever necessary.*

SECTION: A

Q1) Define or Explain the following. **(5 Marks)**

i) Define Osmosis.

ii) What is Biophysics?

iii) What is the function of chloroplast in plant cell?

iv) State Principle of working of a colorimeter.

v) Define half- cell potential.

Q2) Answer the following. **(Attempt any four)** **(4 Marks)**

i) Explain function of nucleus in a cell.

ii) Explain what is resting potential?

iii) State two types of electrodes used in ECG.

iv) How does a centrifuge machine work?

v) What are radiation doses?

vi) State the type of wave used in ultrasonography.

SECTION: B

Q3) Answer the following. (Attempt any four) (8 Marks)

i) Draw schematic of Scanning Electron Microscope (SEM).

ii) State two differences between plant and animal cell.

iii) Explain primary structure of protein.

iv) What is Nernst Equation?

v) Explain the function of polarizing electrodes.

vi) State two applications of NMR technology.

SECTION: C

Q4) Answer the following. (Attempt any two) (8 Marks)

i) Write a note on biometry and its types.

ii) What is an ECG? Draw a typical ECG waveform. State importance of QRS complex.

iii) With the help of a neat diagram, write a note on structure of neuron.

iv) Differentiate between Scanning and Transmission Electron microscope.

SECTION: D

Q5) Attempt any two of the following (10 Marks)

i) With the help of a neat labeled diagram explain the working of a Spectrophotometer.

ii) With the help of a neat diagram, explain the functional aspects of Mitochondria.

iii) Write a short note on Genetic Code.

iv) Explain working of a CT scan and state any two applications of it.