Progressive Education Society's

Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16

NEP 2020 (Autonomous)

End Semester Examination: April 2024

***Total No. of Questions**: 4* ***Total No. of Pages**: 2*

First Year (B. Sc. Biotechnology)
BIO1224: Bioinstrumentation
(Semester II)

Program: B. Sc. Biotechnology (04) **Credits:** 2
Program Specific: Biotechnology **Time:** 2 Hours
Course Type: Core **Max. Marks:** 30
SET: A

Instructions to the candidate:

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Draw a well labelled diagram wherever necessary.*

SECTION: A

Q1) Answer the following. **[1 X 5 = 5]**

1. Give examples of any two types of lens used in compound microscope.
2. Define diffusion.
3. Define symport.
4. What is membrane potential?
5. Mention role of developer in chromatography.

SECTION: B

Q2) Answer any FIVE of the following (5/7). **[2 X 5 = 10]**

1. Compare and contrast between Adsorption and Absorption.
2. Draw neat and well-labeled sketch for structure of plasma membrane.
3. Enlist various techniques used to analyze biomolecules?
4. Write principle of fluorescence microscopy.
5. Mention applications of spectrophotometer.
6. Explain concept of absorption maxima.
7. State principle of pH Meter.

SECTION: C

Q3) Answer the TWO of the following (2/4). **[5 X 2 = 10]**

1. Define Lambert-Beer Law and add a note on working of spectrophotometer.
2. Differentiate between compound and electron microscope.
3. Explain concept of Planar Chromatography?
4. Comment on Atomic Absorption Spectrophotometer.

SECTION: D

Q4) Answer any ONE of the following (1/2). **[5 X 1 = 5]**

1. What is a Centrifuge? Explain in detail principle and working of any one type.
2. Explain how transport occurs across cell membrane?

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