Progressive Education Society's

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

(Autonomous)

End Semester Examination: Oct. / Nov. 2024

***Total No. of Questions**: 4/18* ***Total No. of Pages**: 2*

FIRST YEAR (B.Sc. BIOTECHNOLOGY)
BIO11105: BIOINSTRUMENTATION
(Semester I)

Program: B.Sc. Biotechnology (04) **Credits:** 2
Program Specific: Biotechnology **Time:** 2 Hours
Course Type: Major **Max. Marks:** 30
Paper: **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 **[5 X 1= 5]**

a) Define Adsorption.

b) What is active transport?

c) Mention any two types of gels used in gel filtration chromatography.

d) What is anion exchanger resin?

e) Give an example of acidic buffer.

SECTION: B

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

1. Give any two properties of colloids.
2. Enlist any four applications of spectrophotometer.
3. Differentiate between depolarization and repolarization of membrane.
4. State any four instruments used in the field of biotechnology.
5. What is resolving power of a microscope?
6. Define mass spectroscopy.
7. State Beer-Lambert's law.

SECTION: C

Q3) Answer the following/Write short notes on following (Attempt any 2/4) [2 X 5 = 10]

1. Describe the mechanism in which molecules are transported across the membrane passively.
2. Elaborate on the construction & working of colorimeter and give its applications.
3. Discuss the principle of TLC & mention its applications.
4. Explain the inverted microscope w.r.t. its principle and applications.

SECTION: D

Q4) Answer the following (Attempt any 1/2) [5 X 1 = 5]

1. Explain the principle and working of a bright field microscope & mention its applications.
2. Discuss how centrifuge is used for separating mixture. Add a note on different types of centrifuges.

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