[34] SEAT No._____ No. of Printed Pages: 02

Sardar Patel University
M.Sc. Integrated Biotechnology – IV SEM
IGBT- PS04AIGB21: Bioinstrumentation
Friday, 29th March 2019
10:00 A.M. to 01:00 P.M.

Total marks: 35

Note:
1) Figures to the rights indicate marks
2) Draw neat and labeled diagram wherever necessary.

Q.1 Mark the right answer of following questions. [05]

1. Who had invented the pH Scale?
   a) S.P.L Sorenson
   b) Benjamin Franklin
   c) Henry Moseley
   d) Wilhelm Rontgen
2. If proteins are separated according to their electrophoretic mobility then the type of electrophoresis is:
   a) SDS PAGE
   b) Affinity Electrophoresis
   c) Electro focusing
   d) Free flow electrophoresis
3. In gas chromatography, the basis for separation of the components of the volatile material is the difference in
   a) partition coefficients
   b) conductivity
   c) molecular weight
   d) molarity
4. Which of the following centrifugation is used to separate certain organelles from whole cell?
   a) Rate-zonal centrifugation
   b) Normal centrifugation
   c) Differential centrifugation
   d) Isopycnic centrifugation
5. Which technique separates charged particles using electric field?
   a) Chromatography
   b) Electrophoresis
   c) Hydrolysis
   d) Filteration

Q.2 Answer the following questions. (ANY THREE) [06]

1. Briefly explain BOD incubator.
2. What is ultracentrifuge? Give its uses
3. Explain principle of affinity chromatography.
4. Justify reason for using 2D gel electrophoresis.
5. What is nanotechnology? Give its applications.

P.T.O.

Q.3	**A.**	Describe types of rotors used in centrifugation.	**[06]**
	B.	Write a note on differential centrifugation.	**[06]**
		OR	
	B.	Elaborate on the construction and working of pH glass electrode.	**[06]**
Q.4	**A.**	Depict on working of SDS PAGE.	**[06]**
	B.	Discuss on (i) paper chromatography (ii)thin layer chromatography	**[06]**
		OR	
	B.	Stepwise explain working and applications of HPLC.	**[06]**

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(2)