(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1233 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. III) ODD SEMESTERTHEORY EXAMINATION 2013-14

INSTRUMENTATION AND TECHNIQUES

Time : 3 Hours *Total Marks : 100*

Note :–Attempt **all** questions.

1. Attempt **all** of the following : **(2×10=20)**
   (a) Define Electrophoresis.
   (b) What is Microscopic Resolution ?
   (c) Define Ultrafiltration.
   (d) Differentiate between SEM and TEM.
   (e) Electrochemical Detectors.
   (f) What is NMR ?
   (g) Diagramatic representation of Dark Field Microscopy.
   (h) Elution time and volume in Chromatography.
   (i) Role of Chromatography in protein binding studies.
   (j) Applications of Flow Cytometry.
2. Attempt any **three** of the following : **(10×3=30)**
   (a) Write the working principle and application of fluroscent microscopy.
   (b) Discuss in detail about Isoelectric Focusing.
   (c) Elaborate Gel Filtration Chromatography.

(d) Write short notes on any **two** :

(i) Large capacity refrigerated centrifuges

(ii) High speed refrigerated centrifuges

(iii) Preparative ultra centrifuges.

(e) What is Chromatography ? Write down the working principle and method of Ion exchange Chromatography.

3. Attempt any **four** of the following : **(12.5×4=50)**

(a) Elaborate the working principle of U.V. visible spectroscopy and also write down its application.

(b) Discuss about density gradient centrifugation in detail.

(c) Write down the working principle and application of confocal microscopy.

(d) Explain the principle and application of gas chromatography.

(e) Elaborate high performance liquid chromatography with the help of suitable diagram.