

Exam.Code:0037

Sub. Code: 0983

1128

B.Sc. (Hons.) Biotechnology

Fifth Semester

BIOT-Sem-V-II-T: Bio-Analytical Tools

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Write in brief:

- a) What is flourochrome?
- b) What is isopyknic centrifugation?
- c) What is the basis of all forms of chromatography techniques and how is it expressed?
- d) What is the role of TEMED in PAGE?
- e) Define a Biosensor? (5x3)

UNIT - I

- II. a) Explain with the help of diagram the working of TEM and mention its various applications?
- b) Discuss the principle and working of Flame Emission spectroscopy? (7,6)
- III. a) Discuss the principle and working of Phase contrast microscopy and mention its applications?
- b) What is pH meter? Mention the components of a standard pH meter and its use in biology? (7,6)

UNIT - II

- IV. a) Discuss the principle and law of absorption flourimetry?
- b) Discuss the rate zonal centrifugation and its applications? (8,5)
- V. a) Mention the difference between colorimeter and spectrophotometer in relation to their working and applications?
- b) Why is subcellular fractionation carried out? Give its significance and name the various techniques used for cell fractionation? (8,5)

P.T.O.

(2)

UNIT – III

- VI. a) Discuss the principle and instrumentation of HPLC? Give its advantages?
b) What are the various types of stationary phases used in various modes of HPLC? (8,5)
- VII. a) Give the working principle of Gas chromatography? What is its application in biotechnology?
b) Mention the applications of gel filtration chromatography? (8,5)

UNIT – IV

- VIII. a) Describe the pulse field gel electrophoresis (PFGE)? Mention its major applications in biotechnology?
b) Discuss the various applications of Nanotechnology in Environment? (7,6)
- IX. What are Biosensors? Discuss in detail various types of biosensors and their applications in various fields of biotechnology? (13)

x-x-x