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92073

B.Sc. 3rd Semester New Scheme

Examination, November-2017

BIOTECHNOLOGY

Paper- BT-302

Bio Analytical Tools

Time allowed : 3 hours]

[Maximum marks : 40

Note: Attempt five questions in total. Q.No.1 is compulsory and attempt remaining four questions selecting at least one question from each unit.

1. Explain the following:- 1 × 10 = 10
- (a) Application of fluorescence microscopy
 - (b) Principle and application of Isoelectric focusing
 - (c) Compare Bright field microscopy with dark field microscopy.
 - (d) Precautions taken while using centrifuge.
 - (e) pH meter
 - (f) Colorimetry
 - (g) Affinity Chromatography
 - (h) HPLC
 - (i) Starch gel
 - (j) Nanotechnology

Unit-I

2. What do you understand by transmission electron microscopy? Discuss its principle and applications. 7½

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[P.T.O.]

3. ✓ Write short notes on the following:

- (a) Emission Spectroscopy 3½
(b) Phase contrast microscopy. 4

Unit-II

4. Explain principle and application of ultraviolet and visible light Spectroscopy. 7½
5. Explain differential and density gradient centrifugation. What are the major differences between the two. 7½

Unit-III

6. ✓ Write short note on the following:

- (a) Ion-exchange chromatography. 4
(b) Gas Chromatography. 3½

7. Explain the following briefly:

- (a) Column Chromatography 4½
(b) Paper Chromatography. 3

Unit-IV

8. ✓ Write short notes on the following:

- (a) Western blotting. 4½
(b) Biosensors.

9. Describe briefly the following:-

- (a) Native and SDS PAGE 4
(b) Immunoelectrophoresis 3½