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Msc2BotI0110

Seat No: _____

M.Sc. (Botany) Semester - 2 (CBCS) Examination

March/April- 2018

ANALYTICAL TECHNIQUES

(INTER DISCIPLINARY)

Time: 2:30 Hours

Marks: 70

Instructions:

1. Draw neat and labeled diagrams wherever necessary.
 2. All questions are compulsory.
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Que-1 Answer the following (*any 7*) (14)

- (1) How Phase Contrast Microscopy is different from Fluorescence Microscopy?
- (2) Why Tissue fixation is required?
- (3) What are the applications of Autoradiography?
- (4) Define the term 'Chromatography'
- (5) What is Elution in chromatography?
- (6) What is FPLC?
- (7) Define - stationary and mobile phase with examples
- (8) What is isopycnic centrifugation?
- (9) Explain polymerization of Poly acrylamide.
- (10) What are zwitterions?

Que-2 Answer the following (*any two*) (14)

- (1) Explain Mass Spectrometry.
- (2) Discuss isoelectric focusing with diagram.
- (3) Describe in detail Ion Exchange Chromatography.

Que-3 Answer the following

- (1) Explain the principles of electrophoretic separation of nucleic acids. (05)
- (2) Describe Principles of Phase Contrast and Fluorescence Microscopy. (05)
- (3) Write in brief about 'Gel Permeation chromatography'. (04)

OR

Que-3 Answer the following

- (1) Describe in detail the differences in between Transmission and Scanning Electron microscopy. (05)
- (2) Explain principles and application of Centrifugation. (05)
- (3) Compare and contrast : SDS PAGE and Native PAGE. (04)

Que-4 Answer the following (14)

- (1) Describe principle, instrumentation and application of NMR spectroscopy.
- (2) Write a detailed note on 'Reverse phase chromatography' in HPLC

Que-5 Answer the following (*any two*) (14)

- (1) Explain Principles of UV and IR spectroscopy.
- (2) Write a comparative account on various blotting techniques.
- (3) Write a detailed note on 'Gas chromatography'.
- (4) Explain - 'Molecular modelling'
