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**PAT-003-1142004** Seat No. _____

# M. Sc. (Botany) (Sem. II) (CBCS) (W.E.F.2016) Examination

**August - 2020**

## BOT - 210 : Analytical Techniques

**Faculty Code : 003**

**Subject Code : 1142004**

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

**1** Answer the following : (Any **Seven**) **7×2=14**

(a) What are the basic factors which can affect the tissue fixation?

(b) Define interference and retardation.

(c) Write the name of anion and cation exchanger.

(d) Write the application of GC-MS.

(e) Difference between native and SDS-PAGE?

(f) Write the Electron spray ionization process.

(g) What is PI value? Write its significance.

(h) What is electromagnetic radiation? Write its characteristics.

(i) Explain the Jablonski diagram.

(j) Define the word Ionization

**2** Answer the following : (Any **Two**) **2×7=14**

(a) Describe the principle and application of Fluorescence Microscopy.

(b) Write note on Scanning Electron Microscopy.

(c) Explain the autoradiography technique.

**3** Answer the following : **2×7=14**

(a) What is nuclear magnetic resonance? Explain in detail.

(b) Describe infrared spectroscopy.

**OR**

3 Answer the following : **2×7=14**

(a) Explain the principle of spectrophotometer and its application.

(b) Write a note on affinity chromatography.

4 Answer the following : **2×7=14**

(a) Explain Gel Filtration and its application.

(b) Describe the Ion exchange chromatography and its application.

5 Write short notes on any **two** of the following : **2×7=14**

(a) Types of centrifugation

(b) Northern blotting technique and its applications

(c) Isocelectric focusing

(d) Types of Mass analyzer