



**PAT-003-014204**

Seat No. \_\_\_\_\_

**M. Sc. (Botany/Zoology/Microbiology) (Sem. II)  
(CBCS) Examination**

**August - 2020**

**Analytical Techniques : Paper - 210**

*(Old Course)*

**Faculty Code : 003**

**Subject Code : 014204**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1 Answer the following very briefly : (Any Seven)  $2\times 7=14$**
- (a) What is fixation?
  - (b) What is regressive staining?
  - (c) Define nuclear emulsion.
  - (d) Explain Planck's Quantum theory.
  - (e) Give applications of NMR.
  - (f) Explain the principle of ion exchange chromatography for protein.
  - (g) What is difference between GC and HPLC?
  - (h) How many types of detectors are available for HPLC?
  - (i) What is SDS-PAGE?
  - (j) What is the relation between RPM and RCF?
- 2 Answer of the following : (Any Two)  $7\times 2=14$**
- (a) Describe agarose gel electrophoresis in detail.
  - (b) Describe density gradient centrifugation.
  - (c) Ion exchange chromatography for protein separation.
- 3 Answer the following :  $7\times 2=14$**
- (a) Explain infrared spectroscopy in detail.
  - (b) Describe the fluorescence microscopy

**OR**

- (a) Explain UV-visible spectroscopy in detail.
- (b) Write short notes on isoelectric focusing
- 4 Answer the following : **7×2=14**
- (a) Describe the principle, procedure and application of Gel Filtration Chromatography.
- (b) Write short note on HPLC components.
- 5 Answer the following : (Any **Two**) **7×2=14**
- (a) Describe Autoradiography in detail.
- (b) Explain use of Electromagnetic radiation in spectroscopy.
- (c) What is ionization? Write the different types of ionization method.
- (d) Write short notes on southern blotting technique.
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