



Seat No. _____

HQ-003-1182004

**M. Sc. (Zoology) (Sem. II) (CBCS)
(W.E.F. 2016) Examination**

April - 2023

ZOOL - 210 : Analytical Techniques

Faculty Code : 003

Subject Code : 1182004

Time : $2\frac{1}{2}$ / Total Marks : 70

- 1** Answer the following very briefly : (any seven) **2×7=14**
- (a) What are the uses of fluorescence microscopy?
 - (b) What is regressive staining?
 - (c) What are the characteristics of electromagnetic radiation?
 - (d) What is spectrum?
 - (e) What are the applications of infrared spectroscopy?
 - (f) What is the basic principle of chromatography and its uses?
 - (g) What are the basic components of an HPLC system?
 - (h) What is the difference between GC and HPLC?
 - (i) Explain the principle of centrifugation.
 - (j) What is SDS-PAGE?
- 2** Answer of the following : (any two) **7×2=14**
- (a) Write brief notes on the differences between TEM and SEM.
 - (b) Write brief notes on Stoke's shift.
 - (c) Principle and applications of Auto radiography.
- 3** Answer the following: **7×2=14**
- (a) Describe the UV-Visible spectroscopy in detail.
 - (b) Give significance of Nuclear magnetic resonance.

OR

- (a) Give Brief notes on X-ray diffraction.
- (b) Give Brief notes on mass spectroscopy.

4 Answer the following : **7×2=14**

- (a) Describe in brief Gas Chromatography.
- (b) Discuss the principle of HPLC and its advantages.

5 Answer the following : (any two) **7×2=14**

- (a) Give Brief notes on principles and applications of Centrifugation techniques.
 - (b) Describe in brief Electrophoresis.
 - (c) Describe in brief 2D-PAGE and their uses in protein research.
 - (d) Describe in brief Blotting Techniques.
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