



PAT-003-1182004

Seat No. _____

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

August - 2020

ZOO-210 : Analytical Techniques

Faculty Code : 003

Subject Code : 1182004

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

[Total Marks : 70

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

- (a) Name two types of true fluorescence. Define them.
- (b) Write the principle of Centrifugation.
- (c) Write the difference between progressive and regressive staining.
- (d) Define spectroscopy with examples.
- (e) Give difference between wide field and confocal fluorescence microscope.
- (f) Write the principle of Anion exchange chromatography.
- (g) Briefly describe the annular diaphragm and phase plate in phase contrast microscope.
- (h) Write the names of column use in HPLC.
- (i) Write a note on Stoke's shift.
- (j) Write few applications of southern blotting.

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

- (a) Briefly describe the GC-MS technique and its application.
- (b) Briefly explain the methods and applications of Western Blotting technique.
- (c) Write a short note on principles and applications of the Phase Contrast Microscopy.

- 3** Answer the following : **7×2=14**
- (a) Write a brief note on centrifugation techniques and their uses
 - (b) Briefly describe the principles and applications of fluorescence microscopy.

OR

- 3** Answer the following : **7×2=14**
- (a) Briefly explain the principle and applications of infra-red spectroscopy
 - (b) Explain the UV-Visible spectroscopy in detail.

- 4** Answer the following : **7×2=14**
- (a) Write a short note on Scanning Electron Microscopy (SEM)
 - (b) Write a note on the tissue fixation and its significance.

- 5** Answer the following : (Any Two) **7×2=14**
- (a) Describe the principles and applications of Autoradiography.
 - (b) Write a brief note on the Transmission Electron Microscopy (TEM)
 - (c) Briefly describe the principles and applications of isoelectric focusing
 - (d) Write a note on the nuclear magnetic resonance (NMR) and its applications.
