



MCC-003-1182004

Seat No. _____

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

April / May - 2018

ZOOL-210 : Zoology
(Analytical Techniques)

Faculty Code : 003

Subject Code : 1182004

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

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Numbers in the right margin indicate marks.

1 Answer the following very briefly : (any **seven**) **2×7=14**

- (a) Define stain and dye giving examples.
- (b) Write the names of few simple fixatives.
- (c) Write the name of anion and cation exchanger.
- (d) Why the vacuum tube is used in TEM and SEM ?
- (e) Write the names of columns generally used in HPLC.
- (f) Write few applications of autoradiography.
- (g) Write few applications of 2D-PAGE.
- (h) Write the steps of affinity chromatography for protein separation.
- (i) Define spectroscopy.
- (j) Name few applications of the infrared spectroscopy.

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

- (a) Briefly describe the principles and applications of HPLC.
- (b) Explain the applications of infrared spectrophotometry.
- (c) Briefly explain few centrifugation techniques and their uses.

3 Answer the following : **7×2=14**

- (a) Write a short note on the fluorescence microscopy citing its applications.
- (b) Write a short note on ion exchange chromatography and its applications.

OR

3 Answer the following : **7×2=14**

- (a) Describe the principles and applications of Phase Contrast Microscopy.
- (b) Write a brief note on the principles of GC-MS and its applications.

4 Answer the following : **7×2=14**

- (a) Write a note on few fixative mixtures, their composition and application.
- (b) Briefly explain the method of TEM and its applications in biological sciences.

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

- (a) Describe the principles and applications of isoelectric focusing.
 - (b) Write a brief note on the principles and applications of SEM.
 - (c) Describe the principles and application of Gel Filtration Chromatography.
 - (d) Describe the principles and applications of Autoradiography.
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