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MCC-003-019204 Seat No. _____

M. Sc. (Microbiology) (Sem. II) (CBCS) Examination

April / May - 2018

MICRO-210 : Analytical Techniques

(Old Course)

Faculty Code : 003

Subject Code : 019204

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

Instruction : All questions are compulsory. Support your answers with suitable illustrations where required.

1 Answer any **seven** out of the following 10 Questions **10**
(2 Marks each)

(1) Write principle of ion exchange chromatography.

(2) Comment on anion and cation exchangers"?

(3) What is PI of protein ?

(4) Write comments on Northern Blotting

(5) Comment on TEM?

(6) What is the significance of X-Ray Crystallography in Biology ?

(7) What is IR Spectroscopy?

(8) Write comments on the fluorescent microscopy.

(9) What is spectroscopy?

(10) What is UV-Visible Spectroscopy?

2 Write detailed comments on any **two** of the following : **14**
(7 marks each)

(A) Principle and biological applications of autoradiography

(B) Gel permeation chromatography

(C) Affinity chromatography

3 Answer the following : (7 marks each) **14**

(A) Discuss the theory and biological applications of SEM.

(B) Discuss the process of ionization and its applications in biology.

OR

3 Answer the following : (7 marks each) **14**

(A) Discuss principle and biological applications of phase contrast microscopy.

(B) Discuss the theory and biological applications of TEM.

4 Answer the following : (7 marks each) **14**

(A) Discus the principle, process and significance of tissue staining.

(B) Discuss principle and biological applications of NMR.

5 Write detailed comments on Any **Two** of the followings : **14**
(7 marks each)

(A) Blotting techniques with reference to nucleic acids

(B) SDS and Native Gel Electrophoresis

(C) HPLC and FPLC

(D) Determination of molecular weight of proteins