Seat No. _____

HQ-003-1192004

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

April - 2023

MICRO - 210 : Analytical Techniques

Faculty Code : 003

Subject Code : 1192004

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

1 Answer the following : (any Seven) **2×7=14**

a. What is electromagnetic radiation?

b. What is phosphorescence?

c. Define absorption and emission.

d: Give applications of IR.

e. What is ionization?

f. Enlist the name of column used in HPLC.

g. What is nuclear emulsion?

h. Define the quadrupole mass analyzer.

i. Write the name of anion and cation exchangers.

j. Describe autoradiography.

2 Answer the following (any Two) **2×7=14**

a. Briefly discuss the principle and applications of phase contrast microscopy.

b. Describe the differences between SEM and TEM.

c. Write a short note on tissue fixation and staining techniques.

3 Answer the following : **2×7=14**

a. Briefly discuss about LC-MS/MS.

b. Give a general account on affinity and reverse phase chromatography.

OR

a. Write a detailed note on X-ray diffraction technique.

b. Discuss fluorescence microscopy.

4 Answer the following : **2×7=14**

a. Write a short note on HPLC.

b. State principle and applications of GC-MS.

5 Write a short note on : (any Two) **2×7=14**

a. Isoelectric focusing

b. Blotting techniques

c. 2D-PAGE

d. Centrifugation.

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