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Total No. of Pages : 02

Total No. of Questions : 11

M.Sc. (Medical Microbiology) (Sem-2)

MEDICAL BIOTECHNIQUES

Subject Code : MMB-203-21

M.Code : 92126

Date of Examination: 30-05-2023

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

SECTION-A

1. Write Briefly :

- a) Difference between relative centrifugation force and rotation per minute?
- b) Types of gels used in gel electrophoresis?
- c) Define isoelectric focusing?
- d) Application of UV and IR Spectroscopy?
- e) Importance of atomic absorption spectroscopy?
- f) Distinguish between 1D and 2D NMR.
- g) Define ^1H NMR and ^{13}C NMR?
- h) Distinguish between TLC and HPTLC?
- i) What is ascending and descending chromatography?
- j) What is radioisotopes?

SECTION-B

2. Describe the preparative and analytical centrifugation.
3. What is gel electrophoresis? Explain in detail the capillary electrophoresis.
4. Explain the IR spectroscopy and describes the ranges of functional groups.
5. Describes the Principle and application of fluorescence microscopy.
6. Difference between TEM and SEM.
7. Explain in detail principle and application of column chromatography
8. Describes the Gas chromatography with application.
9. Explain radioactivity and application in biological sciences.

SECTION-C

10. What is flow cytometry? Explain in detail about the application of flow cytometry in biological sciences.

OR

Write a note on instrumentation, column, detectors and application used in the HPLC.

11. Describe in detail about basic principle, instrumentation and reference standards used in NMR spectroscopy.

OR

What is radioactivity? Describe the application of radioisotopes in biological sciences.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.