

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

SEMM-218

M.Sc. (IInd Semester) Examination, 2022

MICROBIOLOGY

Paper - FS-MIC-CC-202

(Bioinstrumentation)

Time : 1½ Hours]

[Maximum Marks : 40

Note :- The question paper contains three Sections.

Section-A (Marks : 1 × 10 = 10)

Note :- Answer all the *ten* questions (Answer limit **50** words). Each question carries **1** mark.

Section-B (Marks : 3 × 5 = 15)

Note :- Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

Section-C (Marks : 5 × 3 = 15)

Note :- Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) What is dry heat sterilization ?
- (ii) Write the principle of phase contrast microscope.

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- (iii) What do you mean by differential staining ?
- (iv) Explain isoelectric focusing.
- (v) Write the λ_{\max} for DNA.
- (vi) How will you visualize of DNA fragments ?
- (vii) What do you mean by isopycnic centrifugation ?
- (viii) How will you prepare sample for GC ?
- (ix) What is TLC ?
- (x) What is SDS ?

Section-B

Unit-I

- 2. Discuss the sample preparation of electron microscope.
- 3. Discuss the methods of moist heat sterilization.
- 4. Write the applications of fluorescent microscope.

Unit-II

- 5. What do you mean by supporting medium for electrophoresis ?
- 6. Discuss the Beer-Lambert law.
- 7. Write the applications of spectroscopy.

Unit-III

- 8. Explain the ion exchange chromatography.
- 9. How will you operate pH meter ? Describe whole procedure.
- 10. Discuss preparative centrifuges.

Section-C

Unit-I

11. Differentiate between SEM and TEM.
12. Discuss the confocal microscope.

Unit-II

13. Discuss the different components of spectrophotometer.
14. Write the principle and applications of atomic absorption spectroscopy.

Unit-III

15. What is HPLC ? Write its working principle and applications.
16. Write a short note on GC.