

PE-278-CV-19

M.Sc. MICROBIOLOGY (2nd Semester)

Examination, June 2022

BIOINSTRUMENTATION & BIOCHEMICAL TECHNIQUES

Time : Three Hours]

[Maximum Marks : 80

[Minimum Pass Marks : 29

Note : Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

Section-A

1. Answer the following objective type questions:

1x10=10

- (a) Which lens is oil immersion lens?
- (b) What are standard conditions of autoclaving?
- (c) In which instruments liquids cannot be sterilized?
- (d) Who invented chromatography technique?
- (e) Which technique is better than layer chromatography or paper chromatography?
- (f) Are the principles of colorimeter and visible spectrophotometer same? Yes/no.
- (g) Can a neutral ion show electrophoretic mobility?
- (h) Which membrane is used in southern blotting?
- (i) Which technique is used to find genetic relatedness?
- (j) Name any one solvent used for extraction of proteins?

2. Answer the following short type questions:

2x5=10

- (a) Write the principle of centrifugation.
- (b) Write differences between autoclave and hot air oven.
- (c) Draw ray diagram of Fluorescent Microscope.
- (d) What is partition coefficient?
- (e) Write note on Western blotting.

Section-B

15x4=60

Solve any one question from each unit:

UNIT-I

3. Describe construction, working and application of Autoclave.

OR

Write notes on:-

- a). Colony counter b). pH meter

UNIT-II

4. Describe the principles used in optical microscope /light microscope.

OR

Describe affinity chromatography in detail.

UNIT-III

5. Describe the IR spectroscopy in detail.

OR

Write notes on:-

- a). AAS Atomic absorption spectroscopy b). Flame spectrophotometry

UNIT-IV

6. Describe GC-MS in detail.

OR

Write short notes on:-

- a). DNA analysis b). Worms X-ray diffraction.