19. (a) Point out the principle of Ion exchange chromatography.

Or

- (b) Write an essay about 2D gel electrophoresis.
- 20. (a) Write short notes on about plasmids.

Or

(b) Describe colony hybridization.

SECTION C —  $(3 \times 10 = 30)$ 

Answer any THREE questions.

- 21. Point out the various steps of specimen preparation and in freezing microtome.
- 22. Describe the principle and application of AAS.
- 23. Explain the principle and application of TLC.
- 24. Briefly explain the principle of pulse field gel electrophoresis
- 25. Describe the working principle and applications of PCR.

S.No. 6933

P 22 MBE 1 A

(For candidates admitted from 2022-2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Microbiology — Elective

## BIOLOGICAL TECHNIQUES

Time: Three hours Maximum: 75 marks

SECTION A — (20 marks)

Answer ALL questions.

- I. (A) Multiple choice questions:  $(5 \times 1 = 5)$
- 1. used as fixative in electron microscope
  - (a) Glutaraldehyde
- b) Osmium Tetroxide

(c) Gold

- (d) Both (a) and (b)
- 2. G.M counter used for counting ————samples
  - (a) Radioactive
- (b) Liquid

(c) Solid

(d) All the above

3.	material from another by washing	II.	Ans	wer ALL questions: $(5 \times 2 = 10)$
	(a) Separation (b) Elution	11.	Men TEM	tion the different application of SEM and I.
	(c) Extraction (d) All the above	12.	Wha	at is Biosensor?
4.	Pulse field electrophoresis used for separation of molecules.	13.	Note	e down the types of Gel Electrophoresis.
	(a) DNA (b) RNA	14.	Defi	ne rocket immune diffusion.
	(c) Plasmids (d) ALL	15.	Wha	at is the use of Blue – White?
5.	Molecular scissors are otherwise known as		SECTION B — $(5 \times 5 = 25)$	
			Answer ALL questions, choosing either (a) or (b).	
	(a) Restriction endonuclease	16.	(a)	Briefly explain about the principle and uses of fluorescence microscope.
	(b) Gyrase			Or
	(c) DNA ligase		<i>a</i> >	
	(d) Helicase		(b)	Describe polarization microscope.
	(B) Fill in the blanks: $(5 \times 1 = 5)$	17.	(a)	Describe the principle and application of conductimetric meter.
6.	In SEM resolution limit is ————			Or
7.	GM counter used to study the ———— object		(b)	Explain the principle and application of G.M.
8.	What is the pH range of C <sub>18</sub> column in HPLC	18.	(a)	What is the principle of GC and their application?
9.	Buffer is used in SDS – PAGE			Or
10.	Sothern blotting used to detect ——————————————————————————————————		(b)	Explain the column of HPLC.
	2 S.No. 6933			3 S.No. 6933