

**Yashwantrao chavan college of Science, Karad, B.Sc. (Part-III)
(paper IX)
BIOCHEMICAL TECHNIQUES**

Question Bank

Q 1) Answer the following questions choosing the correct alternatives given below them

1) In isopycnic density gradient centrifugation , separation depends upon the ----- of the particle

- | | |
|---------------------------|-----------------|
| a) buoyant density | b) color |
| c) thickness | d) shape |

2) In ----- chromatography, separation of charged particles takes place.

- | | |
|--------------------|------------------------|
| a) affinity | b) ion exchange |
| c) HPLC | d) Gas liquid |

3) Ampholytes are used in -----

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|--|-------------------------------|
| a) SDA-PAGE electrophoresis | b) RNA electrophoresis |
| c) DNA sequencing electrophoresis | d) Isoelectrofocussing |

4) In ----- method of radioactivity measurement, primary and secondary fluorors are used.

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|---------------------------|----------------------------|
| a) Autoradiography | b) Gas ionization |
| c) Gas excitation | d) Gas polarization |

5) In ammonium sulphate precipitation, destabilizing effect on protein is called -----

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|-----------------------|-----------------------|
| a) allotropic | b) acidotropic |
| c) chatotropic | d) magnetropic |

6) In ----- chromatography pumping systems play an important role.

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|--------------------------|------------------------|
| a) gel filtration | b) affinity |
| c) HPLC | d) ion exchange |

7) The electrophoresis technique was discovered by -----

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|--------------------|-------------------|
| a) Svedberg | b) Batson |
| c) Cloude | d) Tiselus |

8) In chromatography, the stationary phase can be ----- supported on a solid .

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|---------------------------|-------------------------|
| a) Solid or liquid | b) Liquid or gas |
| c) Solid only | d) liquid only |

- 9) Which technique separates charged particles using electric field ?
- a) Hydrolysis
 - b) Electrophoresis
 - c) protein synthesis
 - d) protein denaturing
- 10) when is electrophoresis is not used ?
- a) Separation of protein
 - b) separation of amino acid
 - c) Separation of lipid
 - d) Separation of nucleic acid
- 11) Which of the following cannot be used for the separation nucleic acids?
- a) SDS- PAGE
 - b) PAGE
 - c) northern blotting
 - d) southern blotting
- 12) The fluorescent dye such Ethidium is used for visualizing DNA. How do ethidium binds to DNA ?
- A) Stacked between histone molecules
 - b) Binds to the nucleotide base
 - c) Intercalated between the stacked bases
 - d) binds to the phosphodiester backbone
- 13) Pulse field gel electrophoresis separates DNA molecules of size-----
- a) 10-20 bp
 - b) 20-30 kb
 - c) 30-50 kb
 - d) 40-50 bp
- 14) Pulse field gel electrophoresis was developed by -----
- a) Collins and John
 - b) Kary Mullis
 - c) Patrick O Farrell
 - d) Schwartz and Cantor
- 15) For the separation of DNA by electrophoresis , which of the following method is commonly used?
- a) Agarose- Vertical
 - b) Agarose – Horizontal
 - c) PAGE – vertical
 - d) PAGE – horizontal
- 16) In SDS-page , migration of protein is effected by -----
- a) Charge of protein
 - b) Size of protein
 - c) Net charge of protein
 - d) All of the above
- 17) Who invented centrifugation ?
- a) Newton
 - b) G.G. Stokes
 - c) Antonin Prandti
 - d) Al- Kindi
- 18) What is use of density gradient centrifugation?
- a) To purify viruses, ribosomes , membranes
 - b) To remove dirt
 - c) To remove fine particles
 - d) To remove large particles
- 19) In centrifugation, which of the following force is not used ?
- a) Electrostatic force
 - b) Gravitational force
 - c) Centripetal force
 - d) Centrifugal force

20) What is the principle of centrifugation?

- a) Sedimentation principle**
- b) Filtration principle**
- c) Evaporation principle**
- d) Size reduction principle**

Q 2) Long Answer

- 1) Define centrifugation, Describe types of centrifugation
- 2) Define chromatography and describe in brief gel filtration method
- 3) Write principle, methodology and application of Ion exchange chromatography
- 4) Write principle of electrophoresis and describe Agarose gel electrophoresis?
- 5) Write a note on tracer technique
- 6) Explain applications of radioisotope in biological sciences

Q 3) Short Answer

- 1) Write note on cell disruption methods
- 2) Salt precipitation
- 3) Affinity chromatography
- 4) High performance Liquid chromatography (HPLC)
- 5) SDS-PAGE electrophoresis
- 6) Pulsed field gel electrophoresis
- 7) Application of radioisotopes in biological system
- 8) Isoelectric focusing
- 9) Organic solvent precipitation
- 10) Gas liquid chromatography (GLC)
- 11) Types of centrifuge

