

- (ix) There are two types of scattering in FACS
 a) Forward scattering
 c) Backward scatter
 b) side scatter
 d) Both and b
- (x) The half life of a radioisotope is _____
 a) half the time taken for complete decay
 c) time taken for complete decay
 b) half the time taken for half the decay
 d) time taken for half the decay
- (xi) Rem refers to
 a) biological damage measurement caused by radiation
 c) Electrolyte measurement in body
 b) water content measurement in human
 d) None of these
- (xii) Bacquerel is a
 a) unit of light energy
 c) Types of radiation
 b) unit of radioactivity
 d) half-life of radioisotope
- (xiii) Place the following reactants in their proper order for the indirect ELISA test 1 = enzyme-linked antibody 2 = known antigen 3 = patient serum 4 = substrate
 a) 2413
 c) 1432
 b) 3214
 d) 2314
- (xiv) Isoenzymes be separated by
 a) Column chromatography and Ion exchange chromatography.
 c) Gel electrophoresis and Column chromatography.
 b) Gel electrophoresis and Ion exchange chromatography
 d) Electron Microscopy
- (xv) Name the type of density gradient centrifugation used for?
 a) Purification of viruses, ribosomes, and membranes
 c) To remove dirt
 b) To remove small particles
 d) To get rid of big particles

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Compute the principle of density gradient centrifugation (3)
3. Explain the principle of FACS (3)
4. Differentiate between GPC and GC (3)
5. Explain the diagnosis of thalassemia using HPLC Technique. (3)
6. Analyze the various detection methods used in HPLC and their advantages and disadvantages. (3)

OR

In an experiment sample A and B containing genomic RNA was measured through UV spectrometry at 540 nm wavelength. Analyze the result (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Illustrate the principle of AGAROSE GEL electrophoresis process and indicate its significance. (5)
8. Evaluate the half-life hours of Technitium-99m has decay constant of $3.2 \times 10^{-5}/s$. (5)
9. Deduce the mathematical expression of RCF and Explain why it is unitless (5)
10. Predict the advantages of using HPLC for thalassemia detection compared to other methods? (5)
11. Interpret whether paper chromatography be used for blood storage purpose? (5)
12. In case of Reverse phase chromatography the elute molecules are separated based on their polarity justify with proper explanation. (5)

OR

Apply ELISA technique to estimate T4 in clinical diagnosis

(5)
