



Basic Principles of Chromatography and Operational technique

16 Questions

NAME : _____

CLASS : _____

DATE : _____

1. Which of the following techniques can be used to separate gaseous substances into their individual components in a calibrated column?

- a) Thin layer chromatography
- b) High pressure liquid chromatography (HPLC)
- c) Gas liquid chromatography (GC)
- d) Column chromatography

2. Characteristic feature of any type of chromatography:

- a) Involves use of molecules that are soluble in water
- b) Always involves the use of carrier gas
- c) Involves the use of mobile and stationary phases
- d) Can determine the retardation factor for separated components.

3. The amount of time taken for a separated analyte to pass through the column to reach the detector:

- a) Retention time
- b) Dead time
- c) Selectivity factor
- d) Relative time

4. Detectors used in Gas Chromatography (GC)

- a) Photo ionization detectors
- b) Refractive index detector
- c) Electrochemical detectors
- d) None of the above

5. Factors that influence separation of components in GC

- a) Carrier gas flow rate
- b) Column length/column temperature
- c) Amount of material injected
- d) All of the above

6. Isocratic elution in HPLC

- a) Mobile phase composition is varied during the separation process
- b) Stationary phase and mobile phase compositions are kept constantly during separation process
- c) Mobile phase composition is kept constant during the separation process
- d) None of the above

7. All chromatography techniques are used to separate, identify and quantify separated analytes in a mixture. Is this statement **True or False**?

8. Which of the following best describes packed column in GC

- a) Stationary phase is coated in the inner wall of the column
- b) Mobile phase is coated on the column
- c) Stationary phase is coated directly in the column
- d) None of the above

9. Low retention time of separated components in liquid chromatography implies that:

- a) Components have more affinity to the mobile phase
- b) Components have more affinity to the stationary phase
- c) Components interact more with the stationary phase
- d) All of the above

10. Reverse phase HPLC:

- a) Stationary phase is polar and mobile phase is non polar
- b) Stationary phase is non polar and mobile phase is moderately polar
- c) Hydrophobic analytes are less retained
- d) More polar analytes are more retained

11. Common detector(s) used in HPLC

- a) Refractive index detector
- b) Thermal conductivity Detector
- c) Ultra Violet-Visible detector
- d) (a) and (c)

12. The number of peaks in a chromatogram indicates

- a) How well components in the mixture has been separated
- b) How efficient the column is
- c) Number of components in the mixture
- d) All of the above

13. Which of the following is(are) mobile phases used in GC?

- a) He
- b) Nitrogen
- c) Argon
- d) All of the above

14. Modes of gas inlet in GC:

- a) Split
- b) Inject port
- c) Splitless
- d) (a) & (c)

15. In liquid chromatography the amount of separated components on a chromatogram can be determined from:

- a) Retention time
- b) Peak area
- c) Peak width
- d) Base of peak

16. Major distinction between HPLC and GC

- a) Presence of injection port
- b) Presence of column
- c) Presence high pressure pump
- d) All of the above

Answer Key

- | | | | |
|------|---------|-------|-------|
| 1. c | 5. d | 9. a | 13. d |
| 2. c | 6. c | 10. b | 14. d |
| 3. a | 7. True | 11. d | 15. b |
| 4. a | 8. c | 12. c | 16. c |