Q.21 What is gas chromatography and also explain its principle.

Q.22 Discuss Injector and Over for Liquid chromatography.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Draw and explain block diagram of Analytical Instruments.

Q.24 Explain working principle of UV Spectrophotometer with its diagram.

Q.25 Explain principle of PH meter with suitable diagram.

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Subject : Analytical Instrumentation.

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 AI Expands as _____.
- a) Artificial instruments
- b) Advance instruments
- c) Analytical instruments
- d) Advance Interface

Q.2 Mass spectrometer is used to determine which of the following.
- a) Composition in sample
- b) Concentration of elements in sample
- c) Properties of sample
- d) Relative mass of atoms

Q.3 Which of the following is not used for detection in gas chromatography.
- a) Flame ionization
- b) Infrared spectroscopy
- c) NMR
- d) Electrical conductivity

Q.4 _____is not suitable for use of carrier gas in chromatography.

a) Nitrogen b) Helium

c) Carbon dioxide d) Both a and b

Q.5 Application of Mass spectroscopy is _____.

a) Impurity detection

b) Determination of molecular formula

c) Molecular weight determination

d) All of these

Q.6 In liquid Chromatography mobile phase is_____.

a) Gas b) Liquid

c) Both (a) and (b) d) None of these

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Photo cell is used as detector in Analytical Instruments . True / False

Q.8 The graph of beer Lamberts law will be _____(Positively correlated/ negatively correlated)

Q.9 Define Mass

Q.10 Liquid chromatography is an analytical technique in which the mobile phase is a gas . True / False

Q.11 Food analysis is the application of liquid chromatography. True / False

Q.12 PH meter is used to measure _____.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Discuss various applications of Analytical Instruments.

Q.14 Explain principle of AAS

Q.15 Discuss column and detectors used in Gas chromatography.

Q.16 Describe applications of liquid chromatography.

Q.17 Explain PH meters.

Q.18 Discuss signal conditioner and transducer as a elements of Analytical Instruments.

Q.19 Explain Electrochemical Analyser.

Q.20 Explain applications of FTIR.