Q.18 Explain the electro-chemical analysis.

Q.19 Discuss the instrumentation used for HPLC.

Q.20 Discuss glass electrode used for PH meter.

Q.21 Discuss signal conditioning unit as an element of analytical instruments.

Q.22 Discuss the FTIR spectroscopy.

SECTION-D

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

Q.23 Draw and explain block diagram of analytical instruments.

Q.24 Explain PH measurement with suitable diagram.

Q.25 Discuss liquid chromatography with suitable diagram.

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Sub. : Analytical Instrumentation

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (6x1=6)

Q.1 Signal conditioner is used to

a) Convert output of a transducer into electrical quantity.

b) Amplify signal

c) Increase sensitivity

d) All of these

Q.2 The last two elements constitute the _____.

a) Characteristics module

b) Processing module

c) Display unit

d) None of these

Q.3 Which of the following is not used for detection in gas chromatography

a) Flame ionization b) NMR

c) Infrared spectroscopy d) Electrical conductivity

Q.4 PH of water is _____.

a) 6 b) 4

c) 7 d) 13

Q.5 Pure water is known to be which of the following

a) Strong electrolyte

b) Weak electrolyte

c) Neither strong nor weak electrolyte

d) None of these

Q.6 In liquid chromatography mobile phase is _____.

a) Liquid b) Gas

c) Solid d) None of these

SECTION-B

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

Q.7 Detector is a part of UV spectroscopy. True/False

Q.8 Expand AAS?

Q.9 HPLC expands as high performance liquid chromatography. (True/False)

Q.10 Galvanic cells converts chemical potential energy into electrical energy. (True/False)

Q.11 Define Sample.

Q.12 Nebulizer creates a fine spray of the sample. (True/False)

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 Beer-Lambert's law.

Q.15 Discuss various applications of AAS.

Q.16 Write a short note on injector and oven for liquid chromatography.

Q.17 Explain gas chromatography.