Q.26 Explain absorption spectroscopy.

Q.27 Explain different types of electrodes used for pH measurement.

Q.28 Write applications of NMR spectroscopy.

Q.29 Write down advantages and disadvantages of gas chromatography.

Q.30 Explain principle of pH measurement in brief.

Q.31 How Arduino can be used for monitoring the quality of water pollution.

Q.32 Write a short note on analytical Instruments.

Q.33 Discuss air pollution monitoring Instruments.

Q.34 Explain oven used in chromatography.

Q.35 Write the various applications & advantages of electro-chemical cell.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Define chromatography. Classify it and explain gas chromatography in detail.

Q.37 Explain noise pollution and its monitoring in detail.

Q.38 Draw and explain thermal conductivity analyzer with their application.

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5th Sem / Branch : IC, EI
Sub.: Analytical and Environmental Instruments

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 A pH value less than 7.0 means that the solution is_____.

a) Conductive b) Acidic

c) Alkaline d) Neutral

Q.2 Unit of Sound:

a) Decibel b) Omega

c) Joule d) Watt

Q.3 Conductivity is defined as the ability to carry_____.

a) Voltage b) Resistance

c) Current d) All of the above

Q.4 The reciprocal of conductivity is _____.

a) Viscosity b) Resistivity

c) Turbidity d) None of these

Q.5 Range of pH is_____.

a) 0-14 b) 0-20

c) 7-14 d) 0-7

Q.6 pH meter has very high resistance.

a) True b) False

Q.7 Mass spectrometer are used to determine which of the following?

a) Composition PH sample

b) Concentration of elements in sample

c) Relative Mass of atoms

d) Properties of sample

Q.8 LED is a display device

a) True b) False

Q.9 Which of the following is the most sensitive method of the spectral methods.

a) Absorption spectroscopy

b) Mass Spectroscopy

c) Flame emission spectroscopy

d) Atomic emission spectroscopy

Q.10 Which of the following gases is unsuitable for use as a gas chromatography carrier gas?

a) Nitrogen b) Helium

c) Oxygen d) All of these

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 LED.

Q.12 Amplifier.

Q.13 Two sources of noise pollution.

Q.14 Two percentage gases.

Q.15 Conductivity.

Q.16 Name the electrodes used for PH measurement.

Q.17 AEI is used for_____.

Q.18 Spectroscope.

Q.19 pH.

Q.20 List two sources of noise pollution.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain conductivity meter.

Q.22 How water pollution monitoring is done?

Q.23 Explain thermal conductivity analysis.

Q.24 Discuss role of oven used in chromatography instruments.

Q.25 Explain types of electrodes used in electrochemical instruments.