Q.29 Discuss the role of the oven used in chromatography instruments.

Q.30 Write down the types of electrodes used in electrochemical instruments.

Q.31 Write about absorption spectroscopy.

Q.32 Write about the conductivity meter.

Q.33 Write down about different types of electrodes used for pH measurement.

Q.34 Write the various applications & advantages of electrochemical cells.

Q.35 Write down about the oven used in chromatography.

Section-D

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

Q.36 Write a short note on the following two:-

a) Infra-red gas analyzer

b) The detector used in gas chromatography

Q.37 What do you mean by spectroscopic analysis? Explain mass spectroscopy in detail.

Q.38 Give detailed block diagrams of IOT-based air, water, gas and noise quality monitoring systems.

Roll No. .....

5th Sem., Branch : IC, EI
Subject : Analytical & Environmental Instruments

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 pH meter has very high resistance

a) True b) False

Q.2 Mass spectrometers are used to determine which of the following?

a) Composition Ph sample

b) The concentration of elements in sample

c) Relative Mass of atoms

d) Properties of sample

Q.3 LED is a display device

a) True b) False

Q.4 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.5 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

Q.6 A pH value less than 7.0 means that the solution is _____.

a) Conductive b) Acidic

c) Alkaline d) Neutral

Q.7 Unit of sound

a) Decibel b) Omega

c) Joule d) Watt

Q.8 Conductivity is defined as the ability to carry_____.

a) Voltage b) Resistance

c) Current d) All of the above

Q.9 The reciprocal of conductivity is _____.

a) Viscosity b) Resistivity

c) Turbidity d) None of these

Q.10 PH of neutral salt

a) 7 b) <7

c) >7 d) 0

Section-B

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

Q.11 List two sources of noise pollution.

Q.12 Define Cell.

Q.13 Define Spectroscope.

Q.14 Expand pH.

Q.15 Define Pollution.

Q.16 Name two percentage gases.

Q.17 Define LED.

Q.18 Define Amplifier.

Q.19 Write in brief about conductivity.

Q.20 AEI is used for_____.

Section-C

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

Q.21 Give a short note on noise pollution.

Q.22 Write down about the working of Arduino -based air, water, gs and noise quality monitoring systems.

Q.23 Write applications of NMR spectroscopy.

Q.24 Write down the advantages and disadvantages of gas chromatography.

Q25 Write down the principle of pH measurement in brief.

Q.26 Write a short note on analytical instruments.

Q.27 Discuss air pollution monitoring instruments.

Q.28 Write down thermal conductivity analysis.