

- Q.26 Write down about different types of electrodes used for pH measurement.
- Q.27 Write the various applications & advantages of electrochemical cells.
- Q.28 Write down about the oven used in chromatography.
- Q.29 Write applications of NMR spectroscopy.
- Q.30 Write down the advantages and disadvantages of gas chromatography.
- Q.31 Write down the principle of pH measurement in brief.
- Q.32 How water pollution monitoring is done?
- Q.33 How Arduino can be used for monitoring the quality of water pollution.
- Q.34 Write a short note on analytical Instruments.
- Q.35 Discuss air pollution monitoring Instruments.

SECTION-D

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

- Q.36 Explain noise pollution and its monitoring in detail.
- Q.37 Define chromatography. Classify it and explain gas chromatography in detail.
- Q.38 What do you mean by spectroscopic analysis? Explain mass spectroscopy in detail.

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5th Sem / IC, EI

Subject:- 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 The range of pH is _____.
- | | |
|---------|---------|
| a) 0-14 | b) 0-20 |
| c) 7-14 | d) 0-7 |

- Q.6 PH of neutral salt.
- a) 7 b) <7
c) >7 d) 0
- Q.7 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.8 LED is a display device.
- a) True b) False
c) A & B d) None of the above
- 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 suitable for use as a gas chromatography carrier gas?
- a) Nitrogen b) Helium
c) Oxygen d) All of these

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SECTION-B

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

- Q.11 Name the electrodes used for pH measurement.
- Q.12 List two sources of water pollution.
- Q.13 Name two percentage gases
- Q.14 Define LED
- Q.15 Define Amplifier
- Q.16 Write in brief about conductivity
- Q.17 AEI is used for _____
- Q.18 Define Spectroscope
- Q.19 Expand pH.
- Q.20 Define Pollution.

SECTION-C

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

- Q.21 Write down thermal conductivity analysis.
- Q.22 Discuss the role of the oven used in chromatography instruments.
- Q.23 Write down the types of electrodes used in electrochemical instruments.
- Q.24 Write about absorption spectroscopy.
- Q.25 Write about the conductivity meter.

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