

BE Semester- V (Instrumentation and Control Engg.)

Question Bank

(IC 504 Transducers)

All questions carry equal marks(10 marks)

Q-1	Define: 1)accuracy, 2)linearity, 3) reproducibility, 4) repeatability, 5)drift, 6) span, 7) sensitivity, 8)threshold, 9)backlash, 10) dead zone
Q-2	Explain Ring-balance and Bell-type manometers in detail with equations.
Q-3	Write a short note on Torsion Bar.
Q-4	Explain Density measurement using Air-bubbler system and U-tube manometer system.
Q-5	Explain Viscosity-to-Pressure converter and viscosity-to-Torque converter.
Q-6	Write a short note on Thermal Conductivity Gauge.
Q-7	Derive the equation of Gauge Factor. Explain the temperature compensation technique for Strain Gauges.
Q-8	Explain Inductive Thickness Transducers with diagrams.
Q-9	Write a short note on Strain Gauge Accelerometer.
Q-10	Write a short note on Hall-Effect transducer.
Q-11	Explain Mc-leod gauge with merits & limitations.
Q-12	Explain the LVDT with it's advantages & disadvantages.
Q-13	Explain Rotameter and Electromagnetic Flow meter in detail with diagram.
Q-14	Explain Thermistor and RTD in detail.
Q-15	What is a Pressure switch? Explain in brief. What are the uses of pressure switches?
Q-16	Draw a neat sketch to show the essential parts of a Bourdon tube pressure gauge. Describe the purpose of each part. Also describe the various adjustment schemes for it.
Q-17	With a neat sketch, Explain the construction, working, advantages and disadvantages of Ultrasonic vibration method of thickness measurement.
Q-18	Define the term pH. Explain the working principle of pH measurement. State the application, advantages and disadvantages for pH meters.
Q-19	Why is the viscosity measurement important for Industrial processes? Explain in detail, the working principle of Industrial Viscosity meter with neat sketch and associated applications.
Q-20	List the various types of speed – measuring devices. Explain the Contactless Tachometer in detail.
Q-21	Classify the methods for liquid level measurement. Describe the Float type level indicator in detail ,with advantages and disadvantages.
Q-22	Describe the optical method type level detectors with working, construction, application, advantages and disadvantages.
Q-23	What is a thermocouple? Classify the types of them. State the applications,

	advantages, disadvantages and calibration procedure for thermocouples.
Q-24	What is Black body radiation? Explain radiation pyrometer in detail.
Q-25	Explain construction, working and advantages of Load Cell.
Q-26	Draw the block diagram of an Instrument System and explain the functions of different functional elements. Make the block diagram showing the functional elements of a Pressure Gauge.
Q-27	State electrical methods of liquid level measurement. Explain any one of them in detail with its advantages and disadvantages.
Q-28	Explain Piezo-electric method of thickness measurement
Q-29	What is Hydrometer? What are the advantages and disadvantages of using hydrometer?
Q-30	Define the term 'Calibration'. Mention the steps to calibrate an instrument.
Q-31	Explain hydraulic forcemeter with it's advantages.
Q-32	Explain the capacitive level indicator with it's advantages & disadvantages.
Q-33	Explain laser diameter gauge for measure the diameter.
Q-34	Explain the radiation level detector for level measurement.
Q-35	What is the orifice plate ? Explain the various types of orifice plates.
Q-36	Explain the construction & working of pirani gauge.
Q-37	Given the comparison of RTD, Thermistor and Thermocouple— temperature measurement devices.
Q-38	What do you mean by pressure? Define absolute pressure, gauge pressure and vacuum pressure. Also given the relationship among them (in term of conversion).
Q-39	Explain A.C. tachometer with diagram.
Q-40	List out various quantity flowmeters. Explain any one of them with details of construction, operation, principle and application.