

BE Semester- VII
(Instrumentation & Control Engg)
Question Bank

(IC 705-Elective I Instrumentation for Nanotechnology)

All questions carry equal marks (10 marks)

Q.1	Discuss the basic principle of ultrasound sensor with its selection criterion.
Q.2	Mention different issues related to ultrasound sensor and its application.
Q.3	Explain optical sensors with its basic principle of operation.
Q.4	Describe issues related to optical sensors with its application.
Q.5	Discuss the selection criterion of solid state micro sensor in detail with its application.
Q.6	What is solid state micro sensor? Briefly describe the issues related to sensor technology.
Q.7	Explain the basic principle of quartz crystal sensor. Discuss its selection criterion.
Q.8	Discuss various issues related to quartz crystal sensor with its application.
Q.9	What is sensor? Explain the types of sensors.
Q.10	Discuss the issues related to nano range signal conditioning.
Q.11	Explain the mechanism for nano ampere measurement.
Q.12	Describe the process of nano volt measurement.
Q.13	Discuss the role of digital signal processing in nanotechnology signal conditioning.
Q.14	Describe the amplifier design for nano signal. Also mention the criteria for selection of component for this application.
Q.15	Discuss TEM (Tunneling Electron Microscope) with detailed block diagram.
Q.16	Describe AFM (Atomic Force Microscope) instrument with its basic principle of operation.
Q.17	Write a short note on TEM (Tunneling Electron Microscope)
Q.18	Explain the role of mathematical modeling of nano instruments.

Q.19	Discuss nano control system in detail.
Q.20	Explain the significance of GUI in nanotechnology instruments.
Q.21	Discuss the needs of GUI and its ergonomics in nanotechnology application.
Q.22	Explain the role of nanotechnology in instrumentation & control field.