



First Semester B.E./B.Tech. Degree Examination, June/July 2026
Introduction to Nano Technology

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Define Nano Technology and explain its importance as a frontier of future technology.	10	L2	CO1
	b.	Explain Sol-Gel method with advantages and limitations.	10	L2	CO1
OR					
Q.2	a.	Compare Hydrothermal method and SILAR technique. Explain briefly chemical bath deposition.	10	L2	CO1
	b.	Describe sputtering technique for thin film deposition.	10	L2	CO1
Module – 2					
Q.3	a.	Explain the basic principle and construction of Transmission Electron Microscope (TEM).	10	L2	CO2
	b.	Compare SEM and TEM based on resolution, magnification and application.	10	L4	CO2
OR					
Q.4	a.	Compare AFM and STM highlighting advantages and limitations.	10	L3	CO2
	b.	Describe UV-visible spectrography and its applications.	10	L2	CO2
Module – 3					
Q.5	a.	Explain the properties and applications of Graphene.	10	L1	CO3
	b.	Explain the structure and characteristics of Multi Walled Carbon Nanotubes. (MWCNT).	10	L2	CO3

OR

Q.6	a.	Discuss applications of CNT in nanotechnology and medicine.	10	L2	CO3
	b.	Explain carbon nano composites and their applications. Also name the applications of nano disc.	10	L1	CO3

Module – 4

Q.7	a.	Compare different generators of solar cells highlighting advantages, limitations and future scope.	10	L4	CO4
	b.	Discuss the construction and working of Dye sensitized solar cell with neat diagram.	10	L3	CO4

OR

Q.8	a.	Explain working principle of Lithium-ion battery with suitable diagram.	10	L3	CO4
	b.	Describe the role of nanotechnology in hydrogen storage system.	10	L3	CO4

Module – 5

Q.9	a.	Explain the concept of nanotechnology and discuss the significant impact of nanomaterials on modern science and engineering.	10	L2	CO5
	b.	Discuss applications of nanotechnology in medicine and health care, including drug delivery and diagnostics.	10	L3	CO5

OR

Q.10	a.	Analyze the advantages and ethical concern associated with nanobiotechnology.	10	L4	CO5
	b.	Discuss applications of nanotechnology in agriculture and food industry. Analyse benefits in food processing and packaging.	10	L2	CO5
