

Model Question Paper
Total Duration (H:M):3:00
Course: Robotics and Automation (BMET – 078)
Maximum Marks: 100

Q.No	Questions	Marks	CO	BL	PI
1a	With the help of neat sketch explain the robot anatomy.	5	CO1	L1	
1b	Explain robot actuation and control methods with block diagrams.	5	CO1	L4	
1c	Differentiate joint space trajectory and Cartesian trajectory planning.	5	CO1	L3	
1d	Write short notes on any about the following i) Asimov's laws of robotics ii) Degrees of freedom	5	CO1	L1	
2a	Explain the static and dynamic characteristics of sensors.	5	CO2	L12	
2b	Write the homogenous transform matrix for a rotation of 90° about the z axis followed by a rotation of -90° about the x axis, followed by a translation of (3, 7, 9).	5	CO4	L5	
2c	What are the different types of material handling operation?	5	CO4	L1	
2d	List the advantages and benefits of robot arc welding.	5	CO3	L2	
3a	Write short notes on any about the following i) Robot applications in manufacturing. ii) Robot cell design iii) Robot cell layouts. iv) Selection of a robot	10	CO3	L1	
3b	Sketch and explain the four basic robot configurations classified according to the coordinate system.	10	CO5	L6	
4a	Explain the following terms with sketches : i.) Spatial resolution ii.) Accuracy iii.) Repeatability	10	CO2	L2	
4b	Explain the capabilities and limitations of lead through robot programming method.	10	CO3	L1	
5a	With block diagram representation, explain the function of a machine vision system.	10	CO2	L2	
5b	What are the different levels of image processing? Mention different methods of image processing.	10	CO2	L3	