

CBCS SCHEME

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BMT602

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2026

Industrial Robotics



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.	What is Robot Anatomy? Explain with neat sketch any 2 types of configuration in industrial robots.	10	L2	CO1
	b.	Discuss the three features related to precision of movement with respect to robots.	10	L2	CO1
OR					
Q.2	a.	Explain different types of robot control system.	10	L2	CO1
	b.	Derive the mathematical model and transfer function equation for spring mass damper system.	10	L2	CO1
Module – 2					
Q.3	a.	What is manipulator path controller? Explain the types of manipulator path controller.	10	L2	CO3
	b.	Discuss with a neat sketch different types of end effectors.	10	L2	CO3
OR					
Q.4	a.	Explain the desirable engineering features of sensors and transducers.	10	L2	CO1
	b.	Briefly explain proximity and range sensor with a neat sketch.	10	L2	CO1
Module – 3					
Q.5	a.	What is motion interpolation? Explain circular interpolation method for robot.	10	L2	CO1
	b.	Discuss the x – y – z co-ordinate motion of defining the positions in space.	10	L2	CO1
OR					
Q.6	a.	Briefly explain the goal of AI research.	10	L2	CO1
	b.	Explain the AI technique with the help of state-space problem representation method.	10	L2	CO1
1 of 2					

Module – 4

Q.7	a.	Discuss the different functions of work cell control suggested by Thomas.	10	L2	CO4
	b.	Explain with neat sketch the basic types of robot cell layouts.	10	L2	CO4

OR

Q.8	a.	What are interlocks? Explain the types of interlocks and its purpose.	10	L2	CO4
	b.	Explain with a neat block diagram, the configuration of PLACE system for simulation and off-line programming of robotic work cell.	10	L2	CO4

Module – 5

Q.9	a.	Discuss with a neat sketch the automatic processing operation of spot welding using robot.	10	L2	CO2
	b.	Explain with the neat sketch the automatic processing operation of spray coating using robot.	10	L2	CO2

OR

Q.10	a.	Explain with a neat sketch single station robotic work cell assembly.	10	L2	CO2
	b.	Discuss with a neat sketch series assembly robotic work cell.	10	L2	CO2

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