

CBCS SCHEME

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BMT755C

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2026 Robotics for Industry

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.	Explain briefly : i) Industrial Robots ii) Robotics iii) Degrees of freedom iv) Work volume v) Payload		5	L2	CO1
	b.	Define Industrial Automation. Explain type of Automation.		8	L2	CO1
	c.	Briefly explain the history of Robotics.		7	L2	CO1
OR						
Q.2	a.	With a neat diagram, explain different configuration of Industrial Robots.		10	L2	CO1
	b.	With explanation describe the advantages, applications and limitations of Robots in Industries.		10	L2	CO1
Module – 2						
Q.3	a.	Draw a neat diagram, and explain the working principle of pneumatic drive systems.		10	L2	CO2
	b.	Write a short note on variable speed arrangements used in Robots.		10	L2	CO2
OR						
Q.4	a.	Compare different drive system used in Robotics.		6	L2	CO2
	b.	With a block diagram, explain the working principles of machine vision sensors.		10	L2	CO2
	c.	Differentiate Sensors and Transducers.		4	L2	CO2

Module – 3						
Q.5	a.	What are End Effectors? Explain the classifications of end effectors.	4	L3	CO3	
	b.	Describe different types of mechanical grippers used in Robots.	8	L2	CO3	
	c.	Evaluate different considerations in gripper selection and design.	8	L3	CO3	
OR						
Q.6	a.	Illustrate a pneumatic circuit and explain control of double acting cylinder.	12	L3	CO2	
	b.	Explain the working of vacuum cup grippers with diagram.	8	L2	CO3	
Module – 4						
Q.7	a.	Describe different advantages and limitation of lead through method of Robot Programming.	10	L2	CO4	
	b.	Describe the importance of Robot Programming and give classification.	10	L2	CO4	
OR						
Q.8	a.	With a block diagram, explain Robot language structure.	10	L2	CO4	
	b.	Explain the concept of motion interpolation in Robot Programming.	10	L2	CO4	
Module – 5						
Q.9	a.	Explain basic elements of Automated System.	6	L2	CO5	
	b.	Describe different types of controller used in Automation.	8	L2	CO5	
	c.	Write a short note on safety in Industrial Automation.	6	L2	CO5	
OR						
Q.10	a.	Explain basic principles of materials handling operations.	10	L2	CO5	
	b.	Explain Robots application in Assembly and inspection with a case study.	10	L2	CO5	