USN			18MR651
	L	Sixth Somester B F. Degree Examination June/July 202	4
		Automation and Industrial Robotics	-
Tim	e: 3	hrs. Max.	Marks: 100
	N	ote: Answer any FIVE full questions, choosing ONE full question from each r	nodule.
		Module-1	
1	a.	With the help of schematic diagram, explain levels of automation.	(10 Marks
	b.	Explain the basic elements of an automated system.	(10 Marks
		OR	
2	a.	What are the differences between levels of automation in the process industry	ries a discrete
		manufacturing industries?	(10 Marks
	b.	With neat sketch, explain the hardware components for automation and prove c	ontrol.
			(10 Marks)
		Module-2	
3	a.	With neat sketch, explain the segmented in line configuration of an automate	ed production
		line.	(10 Marks)
	b.	With neat sketch, explain the types of automated assembly systems.	(10 Marks
		OB	
4	я	With the neat sketch explain general configuration of automated production lin	ne. (10 Marks
•	h.	Write a note on:	
	0.	i) Barcode Technology	
		ii) Radio frequency identification.	(10 Marks
		Madula	
5	9	Explain with sketches robot configuration	(10 Marks
5	a. h	Explain the applications of industrial robots	(10 Marks
	0.	Explain the upprovides of industrial cools.	
		OR	
6	a.	What are end effectors? Explain.	(10 Marks
	b.	Explain robot accuracy and repeatability.	(10 Marks
		Module-4	
7	a.	Explain: i) Orientation ii) Frames.	(10 Marks
	b.	Explain mapping related to special descriptions and transformations position.	(10 Marks
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Q	2	Explain: i) Translational operator ii) Rotational operator iii) Transformati	onal operator
0	a.	Explain. I) Translational operator in Rotational operator in Transformati	(10 Marks
	b.	Explain about transformation of free vectors.	(10 Marks
		Module-5	
9	a.	Explain levels of robot programming.	(10 Marks
	b.	Write a note on robot programming languages.	(10 Marks
		OR	
10	а	Explain offline programming systems.	(10 Marks
10	b.	Explain robot programming.	(10 Marks
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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.