Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION - WINTER 2015

Subject Code: 173402		Code: 173402 Date:16/12	Date:16/12/2015	
Tir	U	Name: Industrial Robotics .0:30am to 1:00pm Total Mar	rks: 70	
	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a) (b)	Enroll the components and explain the robot task planning. Explain the different components of vision system with neat diagram.	07 07	
Q.2	(a)	What are the illumination different techniques in industrial robot? Explain each briefly.	07	
	(b)	Explain the pay back method in robotic? OR	07	
	(b)	Explain EUAC method and Rate of return method.	07	
Q.3	(a) (b)	Explain the AGVs implementation of robots in industries and write its application Explain each AML, VAL, RAIL robot languages briefly. OR	ons. 07	
Q.3	(a) (b)	Compare the RGV and AGV? Why it is necessary to implement robots in indust Draw the basic control block diagram for robot manipulators and explain.	ries. 07	
Q.4	(a) (b)	What is servomotor? Give its types and explain any two. Define and explain end effectors with its different types. OR	07 07	
Q.4	(a)	What is the diversity between the three degrees of freedom against four degrees freedom?	of 07	
	(b)	Which are the different range sensing techniques? Explain any two.	07	
Q.5	(a)	Discuss briefly the following operation covered under image processing: (1) Object recognition, (2) Smoothing, (3) Segmentation.	07	
	(b)	Define Robotics. State law of Robotics and explain advantages, disadvantages a application of robotics?	nd 07	
		OR		
Q.5	(a)	Define the following terms: (1) Wrist, (2) Response time, (3) Pitch motion, (4) Roll motion, (5) Yaw, (6) Degree of freedom, (7) Controller.	07	
	(b)	Enlighten the conception of Forward kinematics and inverse kinematics.	07	
