Total No. of Printed Pages:1

SUBJECT CODE NO:- H-495
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (Mechanical) (Sem-II)
Robotics and Industrial Automation [Elective-II]
(Revised)

[Time:Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1. Answer any three questions from each section.

Section A

Q.1	a)	Explain different types of drives used in robots.	07
	b)	Write about merits and demerits of Hydraulic drive.	06
Q.2	a)	Explain the application of robot in assembly & inspection.	07
	b)	With the help of suitable sketch, explain off line programming method of a robot.	06
Q.3	a)	Explain Trajectory Planning.	07
	b)	Explain importance of Work envelops.	06
Q.4	a)	Define Touch sensors. What are their application?	07
	b)	Explain the concept of image acquisition and illumination techniques in vision system of a robot.	06
Q.5	Write short note on any two		14
	a)	Robot Kinematics	
	b)	Robotic joints	
	c)	Proximity sensors	

Section B

Q.6	a)	What are different types of automation?	07
	b)	Explain optical inspection methods?	06
Q.7	a)	Write about basic PLC programming.	07
	b)	Describe various industrial control applications.	06
Q.8	a)	Explain Logic Control and Sequencing in PLC.	07
	b)	Compare Process Industries and Discrete-Manufacturing Industries.	06
Q.9	a)	What is Automated Material Handling and Storage Systems?	07
	b)	Explain Building blocks of Automation.	06
Q.10	Write short note on any two		14
	a)	AGV	
	b)	FMS	
	c)	Automatic visual inspection	