1430

Code : 15MC62T

Register Number | | | | | | | |

VI Semester Diploma Examination, April/May-2018

ROBOTICS

Time : 3 Hours] **[Max. Marks : 100**

Note : Answer any **six** questions from Part-**A** and **seven** full questions from Part-**B**.

PART – A

Answer any **six** questions.

1. Define Robot, list configuration of robot. **5**

2. Explain with neat sketch types of Mechanical Joints used in Robotics system. **5**

3. Explain with sketch the actuation of a gripper by using Rack & Pinion. **5**

4. Explain Proximity and Range Sensors. **5**

5. Explain DC and AC servo motors with respect to Robotics. **5**

6. Explain process of vision system. **5**

7. List illumination techniques and explain any one. **5**

8. List textual robot languages. **5**

9. Explain problem solving technique in Artificial Intelligence. **5**

PART – B

Answer any **seven** questions.

10.	(a)	Explain with a neat sketch Jointed arm configuration of Robot.	5
	(b)	Explain accuracy and Repeatability.	5
11.	(a)	Explain Basic elements of Robot system.	5
	(b)	Explain speed of movement and load carrying capacity.	5
12.	(a)	Explain the working of vacuum cup gripper.	5
	(b)	Explain PID controllers.	5
13.	(a)	Explain sensor used for safety monitoring in Robot.	5
	(b)	Explain segmentation in high level vision.	5
14.	(a)	Explain powered head through method of Robot programming.	5
	(b)	Explain constants and variables in VAL language.	5
15.	(a)	Explain path and frames in VAL.	5
	(b)	Explain definition of points in work place in VAL.	5
16.		Explain DIFFERENCE command in LISP programming with example.	10
17.		Explain APPEND and DEFUN commands in LISP programming with example.	10
18.		Explain pick and place Robot in Material handling system.	10
19.	(a)	Explain Robots in automated assemblies.	5
	(b)	Explain Robots in Spot welding application.	5