

M.E DEGREE EXAMINATIONS: JANUARY 2011

First Semester

CAD / CAM

CCM503: Industrial Robotics and Expert Systems

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. What is work volume?
2. What is degree of freedom in robot?
3. Write the wrist motions of robot.
4. Give some tools used as end effector.
5. What is the need of sensors in robotics?
6. What are the schemes involved in image data reduction?
7. What is FSR?
8. What are the possibilities of human intervention with robot?
9. What are the ways of accomplishing lead through programming?
10. What are the goals of AI?

PART B (5 x 16 = 80 Marks)

11. (a) Explain the various configurations of robot with neat sketches. **(OR)**
(b) (i) Explain the precision movements in robot. (8)
(ii) Explain the robot arm and body motions. (8)
12. (a) Discuss the electrical drive systems in robot. **(OR)**
(b) Describe the magnetic gripper and vacuum cup in detail.
13. (a) Explain any four position sensors. **(OR)**
(b) Explain the Image segmentation with sketches.
14. (a) Describe the three robot cell designs with sketches. **(OR)**
(b) Discuss the safety in robotics.
15. (a) Explain the methods of robot programming. **(OR)**
(b) Discuss the applications of AI in robotics.
