



Karunya UNIVERSITY

(Karunya Institute of Technology and Sciences)
(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

End Semester Examination (Model Question Paper – April 2014)

Subject Title: INDUSTRIAL ROBOTICS
Subject Code: 09ME248

Time: 3 hours
Maximum Marks: 100

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. Define Robot as per RIA?
2. What are the robot configurations.
3. What are the main characteristics of a robot?
4. Define work volume.
5. Draw the graphical representation of Rotational joint in DH notation.
6. Write the homogeneous rotational matrix about X- axis
7. Name few Robot programming Languages.
8. Define Yaw, Pitch and Roll?
9. What are the components of Machine Vision?
10. Write few non-manufacturing applications of robots.

PART – B (5 x 3 = 15 MARKS)

11. Write various definitions of Robots.
12. What are the various types of end-effectors?
13. What are the functions of machine vision?
14. Write briefly about robot languages
15. Explain the application of robot in loading and unloading.

PART – C (5 x 15 = 75 MARKS)

16. What are the laws of Robot and explain the origin of robotics.
(OR)
17. Explain the various robot configurations with neat sketches.
18. What is DH convention for selecting frames of reference in robotic application, explain.
(OR)
19. Discuss the following robot grippers with neat diagrams:
 - a) Mechanical Grippers
 - b) Magnetic Gripper
 - c) Scoops and Ladles
20. Explain two Proximity sensors mostly used in robots.
(OR)
21. What is Robot Vision and explain in detail.
22. Explain various Robot programming methods.
(OR)
23. Define AI and explain the goals of AI.
24. Explain the application of robots in loading\unloading.
(OR)
25. Explain the application of robots in welding.