Code No: B0407, B5206/ D0404

NR/R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech II- Semester Regular Examinations September, 2010
INDUSTRIAL ROBOTICS
(COMMON TO CAD/CAM, DESIGN FOR MANUFACTURING)
Time: 3hours   Max.Marks:60
Answer any five questions
All questions carry equal marks
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1.a)   Draw and explain the four basic configurations of robot?   [6]
  b)   Explain the different types of joints used in robots with neat sketch.   [6]

2.a)   Analyze the transient response of second order system?   [4]
  b)   Write short notes on stepped motors and encoders.   [8]

3.   Compare the forward transformation and reverse transformation of a 2 degree of
       freedom arm?   [12]

4.   What are the various factors in gripper's selection and design? Explain.   [12]

5.a)   What are the various techniques of image processing and analysis? Explain in
       detail.   [7]
  b)   Explain the various robotic application of machine vision.   [5]

6.a)   How do you define the BRANCHING related to robot programming? Explain.   [5]
  b)   What are the various possible interpolation schemes that can specify on many
       robots by the programmer? Explain.   [7]

7.a)   How do you analyze the robot cycle time?   [5]
  b)   Compare the robot work cell controllers.   [7]

8.   Short notes on
       i) Structures of robot language.
       ii) Robots in spray coating.   [12]

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