

Code : R7410305

**R07**

**IV B.Tech I Semester (R07) Supplementary Examinations, May 2012**

**ROBOTICS**

**(Mechanical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. (a) How is automation different from Robotics?  
(b) Explain the classification of robotics by control system.
2. Classify end effectors. Explain the requirements and challenges of end effectors.
3. How are homogeneous transformations applied to rotation? Illustrate with an example.
4. With an example of your choice explain manipulator inverse kinematics.
5. Discuss the applications of Lagrange – Euler formulations in manipulator dynamics.
6. (a) Explain various types of programming available in robotics.  
(b) List some languages used for robot programming and their features.
7. Discuss some of the actuators used in robots.
8. With neat sketches, illustrate the use of robot in a layout of spot welding.

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