ROLLNO RR421001

2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH II SEMESTER REGULAR EXAMINATIONS

ROBOTICS AND AUTOMATION

(BIO MEDICAL ENGINEERING)

APRI/MAY 2006

TIME : 3HOUR
MARK :100

Answer any FIVE Questions All Questions carry equal marks

1. Define the terms 'Robot' and 'Robotics'. Discuss the role of robots in engineering.

2. (a) What is robot software? Discuss the software elements of robot and different teaching methods of robot.

(b) Discuss need of Dynamic stabilization of Robot.

3. What are the various methods for determining a desired trajectory of joint? Discuss any one method in brief.

4. (a) What are the used of sensors in robotics? Explain.

(b) What are the different types of sensors used in robots? Explain the suitable sensor to measure the position of the gripper accurately.

5. Explain various force control methods in robot manpulators.

6. (a) What are the advantages and disadvantages of hydraulic grippers?

(b) With the help of a neat sketch explain the principle and working of optical encoder.

7. What is inverse kinematics problem? Explain the solution to the inverse kinematics problem with an example.

8. In which type of production, robots are preferred for loading and unloading function? Explain.

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