

Module-4

- 7 a. Explain positions orientations and frames with respect to special descriptions. (08 Marks)
b. With the help of a suitable example, explain the operators:
i) Translations
ii) Rotations
iii) Transformations. (12 Marks)

OR

- 8 a. Clearly explain with neat sketches the manipulator kinematics. (12 Marks)
b. Write an explanatory note on actuator space and joint space. (08 Marks)

Module-5

- 9 a. Explain clearly the levels of Robot programming. (10 Marks)
b. Discuss requirements of robot programming language. (10 Marks)

OR

- 10 Write short note on the following:
a. Off-line programming system
b. Problems in robot programming languages
c. Issues in OLP systems
d. Sub tasks in OLP systems. (20 Marks)
