475 Register No.:

October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Mention the types of joints.
2. Define the term accuracy.
3. List the types of controls.
4. Mention two sensors used in robot work cell.
5. Write any two robot languages.
6. Mention the industrial applications of robot.
7. Future robots could be applied in agriculture industry! Do you agree? Write your comments.
8. What is the use of signal command?

PART – B

9. Define: (i) Pitch, (ii) Yaw.
10. What are the effects of structure on robot control?
11. What are the advantages of hydraulic drive?
12. What is the use of robot wrist sensor?
13. Mention the capabilities of lead through programming.
14. Write short notes on automatic guided vehicles.
15. What are the social implications of robotics?
16. What is the principle of piezo electric sensor?

[Turn over.....

PART – C

17. (a) Classify robots. Describe the work volume of cylindrical configuration with a sketch.

(Or)

(b) Describe the joint notation scheme of manipulators.

18. (a) Explain the working of magnetic gripper. List its advantages.

(Or)

(b) Discuss the factors for selection and design of grippers.

19. (a) Explain the working of pneumatic position sensor.

(Or)

(b) List the applications of machine vision. Explain any one application.

20. (a) Describe the reverse kinematics of manipulator with three degrees of freedom.

(Or)

(b) Write brief notes on: (i) Sensor commands (ii) End effector commands.

21. (a) Illustrate the application of robot for spray painting.

(Or)

(b) Discuss the requisite and non-requisite robot characteristics.
