

NETTUR TECHNICAL TRAINING FOUNDATION
DIPLOMA IN MECHATRONICS ENGINEERING & SMART FACTORY-CP15
V SEMESTER SUPPLEMENTARY EXAMINATION-JUNE 2023

Subject: Robotics
Subject Code: CP15503T

Total Time: 2 Hr.
Total Marks: 50 Marks

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING **2*8=16**

- 1.1 How can we justify that robots can save money & time?
- 1.2 Mention the different types of joints based on motions.
- 1.3 What is EOAT? Classify its types.
- 1.4 What are the 2 parameters of link description in robot kinematics?
- 1.5 What are the sensors used in Robots?
- 1.6 What are the applications of Machine Vision System?
- 1.7 What do you understand by workspace of robot?
- 1.8 What is the function of (a) SELECT (b) EDIT?
- 1.9 What is Material Handling?
- 1.10 Why safety fence are used in industrial robot?

2.0 ANSWER ANY SIX OF THE FOLLOWING **3*6=18**

- 2.1 Why industrial robot requires six degrees of freedom?
- 2.2 What are the laws do the robots must satisfy for its operation?
- 2.3 Explain in detail about SCARA configuration
- 2.4 Write a short note on Lead through Programming.
- 2.5 What are the different operating modes in the control panel of Robot?
- 2.6 Draw the workflow of Robotic work cell.
- 2.7 When do we do Mastering and explain the need for Mastering?
- 2.8 What is wrist configuration of the robot? With neat sketch explain in detail.

3.0 ANSWER ANY FOUR OF THE FOLLOWING **4*4=16**

- 3.1 Draw the structure of robot anatomy and mark the basic parts
- 3.2 Draw the block diagram of direct & indirect kinematics.
- 3.3 Explain anyone arm configurations of Robot
- 3.4 Draw the block diagram of robot vision system
- 3.5 What are the steps involved in trajectory planning for a robot with terminology?
- 3.6 Explain the different types of Industrial Maintenance of robot

