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

Subject: Robotics **Total Time: 2 Hr.**
Subject Code: CP15503T **Total Marks: 50 Marks**

PART B

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

1.1 How to define the term robot & where do the industrial robots used mostly?

1.2 What is End of robotic arm called as? Brief.

1.3 Mention the different types of joints based on motions.

1.4 In trajectory planning, what is meant by Knot point or via point?

1.5 Name the drive systems present in robotics

1.6 Define Segmentation

1.7 What are the different coordinate systems in jogging the Robot?

1.8 List down any 4 industrial applications of Robot

1.9 Why safety fence are used in industrial robot?

1.10 What are the robot grippers types based on mechanism?

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

2.1 What are the laws do the robots must satisfy for its operation?

2.2 In robotics what is workspace, work envelope, work cell of a robot?

2.3 Explain the wrist configurations of Robot

2.4 Explain direct & indirect kinematics with block diagram

2.5 Write a short note on Lead through Programming.

2.6 Write the difference between linear and rotary actuator

2.7 What are the advantages & disadvantages of machining in robots?

2.8 When do we do Mastering and explain the need for Mastering?

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

3.1 With a neat block diagram, explain the structure of robot & its components.

3.2 Name the types of arm configuration & Explain in detail about any one arm configuration.

3.3 What are the steps involved in trajectory planning for a robot with terminology?

3.4 Draw the block diagram of robot vision system

3.5 What are the different types of programming methods used in robotics?

3.6 With a neat diagram explain the anatomy of robotic operation in welding process.

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