

**NETTUR TECHNICAL TRAINING FOUNDATION
DIPLOMA IN TOOL ENGINEERING & DIGITAL MANUFACTURING-CP01
VI SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-MAY 2023**

**Subject: Automation – Digital Manufacturing
Subject Code: CP01604T**

**Total Time: 2 Hr.
Total Marks: 50**

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING

2*8=16

- 1.1 Write down the importance of PLC and its role in automation.
- 1.2 Define the terms NO, NC with symbols.
- 1.3 Draw the ladder diagram for Ex OR gate with truth table
- 1.4 List out the different registers in PLC
- 1.5 List any 3 applications of HMI
- 1.6 Write the basic components and architecture of SCADA.
- 1.7 What is degrees of freedom?
- 1.8 What is Internet of Things (IoT)?
- 1.9 Write the definition of Robot
- 1.10 List down the components of IoT

2.0 ANSWER ANY SIX OF THE FOLLOWING

3*6=18

- 2.1 List the factors considered while selecting a PLC
- 2.2 Write the 3 Laws of Robotics.
- 2.3 Explain Input module with neat sketch.
- 2.4 Explain about the wrist configurations of robot.
- 2.5 Write any 6 applications of Industrial Internet of Things
- 2.6 Explain PLC output group register
- 2.7 List down the building blocks of Industry 4.0
- 2.8 Write the advantages of HMI over a PLC

3.0 ANSWER ANY FOUR OF THE FOLLOWING

4*4=16

- 3.1 Explain each part of PLC with the block diagram.
- 3.2 Differentiate between Retentive and Non-Retentive type timer.
- 3.3 Explain up counter with typical application.
- 3.4 Explain the four stages of architecture of IoT
- 3.5 List down the nine technology trends in Industry 4.0
- 3.6 What are the types of SCADA System? Explain