

B.Voc. Robotics and Automation
Subject: Basics of PLC
Subject Code: DBEC104
Semester: 2nd
Batch: 2018-21
Theory (External): 35
Time: 03 hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. **Section A** comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. **Section B** comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

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SECTION –A (OBJECTIVE TYPE QUESTIONS)

(10x1=10 Marks)

1. Industrial Automation means?
 - a) use of controllers in industry
 - b) use of computers in industry
 - c) use of software in industry
 - d) All of the above
2. Scan time in PLC means
 - a) To run entire program
 - b) Timers and counters are indexed
 - c) One run of ladder logic
 - d) Time to enter the program
3. Modular PLCs contains _____ in one rack:
 - a) CPU and Power Supply
 - b) CPU and I/O
 - c) Power supply and I/O
 - d) CPU, Power Supply and I/O
4. Which one is not manufacturer of PLC:
 - a) Honeywell
 - b) Intel
 - c) Siemens
 - d) Mitsubishi

5. HMI Stands for _____ Machine Interface
- a) Human
 - b) High
 - c) Hardware
 - d) None of the above
6. Pneumatic systems usually in the range of power of :
- a) < 1 hp
 - b) 1 to 2 hp
 - c) 2 to 3 hp
 - d) > 4 hp
7. An XOR function implemented in Ladder Logic uses
- a) 2 contacts
 - b) 3 contacts
 - c) 4 contacts
 - d) 5 contacts
8. _____ language can be programmed interactively with PLC
- a) C
 - b) Online
 - c) Offline
 - d) Basic

9. PAC is generally used for
- a) Complex systems
 - b) Simple systems
 - c) Both systems
 - d) None of the above
10. Medium PLC generally has _____ inputs and outputs
- a) 100-200
 - b) 200-1000
 - c) 1000-4000
 - d) 4000-8000

SECTION -B (ESSAY TYPE QUESTIONS)

(5x5=25 Marks)

11. Discuss the evolution of industrial automation. Describe the various components of industrial automation.
12. Explain the architecture of a PLC and list advantages of PLC.
13. Discuss various PLC arithmetic functions.
14. Explain the interfacing of HMI system to PLC.
15. Describe various selection parameters for PLC.
16. Discuss installation and maintenance procedures of PLC.
17. Describe timers and counters of PLC.
18. Discuss various types of I/O modules in a PLC.

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