S.No. 87 **12PEL10**

(For the candidates admitted from 2012–2013 onwards)

M.Sc. DEGREE EXAMINATION,
APRIL/MAY 2018.

Fourth Semester

Electronics and Communication

INDUSTRIAL AUTOMATION

Time : Three hours Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) What do you mean by ladder diagram? What is the purpose of the control transformer in machine control systems?

Or

(b) With a neat diagram, explain the operation of time delay relays.

2. (a) What do you mean by update in PLC? Explain.

Or

(b) Differentiate between physical components and program components.

3. (a) Write a short note on ladder program execution sequence.

Or

(b) Explain the function of sequencers with a neat diagram.

4. (a) How to connect the PLC to the system being controlled? Explain.

Or

(b) Explain how to connect discrete sensors to PLC inputs with a neat diagram.

5. (a) With an example, explain how to write a ladder program.

Or

(b) Explain with an example, the usage of calendar functions in a PLC.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) With a neat diagram, explain in detail the different types of switches.

Or

(b) Describe in detail the operation of Boolean logic and relay logic with a neat diagram.

7. (a) Explain in detail the basic function of PLC configurations with a neat diagram.

Or

(b) Draw and explain in detail the operation of oscillator in PLC.

8. (a) With a neat diagram, explain the operation of one-shot flip flop using ladder diagram.

Or

(b) Briefly explain the function and usage of complex branches with an example.

9. (a) Explain in detail how the input wiring is done in a PLC with a neat diagram.

Or

(b) With a neat diagram, explain in detail the function of relay outputs with a ladder diagram.

10. (a) Explain in detail the various steps involved in ladder program using OMRON.

Or

(b) Describe in detail the function and usage of timers in PLC with an example.

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