

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BSc DEGREE EXAMINATION MAY 2018**  
(Fifth Semester)

Branch – **ELECTRONICS**

**CORE ELECTIVE – I : PROGRAMMABLE LOGIC CONTROLLER**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Distinguish between PLA and PAL.
- 2 What is a sequential network?
- 3 List the major parts of PLC.
- 4 What is meant by digital output from PLC?
- 5 What is an actuator? Give an example.
- 6 Mention the different ways of looking at a PLC program.
- 7 What devices or components are required to create or change a PLC program?
- 8 What is an OFF DELAY TIMER?
- 9 Define PLC scan cycle.
- 10 Mention any two applications where PLC can be used.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Explain the Programmable Logic Arrays.  
OR  
b Write a note on Programmable Gate Arrays.
- 12 a Explain the basic principles of operation of a PLC using block diagram.  
OR  
b Write a note on the analog and Digital outputs to the PLC.
- 13 a Write a note on the output control devices.  
OR  
b Briefly explain the ladder logic diagram.
- 14 a Write a note on the OFF DELAY TIMER in PLC.  
OR  
b Explain the counters in PLC.
- 15 a Explain briefly the application of PLC in automatic control of warehouse door.  
OR  
b Write a note on application of Conveyor belt motor control.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 With an example explain the design of a sequential network using programmable logic devices (PLD).
- 17 Write a note on the Diagnostics of PLC with the help of computers.
- 18 Write a note on Motor starters and Electromagnetic control devices.
- 19 Explain the Math instructions of any PLC.
- 20 Explain the automatic car washing machine application using PLC.