

B.Tech III Year II Semester (R15) Regular Examinations May/June 2018
PROGRAMMABLE LOGIC CONTROLLER & ITS APPLICATIONS
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) List out output ON/OFF devices.
 - (b) List out Input analog devices.
 - (c) Write four input PLC equivalent of NAND gate.
 - (d) Write Boolean algebra equivalent for any four digital gates.
 - (e) Write about coil format of PLC subtract function.
 - (f) Write a block diagram of PLC's BCD – to – Binary.
 - (g) Describe the PLC's MOVE function.
 - (h) Describe the FAL function.
 - (i) Write typical analog I/O module ranges used in PLC.
 - (j) How PID tuning is performed in PLC?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 Explain different types of I/O module interfaces.

OR

- 3 Explain the limitations of PLC ladder diagram programming.

UNIT – II

- 4 Write detailed step by step procedure for planning a program for large process.

OR

- 5 Write a ladder relay and PLC control diagram for “output ‘H’ to be on, input ‘A’ must be on and both inputs ‘C’ and ‘D’ must be off, in addition one or more of inputs ‘E’, ‘F’ and ‘G’ must be off”.

UNIT – III

- 6 Write step by step procedure and PLC ladder diagram for “A process where a timed interval is started when a counter reaches a preset value”.

OR

- 7 Write about PLC basic comparison functions in detail.

UNIT – IV

- 8 Explain the PLC shift register functions with suitable applications.

OR

- 9 Explain about PLC complement and compare matrix function with suitable example.

UNIT – V

- 10 Explain how trouble shooting PLC malfunctions.

OR

- 11 Explain PLC analog output applications with suitable examples.
