Code No: **R204102H**　　　**R20**　　　Set No. 1

IV B.Tech I Semester Regular Examinations, January – 2024
PROGRAMMABLE LOGIC CONTROLLERS AND APPLICATIONS
(Electrical & Electronics Engineering)

Time: 3 hours　　　　　　　　　　　　　　　　　　**Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
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UNIT – I

1　a)　Define PLC. Illustrate the system components of a PLC with a neat sketch.　　[7]
　　b)　What are the programming equipments of PLC?　　[7]
(OR)
2　a)　With a neat sketch explain the PLC I/O modules.　　[7]
　　b)　What is Ladder diagram? How to make a Ladder diagram for PLC.　　[7]

UNIT – II

3　a)　What are the operational procedures in PLC programming?　　[7]
　　b)　Write and explain the programming examples using contacts and coils.　　[7]
(OR)
4　a)　Explain the different types of PLC programming languages with examples.　　[7]
　　b)　Discuss about PLC Programming Input instructions with suitable examples.　　[7]

UNIT – III

5　a)　Explain any one of PLC Timer function Industrial application with neat sketch.　　[7]
　　b)　With a neat sketch explain UP counter example program.　　[7]
(OR)
6　a)　What is PLC timer, what are the different types of Timers?　　[7]
　　b)　Explain any one of PLC counter function Industrial application with neat sketch.　　[7]

UNIT – IV

7　a)　Write the importance of Moving MOV for variable initialization in Move (MOV) instructions.　　[7]
　　b)　How to control two-axis Robots with PLC.　　[7]
(OR)
8　a)　Define Data Handling function, explain two (SKIP and Master control Relay) Data Handling functions with an example.　　[7]
　　b)　What is Bit Pattern? Explain the procedure of changing a bit shift register.　　[7]

UNIT – V

9　a)　Write and explain representation of Analog input signals of PLC.　　[7]
　　b)　Explain about different Analog modules used in Analog PLC operations.　　[7]
(OR)
10　a)　Explain any two Analog output applications with an example.　　[7]
　　b)　Explain the importance of PID functions used in Analog PLC operations.　　[7]