S. B. Roll. No.....

PLCs AND SCADA
5th Exam/ECE/4617/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. Relays are a _____ device.
b. SCADA stands for _____.
c. Micro PLCs are the ones that have _____ I/O points.
d. _____ is a retentive output instruction.
e. RTC stands for _____.
f. Ladder Logic is a symbolic language. (True/False)
g. The operational speed of PLC program is _____as compared to relay system.
h. _____ Instruction checks whether a value is within or outside of a specified range.
i. PLC works by continually _____a program.
j. Sourcing is a common _____ line.
k. _____ Instruction delays the turning ON or OFF of an output.
l. Heat sensor detects the anomalous _____.
m. PLCs are used to replace _____.
n. The _____ instruction is used to reset the timing and counting instruction accumulated values.
o. _____ invented PLC.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. Discuss basic operation and principle of PLC.
ii. Mention the advantages and disadvantages of PLC over electromagnetic relays.
iii. Write a note on Ladder diagram programming.
iv. Explain the difference between: a) DCS and SCADA, b) PLC and DCS
v. Implement XOR gate using ladder diagram.
vi. Explain the I/O structure of a PLC.
vii. What is Scan Cycle?
viii. What are the limitations of electromagnetic relays?

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Explain the Architecture of PLC with the help of Block Diagram.
b. What is SCADA? Describe various components of SCADA in detail.
c. Explain types of PLC timers available in ladder logic.
d. Discuss Comparison instructions of PLC ladder logic.
e. Define DCS. Explain various components of a DCS system and write down main advantages of a DCS system.