

Exam.Code:0936

Sub. Code: 6987

1058

B.E. (Electrical and Electronics Engineering)

Sixth Semester

EE-611: Programmable Logic Controller and Distributed Control System

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

- I. Attempt the following:-
- State the application of SCADA?
  - What do the abbreviations NO and NC represent when used to describe switch contacts?
  - What do you understand by data logger and where it is used?
  - List four factors that enter into the length of the scan time?
  - Explain the role of communication in DCS? (5x2)

### UNIT - I

- II. a) Draw and explain the main block diagram of PLC?  
b) Write a note on SCADA used in any industrial applications? (2x5)
- III. a) Draw and explain the SCADA architecture in detail?  
b) What is PLC scan sequence ? Describe the operation of SKIP in PLC? (2x5)
- IV. a) Describe the Input Module block diagram?  
b) Discuss the isolated/non isolated input output wiring to PLC? (2x5)

### UNIT - II

- V. a) Design and draw ladder diagram to generate square wave at digital output terminal with ON time of 5 seconds and OFF time of 10 seconds when toggle switch is ON.  
b) Discuss the temperature control system with hardware and ladder diagram? (2x5)
- VI. a) Develop the ladder logic NAND and NOR logic  
b) Write the ladder logic program for stepper motor control with PLC for forward and reverse direction. (2x5)
- VII. a) Explain the concept of DCS. List and explain the function of each level of DCS?  
b) Explain the use of SUBTRACT function for conveyor count application with neat schematic? (2x5)

x-x-x