## BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE) B.Tech.Sem - VI ELECTRICAL :SUMMER- 2022 SUBJECT : PROGRAMMABLE LOGIC CONTROLLERS

Day: Thursday Time: 02:30 PM-05:30 PM Date: 23-06-2022 S-13330-2022 Max. Marks: 60 N.B. 1) All questions are **COMPULSORY**. 2) Figures to the right indicate FULL marks. 3) Assume suitable data wherever necessary. Q.1 What are different sensors and actuators used in PLC system? a) (05)b) Draw and explain block diagram of PLC (05)State advantages and disadvantages of PLC system. (05)What is selection criteria for PLC? b) (05)O.2 a) What are fundamentals of ladder diagram and explain stepwise procedure to (05)draw ladder diagram. Explain AND logic gate with truth table and also verify that with ladder (05)diagram. ORWhat are basic components and symbols in ladder programming? (05)Write a note on programming equipments. (05)Q.3 a) What are common problems associated with closed loop control system? (05)**b)** How do you explain Analog PLC operation? (05)What arte different PLC interfacing techniques? Explain in brief. (05)Draw block diagram of level control using PLC and explain each block in (05)brief. Q.4 a) What are basic principles of SCADA system? (05)Write a note on SCADA data transfer through PLCC. (05)a) Explain with block diagram of SCADA communication in an electrical power (05)system. b) What do you mean by SCADA server? Explain with example. (05)**Q.5** a) Explain first generation or monolithic SCADA architecture. (05)b) How do you compare distributed SCADA architecture with networked (05)SCADA architecture? OR a) Write a note on Intelligent Electronic Devices (IED). (05)b) What is role of SCADA in energy management system? (05)Write overview of OSI model. (05)Q.6 a) What are different communication protocols? Which one is providing highest (05)b) security? OR a) Draw and explain IEC layered architecture. (05)

**b)** Write a note on PROFIBUS and MODBUS.

(05)