

B.E / B.Tech / Sem - VIII / CBCRS / R-19 / 'C' Sem / Sub: IA / S.H-2024

Date: - 02/12/2024

GP Code: - 10066351
[Total Marks: 80]

(3 Hours)

- N.B.: (1) Question No. 1 is **Compulsory**.
(2) Attempt any **three** questions out of the remaining **five**.
(3) Each question carries 20 marks and sub-question carry equal marks.
(4) Assume suitable data if required.

- Q.1 Solve any **Four** from the following 20
- a List the features of safety Instrumented system
 - b Explain the working of a PLC with neat block diagram
 - c Define offset error pertaining to proportional controller how it can be minimized?
 - d State different types of cylinders used in instrumentation System design.
 - e Compare continuous and discontinuous controller
- Q.2 a Explain Supervisory functions of SCADA system. 10
b Define scan interval and discuss the factors which affects the scan interval of SCADA. 10
- Q.3 a Explain any one applications of PLC with proper ladder diagram program. 10
b. Role of HMI in Automation with proper diagram 10
- Q.4 a Explain Reset Windup in case of Integral Controller and explain how to avoid the same. 10
b State different points comparing among Electric, Pneumatic and Hydraulic system. 10
- Q.5 a Explain the Programming-Function Block Diagram in DCS 10
b Draw and explain the generic architecture of PLC 10
- Q.6 Write short notes on any two 20
- a Cascade Controller
 - b Floating type of the controller
 - c Composite controllers such as PI, PD and PID
