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Question Paper Code: 57502

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Seventh Semester

Electronics and Instrumentation Engineering

15UEI702 -PLC and SCADA

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The process of converting a discrete time continuous value signal into discrete time discrete value signal is CO1-R
(a) Sampling (b) Coding (c) Quantisation (d) ADC
2. Velocity form of digital controllers causes Controller drift when _____ control action is absent CO1-R
(a) P (b) I (c) PI (d) D
3. Small PLCs have a memory from ----- to store the user's logic programs. CO2-R
(a) 2Kb to 10 KB (b) 10 Kb to 20KB
(c) 30Kb-40Kb (d) 1Gb
4. The PLCs were originally designed to replace CO2-R
(a) Analog controllers (b) Microcontrollers
(c) Computers (d) Hardwired Relays
5. Which one of the following is a Program control instruction CO3- R
(a) MCR (b) Timer (c) Coil. (d) ALU
6. _____ instruction is used as a program control function. CO3- R
(a) MCR (b) RESET (c) TIMER (d) CNTL
7. _____ motor is most suitable for precision motion control CO4 -R
(a) Induction Motor (b) Synchronous Motor (c) Stepper Motor (d) Servo Motor
8. To identify non-metal objects in a conveyor _____ sensor is most CO4 -R

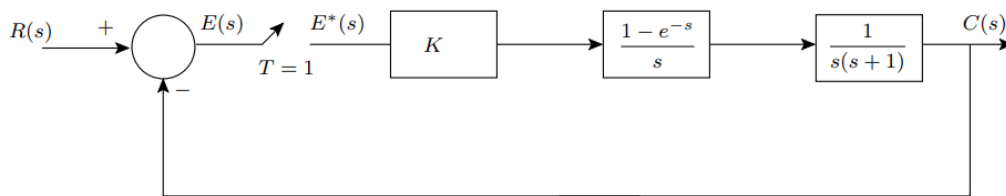
preferable.

- (a) Capacitive Proximity (b) Inductive Proximity
(c) IR (d) Ultrasonic
9. Line Modems used to connect RTU to a network uses _____ CO5- R
technique to establish communication.
(a) Phase Shift Keying (b) Time Shift Keying
(c) Frequency Shift Keying (d) Coded Shift Keying
- 10 IEC60870 is an CO5- R
(a) Open SCADA Protocol (b) Serial Cable
(c) Closed SCADA Protocol (d) Parallel Cable

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

- 11 Determine the closed loop stability of the system shown in Figure when CO1-App (8)
K = 1 and also find out the range of K for which the system is stable.



- 12 Draw the architecture of PLC and explain its functional blocks and also CO2 -U (8)
state the advantages of PLC.
- 13 List and discuss various arithmetic instructions in PLC. CO3 -U (8)
- 14 With suitable diagram explain the construction and operation of reactor CO4-U (8)
and also write a PLC program to monitor and control the reactor.
- 15 Draw the architecture of SCADA. Explain various functions carried out CO5- U (8)
by SCADA.