SUBJECT CODE NO:- P-151
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EEP/EEE/EE) Examination MAY/JUNE-2016
Industrial Automation
(Revised)

[Time:Three Hours]   [Max Marks:80]

"Please check whether you have got the right question paper."

N.B   i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
           ii) Attempt any two questions from the remaining questions in each section.
           iii)Figures to right indicate full marks.

Section A

Q.1   Solve any two   10
       a) Define automatic control system. Draw & explain each block
       b) Why automation is necessary? How to automate only one operation?
       c) Draw ladder diagram for DC motor, starter & controller
       d) Draw and explain MODBUS protocol

Q.2   a) What is mean by mechanical actuators? Draw & explain applications of levers, linkages & gear boxes   08
       b) Write the difference between machine automation, process automation, factory automation & system   07
          automation

Q.3   a) What are the serial standard used for serial communication, compare RS232 & RS 485 signal transmission   08
       b) Explain manually, semi operated & fully automatic operation   07

Q.4   a) What are the techno-commercial requirement and feasibility that decides level of automation? Explain   08
       b) How temperature of heating process is controlled? Explain & draw its control using discrete & continuous   07
          process

Q.5   a) What are the technologies used for automation? Explain any one in detail   08
       b) What is mean by continuous & discrete process variable? Draw its nature over a period of time. Compare   07
          between them.

Section B

Q.6   Solve any two   10
       a) Explain command-line interface, graphical user interface and web-based user interface
       b) What are the standard communication protocols? Explain
       c) What are the variables acquired in transmission & distribution system to implement SCADA system
       d) Write difference between centralized control system & DCS

Q.7   a) Explain all functions of SCADA system   08
       b) How automatic substation control is implemented using SCADA system? Explain   07

Q.8   a) What are the types of displays used in DCS? Draw and explain   08
       b) Explain role of multiplexers and remote sensing terminal units in DCS   07

Q.9   a) How SCADA is implemented for operation & control of interconnected power system? Explain   08
       b) What is function of data collection equipment? Draw and explain data logger   07

Q.10   a) Explain any one case study of DCS   08
       b) Draw and explain configuration of SCADA hardware system.   07

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