R09

Code No: C3705, C7507

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March/April-2011
PROGRAMMABLE LOGIC CONTROLLERS AND THEIR APPLICATIONS
(COMMON TO CONTROL ENGINEERING, CONTROL SYSTEMS)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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1.a) Describe the four major parts of a PLC system.
b) Explain the difference between legal (proper) and illegal (improper) PLC ladder programming layouts. [6+6]

2. Discuss in detail the coil (output) function of the PLC. [12]

3. List and describe the major steps in creating a PLC program for an industrial situation. [12]

4. List the five major types of registers. Use a block diagram to show where each type fits into the PLC scheme of operation. [12]

5. Design construct and test PLC circuits for the following process:
A fan, F, is to be turned on when count L goes from 7 down to 0 and when either count M goes up to 14 or count N has not gone all the way from 14 down to 0. One switch or stop button resets the entire process. [12]

6.a) Explain the operation of the SKIP function.
b) What is the purpose of jump instruction? What are the advantages of jump instruction? [6+6]

7.a) Describe the BIT PICK CONTACT function and its use.
b) Develop a "coil and contact" (input/output) control system to operate a basic robot. [6+6]

8. The linear input of 0 to 80 volts is to be displayed on a 9999 – maximum – count BCD output. Trace 32 volts through the system. [12]

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