ED – 883

VII Semester B.E. (E & E) Degree Examination, December 2014/January 2015
(2K6 Scheme)
EE 705 : PROGRAMMABLE LOGIC CONTROLLERS (Elective)

Time : 3 Hours Max. Marks : 100

***Instruction** : Answer **any five full** questions.*

1. a) What is PLC ? Explain the different elements of PLC with block diagram. **10**

   b) A factory has five section, each with its own process, one of the sections is in a building for way from the others. Programming alternations are required weekly for the processes, what kind of PLC system would you recommend and why ? Draw a layout block diagram of the system. **10**

2. a) Describe three basic elements of an I/O address. **4**

   b) Differentiate between data processing and process control computer. **6**

   c) Explain data file memory organisation for an Allen Bradely PLC–5 controller. **10**

3. a) Describe PLC timer instruction and differentiate b/w a retentive and non retentive timer. **10**

   b) Three output term on at the same time, one stays on, another' M, shuts off after 8 seconds. The third output ⁻ N. Shuts off after 14 seconds. Develop a PLC ladder diagram and draw the related waveforms. **10**

4. a) Draw a PLC ladder diagram for a timed process that occurs after a certain process count is reached. After count of 15 from a sensor, a paint spray is to run for 25 sec. **10**

   b) Briefly explain the purpose of the user program portion and data table portion of a typical PLC memory map. **10**

5. a) Describe the operation of master control reset instrucation and develop an elementary program illustrating its use. **10**

   b) Draw and explain five different types of data compare instrucations. **10**

P.T.O.

6. a) With a block diagram, explain generalized distributed control system architecture. **10**

   b) With the help of a block diagram, explain the basic elements of a Micro processor based controller. **10**

7. a) Using logic function blocks, explain the logic diagram of a motor control circuit. **10**

   b) Explain three basic categories of designing a security features in distributed control system. **10**

8. a) Explain briefly the various layers of a OSI (Open System Interconnection) reference model. **10**

   b) Discuss the key functional requirements of an Operator Interface System. **10**