Q.24 Write down any five applications of SCADA in instrumentation.

Q.25 What is HMI? Write down its advantages .

Q.26 Draw and explain the block diagram of DCS?

Q.27 What is comparison instruction? Discuss "not equal" and "less than equal" instruction.

Q.28 What are the advantages of DCS ?

Q.29 What is MOV instruction ? How does it work?

Q.30 What are the types of timer instruction ? Explain ON and OFF timer instruction .

Q.31 Explain all arithmetic instruction .

Q.32 What is scan cycle in PLC ? Write all the steps involved in it.

Q.33 Write down any five applications of DCS.

Q.34 Draw and explain the block diagram of SCADA.

Q.35 What is DDC? How does it work ?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions.   (2x10=20)

Q.36 Explain the basic operation of PLC . Write down any 4 manufacturer's name of it. What are advantages and disadvantages of PLC?

Q.37 What is a DCS system? Explain I/O hardware components of DCS. How it is different from PLC ?

Q.38 What is the function of real time clock ? Write down the function of MOV instruction . Draw and explain the scan cycle in PLC.

(140)   (4)

6ᵗʰ Sem / IC, EI
Subject:- PLC, DCS and SCADA/ Micro-Contr & PLC Based

Time : 3Hrs.   **Instr.**   M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory   (10x1=10)

Q.1 Which of the following is/are the building blocks of PLC?

a) Input module   b) Power supply

c) processor   d) All of the above

Q.2 Relay is

a) A mechanical switch

b) A flow sensor

c) An electronic switch

d) An electromechanical switch

Q.3 Basic operation of PLC includes

a) Input read   b) Writing a program

c) Both (a) and (d)   d) Updating the output

Q.4 RTC stands for

a) Real time control   b) Real time clock

c) Read time clock   d) Read time control

(1)

Q.5 ___in PLC monitors the system's operation to improve safety and reliability .
   a) Watch dog timer   b) Real time clock
   c) Retentive timer   d) UP/DOWN Counter

Q.6 .ADD instruction is
   a) An arithmetic instruction
   b) A Timer instruction
   c) A counter instruction
   d) None of the above

Q.7 _____ is a computerized system that monitors and controls industrial processes, such as in manufacturing and power generation plants.
   a) DDC   b) DCS
   c) SCADA   d) PLC

Q.8 RTU stands for
   a) Real terminal unit   b) Real time unit
   c) Remote terminal unit d) Remote time unit

Q.9 _____is a system that uses software and hardware to monitor and control industrial processes and equipment .
   a) SCADA   b) PLC
   c) HMI   d) DCS

Q.10 The device which is used to create, modify or troubleshoot a program in PLC is
   a) Memory   b) Programming device
   c) Power supply   d) Processor

SECTION-B

Note: Objective type questions. All questions are compulsory.   (10x1=10)

Q.11 Define PLC .

Q.12 Explain HMI.

Q.13 Ladder logic is a programming language in PLC.(True/False)

Q.14 The process of reading inputs, running, the control program, and updating outputs is known as___.

Q.15 Expand SCADA.

Q.16 Define watch dog timer.

Q.17 ____refers to the automated control of a process by computers and microprocessors with sensors

Q.18 _____is an instruction in a PLC is a basic way to transfer data by copying it from one location to another

Q.19 Write any one manufacturer of PLC .

Q.20 A microcontroller is the part of block diagram of DCS. (True/false)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions.   (12x5=60)

Q.21 Draw and explain the functional block diagram of PLC.

Q.22 Write any five differences between DCS and PLC.

Q.23 What are the different programming languages in PLC?