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SUBJECT CODE NO: - Y-2170
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. T.Y (Sem-VI)
Examination March / April - 2023
Electronics Paper- XIX (601) (Programmable logic Controllers)

[Time: 1:30 Hours]   [Max. Marks: 50]

Please check whether you have got the right question paper.

N. B   1) Attempt all questions.

Q.1 Draw the diagram of water pumping system and build the ladder diagram step by   **20**
step with four modifications with proper explanation.

OR

Draw the logic diagram or PLC memory structure. Explain four types of program
file and eleven types of data files with their file number and file structure.

Q.2 Explain Timer – ON delay (TON) instruction of PLC with its symbol, data file   **20**
format and timing diagram.
Give one application of TON with ladder diagram.

OR

Write short notes on any four of followings with one example each.
   a) JSR , SBR and RET instructions
   b) BSR instruction
   c) SUB instruction
   d) LES and LEQ instructions
   e) TOD and FRD instructions
   f) CTD instruction.

Q.3   Rewrite the following by selecting correct answer from given options.   **10**
   1. The horizontal lines on a Ladder diagram are called as………..
       a) Tracks   b) bars   c) rungs   d) bus

   2. In PLC data addressing the number after delimiter period (·) is…………..
       a) Element   b) word   c) bit   d) file

   3. The data file numbers can be assigned upto……….
       a) 16   b) 64   c) 128   d) 255

   4.   NO. of bits in each element of input data file are………..
       a) 4   b) 8   c) 16   d) 32

   5.   The first step of processor scam cycle is……….
       a) Update input image table
       b) Update output image table
       c) Execute program
       d) Stop execution

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6. In TOF instruction……. bit will remain logic 1 as long as its input rung condition is true.
   a) DN   b) TT   c) EN   d) None

7. In CTU instruction , ……….. bit will set to logic 1 when accumulated value becomes equal to present value.
   a) CU   b) CD   c) DN   d) OV

8. For cascading of two timers…………. Bit of first timer is used as input contact for second timer.
   a) EN   b) DN   c) TT   d) none

9. LBL instruction is always associated with ………. Instruction.
   a) JMP   b) RET   c) BSL   d) EQU

10. The subroutines can be rested upto ……….. levels
   a) 2   b) 4   c) 6   d) 8

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