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- Q7. Explain different programming languages used in PLC.
- Q8. What are interrupts? Explain with instructions and the necessary diagram.

===End of Paper==

2112E162

BACHELOR OF VOCATION

Mechatronics

Subject: Microcontroller and Programmable Logic

Controller

Subject Code: ECE-604

Semester: Third

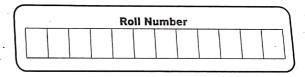
December 2021

Theory (External): 35 Marks

Time: 03 Hours

Instructions to the Students

- 1. This Question paper consists of two Sections. All sections are compulsory.
- Section A comprises 10 questions of objective type in nature. All
 questions are compulsory. Each question carries 1 mark.
- 3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
- 4. Read the questions carefully and write the answers in the answer sheets provided.
- 5. Do not write anything on the question paper.
- 6. Wherever necessary, the diagram drawn should be neat and properly labelled



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SECTION -A (OBJECTIVE TYPE QUESTIONS) (10x1=10 Marks)

- A. How many timers are present in 8051?
 - a) 0
 - b) 1
 - c) 2
 - d) 3
- B. What is the file extension that is loaded in a microcontroller for executing any instruction?
 - a) .c
 - b) .doc
 - c) hex
 - d) .txt
- C. Which are the 16-bit registers in 8051?
 - a) DPTR & PSW
 - b) DPTR & PC
 - c) PC & PSW
 - d) PC & SP
- D. If we push data onto the stack then the stack pointer
 - a) Increases with every push
 - b) Decreases with every push
 - c) Increases and decreases with every push
 - d) None of the above
- E. On power up, the 8051 uses which RAM locations for register R0- R7

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- a) 00-2F
- b) 00-07
- c) 00-7F
- d) 00-0F
- F. Identify the addressing mode of instruction MOV A, @R0
 - a) Indexed
 - b) Indirect
 - c) Direct
 - d) Register

- G. Disadvantage of PLC is
 - a) Security
 - b) Documentation
 - c) Fixed program application
 - d) Pilot running
- H. Program counter in 8051 is
 - a) 8-bit wide
 - b) 16-bit wide
 - c) 20-bit wide
 - d) None
- I. When we add two numbers the destination address must always be
 - a) Some immediate data
 - b) Any register
 - c) Accumulator
 - d) Memory
- J. How many pins a microcontroller IC has
 - 'a) 20
 - b) 40
 - c) 60
 - d) 80

SECTION -B (ESSAY TYPE QUESTIONS) (5x5=25 Marks)

- Q1. Explain block diagram of 8051 microcontroller.
- Q2. Explain pin diagram of 8051 microcontroller.
- Q3. Explain memory structure of 8051 microcontroller.
- Q4. Explain block diagram of programmable logic controller.
- Q5. What is ladder diagram? Explain with suitable example.
- Q6. Write difference between microcontroller and microprocessor.

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