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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.
2. 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

Roll Number									

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
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.