

Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

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Uni. Roll No.

Program: B.Tech. EE (Sem. 5th)
MICROPROCESSORS and MICROCONTROLLERS

MORNING

11 MAY 2023

Subject Code: PCEE-111

Paper ID:16463

Scientific Calculator is allowed

Time Allowed: 03 Hours

Max. Marks: 60

Note:

- 1) **Parts A and B are compulsory**
- 2) **Part C** has two questions Q8 and Q9. Both are compulsory, but with internal choice.
- 3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

Q1.

- a) What is full form of PSW? What is its use?
- b) An assembly language instruction consists of four fields. Name them and write them in order.
- c) State any **four** differences between microprocessor and microcontroller?
- d) Give any two differences between assembly language and high level language citing their advantages and disadvantages.
- e) What is meant by “*modem*”? What role does it plays in serial communication?
- f)

MOV A,#37H	What is the role of last instruction that
MOV B,#35H	is DA A?
ADD A,B	
DA A	

Part – B

[Marks: 04 each]

Q2. Illustrate how many ports are available in 8051 microcontroller. Name them and explain any one with diagram.

Q3. State difference between conditional and unconditional jump instructions. Mention any two conditional and unconditional jump instructions with examples.

- Q4.**
- a. MOV A,#34H
 - b. MOV A,R1
 - c. MOV A,34H
 - d. MOV A,@R0
 - e. MOV A, @A+DPTR

Name the type of addressing mode for each command (a to e).

Also explain the working of each command.

- Q5. Explain internal memory organization of RAM in 8051 μ C.
- Q6. State two differences between interrupt and polling. Which one among them is more preferred? Justify
- Q7. State difference between bit rate and baud rate. What is the role of the SBUF register in serial data transfer

Part – C

[Marks: 12 each]

- Q8. State the difference between LED and LCD display citing their advantages and disadvantages.
How many pins are there for 16 x 2 LCD? Draw the table showing the role of each pin of LCD.

OR

Draw and explain the internal architecture of 8051 microcontroller.

- Q9. Draw the 8051 connection to ADC 0804 with clock from XTAL of the 8051. We need to connect 4 to 5 D-type Flip Flops for obtaining the frequency for ADC chip. Justify. Mention the steps to program the ADC.

OR

Write a program to generate a triangular waveform using a DAC. Explain each step of the program.
