

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C. U. SHAH UNIVERSITY

## Winter Examination-2022

**Subject Name: Microcontroller & Interfacing**

**Subject Code: 4TE04MCI1**

**Branch: B.Tech (Electrical)**

**Semester: 4**

**Date: 21/09/2022**

**Time: 02:30 To 05:30**

**Marks: 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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**Q-1 Attempt the following questions: (14)**

- a) Which of the following file extension that is loaded in a microcontroller for executing any instruction?  
(A) .c (B) .txt (C) .hex (D) .doc
- b) AT89C2051 has RAM of:  
(A) 128 bytes (B) 256 bytes (C) 64 bytes (D) 512 bytes
- c) 8051 series has how many 16 bit registers?  
(A) 2 (B) 3 (C) 1 (D) 0
- d) The number of timers in the 8051 is \_\_\_\_\_.  
(A)4 (B) 2 (C) 8 (D)3
- e) How many serial ports are there in the 8051?  
(A)4 (B) 2 (C) 1 (D)8
- f) How many Bits can be processed simultaneously in the 8085?  
(A)4 (B) 2(C) 8 (D)16
- g) After division operation in 8051, remainder is stored in the \_\_\_\_\_.  
(A)Accumulator (B) Register (C) PSW (D) Register bank
- h) Which of the following is an 8-bit register?  
(A) PSW (Program Status Word)  
(B) TCON (Timer Control Register)  
(C) Accumulator  
(D) All of the mentioned
- i) Which of the following is not an instruction of 8051 instructions?  
(A) arithmetic instructions  
(B) Boolean instructions  
(C) logical instructions  
(D) none
- j) The idle mode can be terminated by  
(A) PRESET  
(B) CLEAR  
(C) Interrupt  
(D) Interrupt or Reset



- k) The only way to terminate the power down mode is to  
(A) CLEAR (B) RESET (C) HOLD (D) HLT
- l) The address register for storing the 16-bit addresses can only be  
(A) stack pointer  
(B) data pointer  
(C) instruction register  
(D) accumulator
- m) Which stack is used in 8085?  
(A) FIFO (B) LIFO (C) FILO (D) None of these
- n) 8085 Microprocessor is based on \_\_\_\_\_ Architecture?  
(A) Von-Neumann (B) Harvard (C) Oxford (D) None of the above

**Attempt any four questions from Q-2 to Q-8**

<b>Q-2</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Differentiate between Microprocessor and Microcontroller.	<b>07</b>
<b>B</b>	Sketch the architectural block of 8085 microprocessor and explain each block	<b>07</b>
<b>Q-3</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Draw a general block diagram of microcontroller and explain each part.	<b>07</b>
<b>B</b>	What are the addressing modes of 8051 microcontroller? Explain each with examples.	<b>07</b>
<b>Q-4</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Describe TMOD and TCON Special Function registers.	<b>07</b>
<b>B</b>	Explain PSW special function register in 8051.	<b>07</b>
<b>Q-5</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Draw and explain Internal Port Structure of 8051.	<b>07</b>
<b>B</b>	Explain the interfacing of LCD with 8051 with necessary schematics and code for the interfacing.	<b>07</b>
<b>Q-6</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Define and describe the directives of 8051 Microcontroller.	<b>07</b>
<b>B</b>	Explain various modes of timers in 8051.	<b>07</b>
<b>Q-7</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Explain RS232 handshaking signals.	<b>07</b>
<b>B</b>	Explain various drive methods, used for driving stepper motors.	<b>07</b>
<b>Q-8</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	What is assembler directive? Explain any two assembly directives.	<b>07</b>
<b>B</b>	Explain the interfacing of 8051 with 7-Segment LED with suitable diagram.	<b>07</b>

