# C.U. SHAH UNIVERSITY
## Summer Examination-2022

**Subject Name: Microcontroller & Interfacing**

**Subject Code: 4TE04MCI1**          **Branch: B.Tech (Electrical)**

**Semester: 4**          **Date: 05/05/2022**          **Time: 11:00 To 02:00**          **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 is a type of digital logic circuit?          **(1)**
    a) Combinational logic circuits
    b) Sequential logic circuits
    c) Both a & b
    d) None of the mentioned

  **b)** Which of the following is an example of a digital Electronic?          **(1)**
    a) Computers
    b) Information appliances
    c) Digital cameras
    d) All of the mentioned

  **c)** _____ And _____ gates are universal gates?          **(1)**
    a)NAND and AND
    b)NAND and NOR
    c) NAND and OR
    d) None of the above

  **d)** What are the advantages of the digital systems?          **(1)**
    a)High-efficiency
    b)Uses less bandwidth
    c) Encryption
    d) All of the above

  **e)** In which gate the output is high when any one or all inputs are high?          **(1)**
    a)AND
    b)NAND
    c) OR
    d) NOR

  **f)** The 8 bits is equal to the _____ bytes.          **(1)**
    a)One-byte
    b)Two-bytes

c) Three-bytes
d) None of the above

**g)** Microprocessor consists of? **(1)**
a) ALU                 b) register array
c) control unit            d) All of the above

**h)** Ready pin of microprocessor is used **(1)**
a) to indicate that microprocessor is ready to receive inputs
b) to indicate that microprocessor is ready to receive outputs
c) to introduce wait state
d) to provide direct memory access

**i)** 8085 microprocessors have how many pins **(1)**
 a) 30                b) 39
 c) 41                  d) None of above

**j)** The clock speed of 8085 is **(1)**
a) 1 MHz             b) 1 KHz.
c) 3.2KHz           d) 3.2MHz

**k)** In 8085 name/names of the 16 bit registers is/are **(1)**
a) Stack pointer         b) ALU
c) Both A and B        d) none of these.

**l)** The parity is used to _____ **(1)**
a)Increase the switching operation
b)Reduce switching operation
c) Detect errors
d) None of the above

**m)** How many bits does one word have? **(1)**
a)4 bits
b)8 bits
c) 16 bits
d) 32 bits

**n)** The counter is used to count the number of _____ **(1)**
a)Digits
b)Bits
c) Pulses
d) None of the above

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

| | | |
|---|---|---|
| **Q-2** | **Attempt all questions** | **(14)** |
| **a)** | Draw and explain architecture of 8085 microprocessor. | **(7)** |
| **b)** | Write and explain different types of flag resistor in 8085 microprocessor. | **(7)** |
| | | |
| **Q-3** | **Attempt all questions** | **(14)** |
| **a)** | Draw and explain pin diagram of 8085 microprocessor. | **(7)** |
| **b)** | Write and explain different addressing mode of 8085 microprocessor. | **(7)** |
| | | |
| **Q-4** | **Attempt all questions** | **(14)** |
| **a)** | Compare microprocessor and microcontroller. | **(7)** |
| **b)** | Draw and explain architecture of 8051 microprocessor. | **(7)** |

**Q-5**       **Attempt all questions**                                                                                   **(14)**
    **a)**   Explain basic and special features of 8085 microprocessor.                                          **(7)**
    **b)**   Write and explain different addressing mode of 8051 microcontroller.                                **(7)**

**Q-6**       **Attempt all questions**                                                                                   **(14)**
    **a)**   Draw and explain structure of TMOD Register.                                                        **(7)**
    **b)**   Write short note on analog to digital converters.                                                   **(7)**

**Q-7**       **Attempt all questions**                                                                                   **(14)**
    **a)**   Classify the semiconductor memory and write advantages of semiconductor memory.                     **(7)**
    **b)**   Distinguish between Static RAM and Dynamic RAM.                                                      **(7)**

**Q-8**       **Attempt all questions**                                                                                   **(14)**
    **a)**   Write short note on 8251 interfacing serial devices.                                                **(7)**
    **b)**   Explain data transmission and reception using RS 232C.                                              **(7)**