C. U. SHAH UNIVERSITY
Winter Examination-2019

Subject Name: Microprocessor and its applications

Subject Code: 4TE04MPA1   **Branch: B.Tech (EC)**

Semester: 4   **Date: 13/09/2019**   **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.

Q-1   **Attempt the following questions**   **(14)**
  a) Define the term Byte.
  b) Define the term word.
  c) Define the term microprocessor.
  d) Define the term instruction.
  e) Draw the diagram for microprocessor based system with bus architecture.
  f) Draw the programming model of 8085 microprocessor.
  g) Why address bus is unidirectional?
  h) Why data bus is bidirectional?
  i) What is the memory word size required in an 8085 system?
  j) If the memory chip size is 1024 x 4 bits, how many address lines and data lines does memory chip have?
  k) The memory address of the last location of a 1K byte memory chip is given as FBFF H. Specify the memory map.
  l) What is the function of ALE pin in 8085 microprocessor?
  m) What is the function of HLDA pin in 8085 microprocessor?
  n) What is the function of READY pin in 8085 microprocessor?

Attempt any four questions from Q-2 to Q-8
Q-2   **Attempt all questions**   **(14)**
  a) Explain in detail with diagrams microprocessor initiated operations.   **07**
  b) Draw the chart for memory classification. Explain different types of ROMs in detail.   **07**
Q-3   **Attempt all questions**   **(14)**
  a) Draw the internal architectural block diagram of 8085 microprocessor and explain each block in brief.   **07**
  b) Comparison between memory mapped I/O and I/O mapped I/O interfacing methods.   **07**

Q-4		**Attempt all questions**	**(14)**
	a)	What is an interrupt? Explain with diagram vectored interrupts in 8085 µp.	**06**
	b)	Explain the following instructions with examples 1. LDA 2. ADD 3. SUI 4. DCX	**08**
Q-5		**Attempt all questions**	**(14)**
	a)	What is stack and stack pointer? Explain working of PUSH and POP instruction with suitable example.	**07**
	b)	Write an assembly language program to add two 16-bit data.	**07**
Q-6		**Attempt all questions**	**(14)**
	a)	What do you mean by addressing modes? Explain each of them in detail with examples.	**07**
	b)	Write an assembly language program to subtract two 16-bit data.	**07**
Q-7		**Attempt all questions**	**(14)**
	a)	Write an assembly language program to find out positive numbers from the given array of data bytes.	**07**
	b)	Write an assembly language program to find out smallest number from the given array of data bytes.	**07**
Q-8		**Attempt all questions**	**(14)**
	a)	Draw the internal block diagram of 8255 and explain the functions of each block in details.	**07**
	b)	Draw the internal block diagram of 8279 and explain the functions of each block in details.	**07**