Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name: Microprocessor & Its applications

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

Semester: 4 **Date: 05/05/2017** **Time: 02:00 To 05:00** **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.

Q-1		**Attempt the following questions**	**(14)**
	a)	Define the following terms 1. Instruction. 2. Mnemonics.	1
	b)	Define the following terms 1. Byte. 2. Word.	1
	c)	Define the following terms 1. Low level languages. 2. High level languages.	1
	d)	Define the following terms 1. Program. 2. Software.	1
	e)	Draw the block diagram of µp based system with bus architecture.	1
	f)	Draw the hardware model of 8085 µP.	1
	g)	State the 8-bit registers available in 8085 µP.	1
	h)	State the 16-bit registers available in 8085 µP.	1
	i)	Explain in brief static RAM.	1
	j)	Explain in brief dynamic RAM.	1
	k)	What is the memory word size required in 8085 system?	1
	l)	If the memory chip size is 2K x 8 bits, how many address lines are necessary on this chip?	1
	m)	If the memory chip size is 2048 x 8 bits, how many chips are required to make up 16KX8 memory?	1
	n)	The memory address of the last location of a 1 K byte memory chip is given as FBFF H. State first location of the memory.	1

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

Q-2		**Attempt all questions**	**(14)**
	(a)	State different operations performed by microprocessor. Explain in detail internal data operations performed by microprocessor.	**07**
	(b)	Draw the 8085 microprocessor signals diagram. Classify signals into groups and explain detail each of them.	**07**
Q-3		**Attempt all questions**	**(14)**
	(a)	Draw the functional block diagram of 8085 microprocessor and explain in brief each unit.	**07**
	(b)	Write a detailed note on Memory Classification.	**07**
Q-4		**Attempt all questions**	**(14)**
	(a)	Classify the 8085 instructions according to their word size. Explain each of them	**07**

with five instruction examples.

	(b)	Define the following terms 1. T-states 2. Machine cycle 3. Instruction cycle. Draw the timing diagram for the instruction STA 2050H.	**07**
Q-5		**Attempt all questions**	**(14)**
	(a)	Write an ALP to subtract one 8-bit number stored at memory location 2050H from another number stored at memory location 2051H without use of subtract instructions. Result stored at memory locations 2052H.	**07**
	(b)	Write an ALP to multiply two 8-bit numbers which are stored at memory locations 2050H and 2051H. Result stored at memory locations 2052H (LSB) and 2053H (MSB).	**07**
Q-6		**Attempt all questions**	**(14)**
	(a)	Explain with diagrams RIM and SIM instructions.	**07**
	(b)	Draw and explain in detail 8085 vectored interrupts diagram.	**07**
Q-7		**Attempt all questions**	**(14)**
	(a)	Explain in detail successive – approximation concept used in Analog to Digital converter.	**07**
	(b)	Write short note on Programmable Peripheral Interface IC 8255A.	**07**
Q-8		**Attempt all questions**	**(14)**
	(a)	Write short note on Programmable Timer/Counter IC 8254.	**07**
	(b)	Draw the internal block diagram of IC 8279 keyboard/display interface. Explain each of blocks in detail.	**07**