Enrollment No:-_____ Exam Seat No:-_____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4TE04MPA1 **Subject Name: Microprocessor & Its Applications**

Course Name: B.Tech (EC) Date: 21/5/2015

Semester: IV Marks: 70

Time: 02:30 TO 05:30

Instructions:

1) Attempt all Questions in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

SECTION – I

Q.1	(a)	Define the following terms 1. Word 2 Instruction 3.Microprocessor 4. Software	02
	(b)	If the memory chips size is 4K x 8 bits, how many chips are required to make up 16K x 8 bits memory? How many address lines are necessary on this chip? The memory address of the last location of this memory is given as 3FFFH, specify the starting address.	02
	(c)	Some of the pins of 8085 are listed below. For each pin (line) state whether it is an input line or output line and mention their function. (1) ALE (2) SID.	02
	(d)	Draw the programming model of 8085 microprocessor.	01
Q.2	(a)	Explain in detail 8085 µp internal and externally initiated operations.	05
	(b)	Draw the timing diagram for the instruction LDA 2050H	05
	(c)	Explain with diagram demultiplexing of low order address of 8085 µp.	04
		OR	
Q.2	(a)	Draw the functional block diagram of internal architecture of 8085 µp. Explain any two units.	05
	(b)	Draw the timing diagram for the instruction STA 2050H.	05
	(c)	Classify 8085 µp instruction set w.r.to. their word size. Explain with examples each of them.	04
Q.3	(a)	Write an ALP to divide two 8-bit numbers and store the result in memory locations 2050H (quotient) and 2051H (remainder).	05
	(b)	Write an ALP to find out largest data from given array of data bytes.	05
	(c)	Compare Memory mapped I/O with I/O mapped I/O.	04
		OR	
Q.3	(a)	Write an ALP to multiply the contents of memory location 2000H by the contents of memory location 2001H and store the result in memory locations 2050H (LSB) and 2051H (MSB).	05
	(b)	Write an ALP to find out smallest data from given array of data bytes.	05
	(c)	Explain in detail with diagram different types of rotate instructions.	04

SECTION – II

Q.4	(a)	Why is data bus bidirectional? State its function.	02
	(b)	Why are the PC and SP registers 16-bit?state their function,	02
	(c)	In I/O mapped I/O, why number of input or output ports is restricted to 256 ports. Can input or output port have same port address? If yes, how does the 8085 differentiate between the ports?	02
	(d)	Draw the Hardware model of 8085 microprocessor.	01
Q.5	(a)	Design and draw memory system that contains 2K byte of EPROM, immediately followed by 1K byte of RWM. The EPROM starts at address 0000H and it is implemented by using 1K byte of EPROM. The RWM is implemented using 1K byte RAM chips. Use decoder and gates (if required) for the interfacing circuit.	05
	(b)	Classify the memory. Explain in brief different of RAM.	05
	(c)	Enlist different software time delay techniques. Explain one of them in detail with example.	04
		OR	
Q.5	(a)	Design and draw memory system with following components 1) 74LS138 3 to 8 decoder 2) 4K x 8-bit ROM with starting address 0000H. 3) 2K x 8-bit RAM immediately followed by ROM.	05
	(b)	Explain in detail different vectored interrupts with diagram for 8085 µp.	05
	(c)	Explain in detail with diagram SIM instruction format.	04
Q.6	(a)	Write an ALP to covert given packed BCD number to binary number.	05
	(b)	Explain in detail with internal diagram of IC 8255 PPI.	05
	(c)	Explain in detail with diagram flag register of 8085 µp.	04
		OR	
Q.6	(a)	Write an ALP to covert given binary number to packed BCD number.	05
	(b)	Explain in detail with internal diagram of IC 8254 programmable interval timer.	05
	(c)	Explain in detail with diagram RIM instruction format.	04