4E2914

B. Tech. (Sem. IV) (Main / Back) Examination, June/July - 2013
4CS1 Microprocessor & Interface

Time : **3** Hours]

[Total Marks : **80**
[Min. Passing Marks : **24**

*Attempt any **five** questions selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*
Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. _____ **NIL** _____   2. _____ **NIL** _____

UNIT - I

1. (a) Explain the function of various control and status signals available on 8085 microprocessor.

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(b) Why are AD_7 - AD_0 lines multiplexed ? with the help of latching circuit, explain how these lines are demultiplexed ?

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OR

1. (a) Explain the function of program counter, Accumulator, stack pointer and flag register in 8085 microprocessor in brief.

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(b) Explain the function of various types of buses in 8085 microprocessor in brief.

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UNIT – II

2. (a) Explain the all type of Rotate instructions with the help of suitable examples.

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(b) Write a program to store hexadecimal data AB in memory location 2300, split the data in the form of OA and OB, and store them in memory location 2501 and 2502.

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OR

2 (a) Compare the function of the following instruction pairs :
   (i)   RST and RET
   (ii) XTHL and XCHG
   (iii) JMP and CALL
   (iv) STAX and LDAX

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(b) Describe various addressing modes available in 8085 microprocessor with two example of each.

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UNIT – III

3 (a) What is the use of "Stack" ? Illustrate the PUSH and POP operations with help of suitable example.

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(b) Draw block diagram of 8259 programmable interrupt controller and explain function of various blocks.

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OR

3 (a) Explain the machine cycles of CALL and RET instructions with the help of timing diagram.

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(b) What do you know about the interrupt facilities available with 8085. Explain the RIM and SIM instruction briefly.

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UNIT - IV

4 (a) Explain various programming modes of 8279 keyboard and Display controller. Also draw a block diagram showing its interfacing with microprocessor 8085.

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(b) Explain the all operation mode of 8255 in brief.

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OR

4 (a) Explain the control word of 8254 PIT with example. Also explain the all operation modes of 8254 with diagram.

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(b) Design a square wave 'generator with a pulse width of 150 μ sec. by using 8254. Set the timer in mode 3. The clock frequency is 2MHz.

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UNIT – V

5 (a) Write brief technical note on bus standard RS 232C and IEEE 488.

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(b) Draw the block diagram and pin description of USART 8251 and briefly explain formats of its mode, command and status words.

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OR

5 (a) Explain the application of microprocessor in Interfacing scanned multiplexed display and liquid crystal display.

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(b) Explain RS 422A in brief with the use of diagram.

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