May/2016

Printed Pages : 2 Roll No. .....

Questions : 7 Sub. Code : 6848

Exam. Code : 0922

B.Engg. (Information Technology) 4th Semester

1046

MICROPROCESSOR

Paper : ITE–404

Time Allowed : Three Hours] **[Maximum Marks : 50**

Note :– Attempt five questions. First question is compulsory. Attempt at least two questions from each section.

I. (a) Explain the push and Pop instruction.
(b) How RST 7.5, RST 6.5 and RST 5.5 are disabled ?
(c) What are the applications of 8255 ?
(d) Distinguish between immediate and implied addressing mode of 8085 microprocessor.
(e) Define Direct Memory Access.
(f) Discuss the role of 8259.
(g) What are level-triggering interrupt ?
(h) Draw SIM and RIM instruction format.
(i) Explain the terms burst transfer and cycle stealing.
(j) Discuss the role of Program counter in 8085 processor. 10×1

SECTION–A

II. (a) Draw the timing diagram of MOV A, M and explain it in detail.
(b) Differentiate between memory mapped I/O scheme and I/O mapped I/O scheme. 5,5

III. (a) What is meant by instruction ? Discuss various instruction word sizes in 8085. Give one example of each type of instructions.

VII. a) Explain the working of DNS.
b) Explain the

(b) Write an assembly language program to arrange the n in a given array in ascending order along with appro comments.

IV. Explain the architecture of 8085 in detail with the help of a ne diagram. Also draw and discuss its pin configuration. 1

SECTION–B

V. (a) What do you understand by subroutine call ?

(b) What steps are carried out when a subroutine call is encountered ?

(c) State the difference between subroutine call and interrupts

3,4,3

VI. (a) Show the control word format for I/O mode operation of PPI 8255. Also discuss their functions.

(b) Write down the mode 0 control words for the following two cases : (a) Port A = Input Port, Port B = not used, Port C_U = Input port and Port C_L = Output port. (b) Port A = Output port, Port B = Input port, Port C = Output port

5,5

VII. (a) For a 8085 based system, let the following two instructions are carried out

LXI SP, 0000 H PUSH D with D = 09 H and E = FA H assumed.

Show the stack contents after PUSH operation.

(b) Generate a square wave of 50% duty cycle through the SOD pin of 8085.

5,5

Printed Pages : 2

Questions : 8

Roll No. .....

Sub. Code : 6847

Exam. Code : 9922

B.Engg. B.E. (MBA) 4th Semester (Information Technology)

1044

MICROPROCESSOR

Paper – I.T–423

Time Allowed : Three Hours] [Maximum Marks : 50

Note :– Attempt any five questions taking at least two from each Part.

PART–A

1. (a) Draw and explain the block diagram of 8085 MPU.

   (b) Discuss the concept of de-multiplexing of Buses and memory interface. 2×5=10

2. (a) What do you understand by interfacing ? Explain I/O interfacing in detail.

   (b) Discuss the concept of Memory-Mapped I/O. 2×5=10

3. (a) Explain Logic Operations with the help of suitable examples.

   (b) Discuss the Instruction Classification and Instruction Format. 2×5=10

4. (a) Explain 16-Bit Arithmetic Instructions with examples.

   (b) What do you mean by Counting and Indexing ? 2×5=10

PART–B

5. (a) Explain the term Debugging Counter in detail.

   (b) What do you understand by Subroutine and also explain the concept of stack ? 2×5=10

6. What is the need of interrupts ? Discuss 8085 Vectored Interrupts.

7. Explain Programmable Peripheral Interface. Discuss the working of 8255A. 10

8. Write short notes on any **two** :

   (i) Conditional Call and Return Instructions

   (ii) 8251

   (iii) Control and Status Signals. 2×5=10

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B.Engg. (Information Technology) 4th Semester

1046

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(e) Define Direct Memory Access.
(f) Discuss the role of 8259.
(g) What are level-triggering interrupt ?
(h) Draw SIM and RIM instruction format.
(i) Explain the terms burst transfer and cycle stealing.
(j) Discuss the role of Program counter in 8085 processor. 10×1

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1044

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Paper – I.T–423

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PART–B

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7. Explain Programmable Peripheral Interface. Discuss the working of 8255A. 10

8. Write short notes on any **two** :

   (i) Conditional Call and Return Instructions

   (ii) 8251

   (iii) Control and Status Signals. 2×5=10

1127

Exam.Code:0915
Sub. Code: 6779

B.E. (Computer Science and Engineering)
Third Semester
CS-304: Microprocessors

Time allowed: 3 Hours

Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.*

x-x-x

Q1.

a) Explain RIM and SIM instructions of 8085.
b) List the operating modes of 8255 PPI. Specify the handshake signals and their function if Port A of 8255 A is set as output port in mode 1. (2)
c) Compare vectored and non-vectored interrupts. (2)
d) Give the two examples for each of the following: (2)
   i. Instructions that need only OF with 6 T states (2)
   ii. Instructions that need OF, MR, MW.
e) What is DMA? What is the need for DMA transfer? (2)

SECTION-A

Q2.

a) Design a microcomputer consisting of four chips of 4K each and a ROM chip of 2K bytes. It has two input ports and two output ports. Give the address of all these chips and I/O ports if configured in (i) I/O mapped I/O (ii) memory mapped I/O. (2)
b) Interface the following chips to 8085 microprocessor: (i) One chip of 4K EPROM with starting address of 8000 H (ii) 2 chips of 2K SRAM with starting address of 9000H & A800 H (iii) One 4K EPROM with starting address B000 H (iv) One chip of 1K RAM with address of CC00 H (v)One 2K SRAM with starting address of D000 H.Use 74138 decoder and other logic gates. (5)
c) Write an 8085 assembly language program to check if the 8-bit number at location X is a palindrome or not. If the number is not palindrome store FF H at location X+1 else 00 H. (3)

Q3.

a) Briefly explain fetch cycle, instruction cycle and execute cycle with reference to 8085 microprocessor. (3)
b) Draw and explain the timing diagram of IN 40H. (3)
c) Write an 8085 assembly language program to sort N one byte numbers in ascending order using selection sort. N is at location X and the number from location X + 1. (4)

Q4.

a) Write an 8085 assembly language program to find LCM of two numbers stored at location 2500H and 2501H. (5)
b) Write an 8085 assembly language program to perform addition of two multi-byte BCD numbers. The numbers are stored at locations X and Y in byte reversal form. The

size of bytes is given in location SIZE. The result is to be stored at location Z in byte reversal form using 1 byte more than size of multi-byte numbers. (5)

SECTION-B

Q5.

a) What is minimum t-states for which INTR should remain high to be recognized by 8085 and why? (2)

b) A 1 Hz square wave is connected to RST 7.5 of 8085 based system with 8255. Design a real time clock indicating only seconds in BCD form on port B of 8085. Write a program for this design. (5)

c) With a neat diagram briefly explain the interfacing of 8257 in an 8085 based system. (3)

Q6.

a) Write a subroutine, LHLX load H and L indirect through DE and load L with contents of memory location pointed by contents of DE and loads H with the contents of succeeding memory location. The subroutine should leave all the microprocessor registers except H and L unaltered including flag register. (3)

b) Briefly explain about 8255 PPI. Explain how the interface a digital to analog convertor using 8255. (7)

Q7.

a) Provide interpretation of the bits of control port in Programmable Interval Timer 8254. (2)

b) Write a program segment to configure the timers in Programmable Interval Timer 8254 as indicated below. Assume that Timer 0 address is 60H and control port address is 63H. (6)

   i. Timer 0: Mode 2, counting in decimal, load 16 bit value
   ii. Timer 1: Mode 0, counting in hexadecimal, load LS 8 bit value
   iii. Timer 2: Mode 4, counting in decimal, load 16 bit value.

c) Write a program segment to provide a delay of 1 second assume the clock frequency of 3MHz. (2)

x-x-x