Total No. of printed pages = 4

CAI-505/M&A/5th Sem/2016/N

MICROPROCESSORS AND APPLICATIONS

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. Draw the functional block diagram of 8085 Microprocessor and describe the architecture of microprocessor with all the constituent elements. 14

2. (a) Design an interfacing circuit to interface 8085 Microprocessor with 1K RAM and 2K ROM. Also, mention the address range of the two memory chips. 7

   (b) Draw the timing diagram of any *one* of the following instructions : 5

   (i) IN

   (ii) STA

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(c) Discuss in brief the operation of the following devices : 2

(i) Tri-state buffer

(ii) Latches.

3. (a) Describe the addressing modes of 8085 Microprocessor. 5

(b) Define the following instructions : 5

(i) LXI

(ii) CMA

(iii) JNC

(iv) RAL

(v) ANI

(c) Write a program in 8085 assembly language to determine the largest of two numbers. 4

4. (a) Write a time delay program in 8085 assembly language and calculate the total time delay in the program. 6

(b) Draw the block diagram of 8255 Programmable Peripheral Interface and describe the functions of constituent blocks. Also write the 8255 control word format for I/O mode. 8

5. (a) Draw the block diagarm of 8253 Programmable Interval Timer. Describe any three modes of operation. 7

(b) Write a program in 8085 using following steps : 4

(i) Store data in two registers

(ii) Add the data

(iii) Perform AND operation between the result of step (ll) and 83H

(iv) Store the result in memory location C050.

(c) Name the 8085 interrupts. What do you understand by vectored and non-vectored interrupts ? Give examples. 3

6. (a) Differentiate the following : 2+3=5

(i) Simplex and Duplex Transmission

(ii) Synchronous and Asynchronous Transmission.

(b) Write a program in 8085 assembly language to transfer five blocks of data from one memory location to another. 4

(c) Write the steps involved in the execution of a program in 8085 microprocessor using a suitable diagram. 5

7. Write short notes on any *two* of the following : 7×2=14

(i) 8279 Programmable Keyboard / Display Interface

(ii) 8251 Programmable Communication Interface

(iii) ADC interfacing with 8085

(iv) Memory mapped I/O.