Total No. of printed pages = 4

CAI-505/M&A/5th Sem/2017/M

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. (a) Draw the bus structure of 8085 microprocessor and explain address bus, data bus and control bus. 6

   (b) What do you understand by demultiplexing of address data bus ? How it is done ? 4

   (c) What is the function of stack pointer and program counter ? 2

   (d) How 8085 instructions are classified as one byte, two byte and three byte instructions ? 2

[Turn over

2. (a) Name the flags in 8085 microprocessor. Describe each of them. 5

(b) Design an interfacing circuit to interface 2K RAM and 1K ROM with 8085 microprocessor. Also, determine the address range. 6

(c) Write a program to add three numbers stored in memory location 1050, 1051 and 1052 and display the result in location 1070. 3

3. (a) Explain the control and status signals of 8085 microprocessor. 5

(b) Draw the timing diagram of any *one* of the following : 6

(i) IN

(ii) OUT

(c) Write a program to perform : 3

(i) AND operation with two numbers stored in memory location 1050 and 1051.

(ii) ADD 52H with the result of step(1).

(iii) Store the final result in location 1070.

4. (a) Define the following instructions : 10

(i) LDA (ii) INR

(iii) LXI (iv) STAX

(v) CMP (vi) JMP

(vii) JZ (viii) ADI

(ix) ORA (x) RAL

(b) Explain peripheral mapped I/O interfacing using a suitable diagram. 4

5. (a) Draw the block diagram of 8255 Programmable Peripheral Interface. Explain each block. 8

(b) Write a time delay program and calculate the total time delay. 4

(c) Name the 8085 Interrupts. Identify vectored and non-vectored interrupts. 2

6. (a) Explain the function of 8253 Programmable Peripheral Timer using a suitable block diagram. Describe any two modes of its operation. 8

(b) Write a program to find the largest of three numbers. 4

(c) What are asynchronous communication and synchronous communication ? 2

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

(a) 8279 Keyboard / Display Interface

(b) ADC Interfacing with 8085 microprocessor

(c) Memory mapped I/O.