EE 131505 NR

Roll No. of candidate

4/3/22   2021

B.Tech. 5th Semester End-Term Examination

CSE + EE

MICROPROCESSOR AND MICROCONTROLLER

(New Regulation)

Full Marks – 70

Time – Three hours

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

GROUP – A

1.   Answer *all* the question :   (10)

   (i)   LXI H,2500H uses (immediate addressing mode / direct addressing mode / register addressing mode / Implicit addressing mode)

   (ii)   The result of 7Ah – A2h is (D8 / D5/ 93 / 00)

   (iii)   (TRAP/ RST7.5 /RST5.5 /INTR) has the lowest priority.

   (iv)   (LIFO / LILO / FALO / FIFO) principle is followed while storing data in stack of 8085.

   (v)   8085 is (8 bit /16 bit / 32 bit / 64 bit) microprocessor.

   (vi)   (MOV B , M / PCHL / JNZ / SUB B) will change the content of the accumulator.

   (vii)   HLT opcode will (load data to accumulator /store the result in memory / load accumulator with contents of register / end of the program)

   (viii)   SIM means (select interrupt mask / sorting interrupt mask / set interrupt mask / none of these)

   (ix)   Data bus is (bidirectional / unidirectional)

   (x)   The status flag available in 8085 but not in 8051 is (carry flag / Overflow flag / Auxillary flag / Zero flag)

[Turn over

GROUP – B

Answer *any four* questions.

2. (a) Specify the size of data, address, memory capacity of 8085 microprocessor. (4)

   (b) List the 16 bit registers of 8085 with their functions. (6)

   (c) What is the need of multiplexing the address and data bus? How to demultiplex them? (5)

3. (a) How the HLT instruction is executed? (3)

   (b) Explain the difference between a JMP and CALL instruction. (6)

   (c) Describe with suitable example the operation of stack. (6)

4. (a) Differentiate between I/O mapped I/O mapping and Memory mapped I/O mapping. (6)

   (b) Differentiate ROM and RAM. Interface one 8K × 8 EPROM and one 8K × 8 RAM with 8085 together. (9)

5. (a) Explain the following instructions with suitable example of each (6)

   (i) DAA

   (ii) SHLD

   (iii) LDA

   (iv) STA

   (b) Write an 8085 assembly language program with comment line to find the smallest number in an array of 8 bit numbers. (6)

   (c) Specify the contents of the registers and the flag status as the following instructions are executed. (3)

   MVI A,00H

   MVI C,0F8

   ADD C

   HLT

6. (a) List the four instructions that control the interrupts of 8085. (4)

   (b) Describe the different types of interrupts used in 8085 microprocessor. Arrange them priority wise. (6)

   (c) Draw and explain the timing diagram of memory read cycle with example. (5)

7. (a) Draw the architecture of microcontroller 8051. (5)

   (b) Explain the operation of 8155/8255 PPI Port A programmed as input and output in Mode 1 with necessary handshaking signals. (6)

   (c) Differentiate the RISC and CISC processor. (4)