Total No. of printed pages = 6

END SEMESTER EXAMINATION – 2019

Semester : 5th (New)

Subject Code : Et-502

MICROPROCESSOR

Full Marks – 70

Time – Three hours

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

Instructions :

1. *All* questions of PART – A are compulsory.
2. Answer any *five* questions from PART – B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10

   (a) One machine cycle consists of _____ to six T-states.

   (b) ALE is _____ at the bigining of the operation.

[Turn over

(c) In 8085 read and write control signals are active _______.

(d) Flags are used to _______ the conditions of the result of an operation.

(e) In I/O mapped I/O, the MPU uses_______ address lines to identify I/O devices.

(f) 8255(PPI) has _______ I/O pins.

(g) DMA is an I/O technique commonly used for _______ speed data transfer.

(h) The level of the pin _______ decides the operating modes of 8086.

(i) Memory address capacity of 8086 is _______

(j) The numbers of data lines in 8086 are _______.

2. Write true or false : 1×10=10

(a) In 8086 the term HMOS is high speed data transfer.

(b) INTR has the highest priority among the interrupts in 8085.

(c) The sign flag is set when the contents of accumulator become negative during an operation.

(d) Port B of 8255 can be used as two port.

(e) CMP means complements the content of the accumulator.

(f) The meaning of ADD CX , AX is content of AX will be added with CX.

(g) In 8086 there are four 8-bit general purpose register.

(h) PUSH and POP are used to enter and retrieve the data to and from the stack.

(i) In 8259 IRR has eight input lines for interrupt.

(j) In 8085 JMP 16 bit address is an conditional branching instruction.

3. Choose the correct answer : 1×5=5

(a) The numbers of interrupt lines in 8085 is

(i) 2 (ii) 3

(iii) 4 (iv) 5

(b) The number/numbers of machine cycles required to exccute the instruction STA 2050 H is/are

(i) 1 (ii) 2

(iii) 3 (iv) 4

(c) DMA controller 8257 has the channels

(i) 2 (iii) 3

(ii) 4 (iv) 6

(d) Stack segment is a 16 bit register containing address of

(i) 1Mb (ii) 64 KB

(iii) 256 Kb (iv) 2Mb

(e) The 8086 is a microprocessor of

(i) 8-bits (ii) 16-bits

(iii) 64-bits (iv) 32-bits

PART – B

Marks – 45

4. (a) What is high level language ? Give example. What is mnemonics ? 1+2=3

(b) Why RAM is called random access memory ? Write about the SRAM and DRAM briefly. 1+5=6

5. (a) What is timing diagram ? If operating frequency is 3 MH_z, what will be the time required to execute opcode fetch cycle ? 2+1=3

(b) Draw the timing diagram for STA 8050H and explain. 6

6. (a) Why BUS is required in 8085 MP and why data bus is bidirectional ? 2+1=3

(b) Explain with the help of proper diagram, the memory read operation. 6

7. (a) What are the different segment registers and what are the advantages of segmentation ? 1+3=4

(b) In 8086 what are the different classes of instructions ? Explain two of them with examples. 5

8. (a) Explain demultiplexing of AD_0 to AD_7 with proper diagram. 5

(b) What is subroutines and counter in 8085 programing ? 4

9. (a) Write an ALP to find 2s complement of a 16-bits number. 6

(b) Write an ALP to find larger number of two 8-bits. 3

10. (a) Why 8255 is required in 8085 MPU ? Describe mode 1 of 8255. 2+3=5

(b) Describe the control word format of 8255. 4

11. (a) What task are done by 8259 (PIC) ? 2

(b) Draw the internal block diagram of 8259 and explain. 7