M.Sc. ELECTRONICS
THIRD SEMESTER
MICROPROCESSOR & MICROCONTROLLER
MSE-301

Duration: 3 Hrs.   Marks: 70

PART : A (OBJECTIVE) = 20
PART : B (DESCRIPTIVE) = 50

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.   Marks: 50

[Answer question no. One (1) & any four (4) from the rest]

1. a) Define the addressing modes of 8085 with examples.   (5+5=10)
    b) Write an 8086 assembly language program to find the largest 8-bit
       number in an array of ten numbers.

2. a) How many status flags does 8086 have? Discuss the role of each flag. (6+4=10)
    b) How many functional units does 8086 contain? Discuss them in brief.

3. a) Discuss the interrupt system of Intel 8085.   (5+5=10)
    b) Discuss the bit pattern of the accumulator for SIM instruction.

4. a) Discuss the various addressing modes of 8086.   (6+4=10)
    b) Write an 8086 assembly language program to move block of data stored
       in location from 0202H to 0206H, to a new memory location starting
       from 0302H to 0306H.

5. a) Write an 8085 assembly language program to add two 8-bit numbers,   (5+5=10)
       the sum may be of 16-bits.
    b) Write an 8085 assembly language program to multiply two 8-bit
       numbers stored in memory 7200H and 7201H; and store the 16-bit result
       in memory 7301H and 7302H.

6. a) Discuss the interrupt system of 8051 microcontroller.   (7+3=10)
    b) The contents of R0 and A are 25H and 35H respectively. What will be
       the content of the destination register after the execution of each line of
       the following set of instructions?

                ADD A, R0;
                MOV R0, A;
                ADD A, R0;
                ADD R0, #07H;

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[PART-A : Objective]

__Choose the correct answer from the following :__   **1×20=20**

1. How many machine cycles are required for execution of STA 7532 H?
   a. 3   b. 4   c. 5   d. 6

2. Which one of the following 8085 instruction may be used to clear the accumulator content irrespective of its initial value?
   a. ADD A
   b. XRA A
   c. SUB A
   d. ANA A

3. A single instruction to clear the lower nibble of accumulator in 8085 language assembly is:
   a. XRI 0FH
   b. ANI F0H
   c. XRI F0H
   d. ANI 0FH

4. Which of the following lists the interrupt in decreasing order of priority?
   a. TRAP, RST 5.5, RST 6.5, RST 7.5, INTR
   b. TRAP, RST 7.5, RST 6.5, RST 5.5, INTR
   c. INTR, TRAP, RST 7.5, RST 6.5, RST 5.5
   d. RST 7.5, RST 6.5, RST 5.5, TRAP, INTR

5. The addressing mode in instruction XRI 05H is:
   a. Direct
   b. Register indirect
   c. Register
   d. Immediate

6. In 8085 microprocessor, which one of the following statement is wrong?
   a. There is a pin available for serial input.
   b. There is a pin available for serial output.
   c. Serial I/O is possible through SIM and RIM instruction.
   d. Serial I/O is not possible.

7. An 8-bit microprocessor can have _____ address lines.
   a. 8
   b. 16
   c. 32
   d. Cannot be predicted.

8. A number of 1-bit registers used in microprocessors to indicate certain conditions are usually referred to as:
   a. Shift registers
   b. Flags
   c. Latches
   d. Counters

9. How many 16-bit special purpose registers are present in 8085 microprocessor?
   a. 16   b. 2   c. 8   d. 6

10. The first machine cycle of an instruction is always:
    a. A memory read cycle.
    b. A fetch cycle.
    c. An I/O read cycle.
    d. A memory write cycle.

11. When referring to instruction words, a mnemonic is:
    a. A short abbreviation for the operand address.
    b. A short abbreviation for the data word stored at the operand address.
    c. Shorthand for machine language.
    d. A short abbreviation for the operation to be performed.

12. Which one of the following statements for Intel 8085 is correct?
    a. PC specifies the address of the instruction last executed.
    b. PC specifies the address of the instruction being executed.
    c. PC specifies the number of instructions executed so far.
    d. PC specifies the address of the next instruction to be executed.

13. 8085 microprocessor has how many pins?
    a. 30
    b. 40
    c. 39
    d. 41

14. The instruction MOV AX,[2500H] is an example of:
    a. Immediate addressing mode.
    b. Direct addressing mode.
    c. Indirect addressing mode.
    d. Based indexed addressing mode.

15. The stack is accessed using:
    a. SP register
    b. SP and SS register
    c. SS register
    d. None

16. Both the operands source and destination of an instruction cannot be:
    a. Register, register
    b. Memory location, memory location
    c. Immediate data, register
    d. Memory location, register

17. When the microcontroller executes some arithmetic operations, then the flag bits of which register are affected?
    a. DPTR
    b. SP
    c. PC
    d. PSW

18. The internal RAM of the 8051 microcontroller is:
    a. 32 bytes
    b. 64 bytes
    c. 256 bytes
    d. 128 bytes

19. MOV A,@R1 will:
    a. Copy R1 to the accumulator.
    b. Copy the contents of memory whose address is in R1 to the accumulator.
    c. Copy the accumulator to R1.
    d. Copy the accumulator to the contents of memory whose address is in R1.

20. An alternate function of port pin P3.4 in the 8051 is:
    a. Timer 1
    b. Timer 0
    c. Interrupt 1
    d. Interrupt 0

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Serial no. of the main Answer sheet

Course : _____

Semester : _____   Roll No : _____

Enrollment No : _____   Course code : _____

Course Title : _____

Session : _____ 2017-18 _____   Date : _____

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Full Marks	Marks Obtained
20	

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Scrutinizer's Signature   Examiner's Signature   Invigilator's Signature