

**BCA/MAP:501 (O)**

**2024**

**( 5th Semester )**

**BACHELOR OF COMPUTER APPLICATIONS**

**Paper : MAP:501 (Old Course)**

**( Microprocessor Architecture and Programming )**

*Full Marks : 70*

*Pass Marks : 45%*

*Time : 3 hours*

**( PART : B—DESCRIPTIVE )**

**( Marks : 45 )**

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

1. (a) With neat pin diagram, explain the various signals of 8085 microprocessor. 9

*Or*

- (b) Draw and explain the architecture of 8085 microprocessor. 9

2. (a) Explain the classification of instruction in 8085 microprocessor. 9

( 2 )

Or

- (b) Explain the timing diagram of 8085 microprocessor. 9
3. (a) Write an assembly language program to find the smallest number. 4
- (b) Write an assembly language program to sort the number in ascending order. 5
- Or
- (c) Write an assembly language program to find the largest number. 4
- (d) Write an assembly language program to sort the number in descending order. 5
4. (a) List the various addressing modes of 8085 microprocessor and explain each with suitable example. 6
- (b) List the salient feature of 8085 microprocessor. 3

Or

- (c) Write notes on the following : 9
- (i) Stack
- (ii) Conditional call
- (iii) Subroutine

( 3 )

5. (a) What is addressing mode? Explain different addressing modes supported by 8086 microprocessor. 6
- (b) List the salient features of 8086 microprocessor. 3
- Or
- (c) Draw and explain the pin diagram of 8086 microprocessor. 9

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( 5th Semester )

**BACHELOR OF COMPUTER APPLICATIONS**

Paper : MAP:501 (Old Course)

**( Microprocessor Architecture and Programming )**

( PART : A—OBJECTIVE )

( Marks : 25 )

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

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

(a) The highest priority interrupt in 8085 is

(i) TRAP ( )

(ii) RST 7.5 ( )

(iii) RST 6.5 ( )

(iv) INTR ( )

(b) Processor status word of 8085 microprocessor has which of the following five flags?

(i) S, Z, AC, P, CY ( )

(ii) S, OV, AC, P, CY ( )

(iii) S, Z, OV, P, CY ( )

(iv) S, Z, AC, P, OV ( )

(c) In an Intel 8085, which is the first machine cycle of an instruction?

(i) An op-code fetch cycle ( )

(ii) A memory read cycle ( )

(iii) A memory write cycle ( )

(iv) An I/O read cycle ( )

(d) In 8085 microprocessor system, the direct addressing instruction is

(i) MOV A,B ( )

(ii) MVI B, OAH ( )

(iii) MOV C,M ( )

(iv) STA address ( )

(e) The stack pointer register in a microprocessor

- (i) counts the number of programs being executing on the microprocessor ( )
- (ii) counts the number of instructions being executing on the microprocessor ( )
- (iii) keeps the address of the next instruction to be fetched ( )
- (iv) holds the address of the top of the stack ( )

(f) A register in the microprocessor that keeps track of the answer or result of any arithmetic or logical operation is the

- (i) stack pointer ( )
- (ii) program counter ( )
- (iii) instruction pointer ( )
- (iv) accumulator ( )

(g) In 8085 microprocessor, sequencing the execution of instruction is done by the

- (i) accumulator ( )
- (ii) flag ( )
- (iii) stack pointer ( )
- (iv) program counter ( )

(h) In 8085, the pairing of registers B, C, D, E, H, L is

- (i) B-C, D-E, H-L ( )
- (ii) B-D, C-E, H-L ( )
- (iii) B-C, D-L, H-E ( )
- (iv) B-H, D-E, C-L ( )

(i) Which of the following is correct about the 8086 microprocessor?

- (i) It is an 8-bit microprocessor ( )
- (ii) It has a 16-bit data and a 20-bit address bus ( )
- (iii) It uses a Harvard architecture ( )
- (iv) It was introduced by Motorola ( )

(j) What is microprocessor?

- (i) An electronic device that displays images on a screen ( )
- (ii) An integrated circuit that contains the functions of a CPU of a computer ( )
- (iii) A device that converts analog signal to digital signal ( )
- (iv) A type of memory that is directly accessible to the CPU for storing data and instruction ( )

2. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

(a) The architecture of the 8085 microprocessor is von Neumann architecture.

( T / F )

(b) 8085 microprocessor has 41 pins.

( T / F )

(c) HLT op-code means end of program.

( T / F )

(d) MVI B, 95 H instruction is an example of one-byte instruction.

( T / F )

(e) A microprocessor accessed by the outside world is being connected to external I/O devices by I/O ports.

( T / F )

3. Answer the following questions in short :

2×5=10

(a) What is an op-code? Give example.

( 7 )

(b) What is a control unit?

- (c) Write an ALP to perform 8-bit addition and store the sum in memory address 4000.

- (d) List few applications of microprocessor-based system.

( 10 )

(e) Define instruction cycle.

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