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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA–503

(Microprocessors)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 15)

I. Choose the correct answer by putting a Tick (✓) mark in the brackets provided : 1×10=10

1. In each instruction cycle, the first operation is always

   (a) memory read   ( )

   (b) opcode fetch   (✓)

   (c) memory write   ( )

   (d) chip select   ( )

2. The address bus of 8085 is

    (a) multidirectional   ( )

    (b) bidirectional   ( )

    (c) unidirectional   (✓)

    (d) None of the above   ( )

3. The ____ DAC internally converts the current signal into the voltage signal.

    (a) voltage output   (✓)

    (b) current output   ( )

    (c) multiplying type   ( )

    (d) All of the above   ( )

4. Each microprocessor recognizes and processes a group of bits called

    (a) byte   ( )

    (b) instruction   ( )

    (c) RAM   ( )

    (d) word   (✓)

5. _____ can serve as input devices and _____ can serve as output devices to microprocessor-based system.

   (a) A/D converters, D/A converters (✓)

   (b) D/A converters, A/D converters ( )

   (c) DMA, ALU ( )

   (d) None of the above ( )

6. _____ is a non-vectored interrupt.

   (a) RST 7·5 ( )

   (b) INTR (✓)

   (c) RST 1 ( )

   (d) TRAP ( )

7. The 8085 has 246-bit pattern amounting to _____ different instructions for performing various operations.

   (a) 70 ( )

   (b) 71 ( )

   (c) 72 ( )

   (d) 74 (✓)

(4)

8. The _____ is an 8-bit register that is part of the Arithmetic Logic Unit (ALU).

   (a) stack pointer　　　(　)

   (b) accumulator　　　(✓)

   (c) program counter　　(　)

   (d) general purpose register　　(　)

9. The 8085 has _____ RST instructions that are equivalent to 1-byte calls to specific locations on memory page 00H.

   (a) 3　　( )

   (b) 6　　( )

   (c) 8　　(✓)

   (d) 9　　( )

10. _____ is a 1-byte instruction which adds the contents of a general purpose register to the contents of the accumulator.

   (a) ADI　　( )

   (b) ADD　　(✓)

   (c) INR　　( )

   (d) DCR　　( )

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

1. D/A converters are classified into three categories according to their output functions; current, voltage and multiplying.

(*T* ✓ / *F*)

2. TRAP is a maskable interrupt.

(*T* / *F* ✓)

3. The beginning of the stack is defined in the program by using the instruction LXI SP.

(*T* ✓ / *F*)

4. A time delay can be designed using a register pair.

(*T* ✓ / *F*)

5. If the result of an arithmetic or logical operation has an odd number of 1s, the parity flag is set.

(*T* / *F* ✓)

(6)

III. Answer the following questions :   2×5=10

1. Define instruction cycle.

2. What are the different logic operations available in 8085?

3. What is an encoder? Give an example.

4. Among the interrupts of 8085, which interrupts have the highest priority and the lowest priority respectively?

5. What do you understand by resolution of a converter?

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA–503

(Microprocessors)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

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

1. *(a)* *(i)* What is a microprocessor? Describe the different categories in which the various functions performed by the micro-processor can be classified.

    1+6=7

    (ii) What are flash memory and EE-PROM? 3

(Turn Over)

Or

(b) (i) What are the different registers available in 8085 architecture? Explain program counter and stack pointer in brief. 5

(ii) Explain the bus structure of 8085 with the help of a neat block diagram. 5

2. (a) (i) Make a list of different branch instructions supported by 8085 and briefly explain each of them. 7

(ii) Explain in brief the different addressing modes of 8085. 3

Or

(b) (i) What are subroutines? How are they implemented in 8085? 5

(ii) What do you understand by loops? Explain the different categories of loops. 5

3. (a) (i) What are counters and time delays? 3

(ii) Describe the design of time delay using one register. 5

(iii) How is a tristate buffer different from an ordinary buffer? 2

Or

(b) (i) What is a latch? What are its uses? 2

(ii) What is a decoder? Explain how it works. 5

(iii) Write a short note on tristate devices. 3

4. (a) (i) Differentiate the following : 2×2=4

(1) Maskable and Non-maskable interrupts

(2) Vectored and Non-vectored interrupts

(ii) Write a note on RST instructions. 6

Or

(b) (i) Write a note on DMA. 5

(ii) What do you understand by hardware interrupts? Bring out the differences between RST 7·5, RST 6·5 and RST 5·5. 5

5. (a) (i) Explain the working of successive approximation A/D converter. 5

(ii) What is the difference between digital to analog (D/A) converter and analog to digital (A/D) converter? What are their functions? 2+3=5

Or

(b) (i) Write a note on R/2R ladder networks.   5

(ii) How do you interface an 8-bit A/D converter using status check?   5

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