2016

(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)* Bring out the differences among machine language, assembly language and high-level language. 2

   (b) What is ROM? Describe different types of ROM. 5

   (c) How does microprocessor work? 3

   Or

   (d) Explain the functions of the address bus, data bus and control bus. 5

   (e) Distinguish between SRAM and DRAM. 2

   (f) What are instruction cycle and machine cycle? 3

2. (a) List the five categories of the 8085 instruction set. Briefly explain each of them giving suitable examples. 7

(b) How does a microprocessor differentiate between data and instruction codes? 3

Or

(c) Explain the terms 'operation code (opcode)' and 'operand'. Illustrate these terms with the help of instructions. 5

(d) Explain the working of a stack in an 8085 microprocessor system. 5

3. (a) What are tri-state devices and why are they essential in a bus-oriented system? 5

(b) Explain the working of a decoder with the help of a suitable diagram. 5

Or

(c) Explain the process involved in the design of counters and timing delays. 5

(d) Explain the working of an encoder with the help of a suitable diagram. 5

4. (a) Write notes on TRAP and RST 7·5. 5

(b) Explain the process of DMA. 5

Or

(c) Describe various steps involved in the 8085 interrupt process. 7

(d) How does the RST (restart) instruction work? 3

5. *(a)* Explain the functions of data converters. 2

(b) Explain the basic concepts underlying the digital to analog (D/A) converters. 5

(c) Define resolution and settling time. 3

Or

(d) Explain the basic concepts underlying the analog to digital (A/D) converters. 5

(e) Write a note on successive approximation A/D converter. 2

(f) What is R/2R ladder network? What is its use? 3

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

1. The 8085 microprocessor includes ____ maskable interrupt and ____ nonmaskable interrupt.

   (a) 1, 2 ( )

   (b) 3, 2 ( )

   (c) 4, 1 ( )

   (d) 2, 1 ( )

2. ____ is not a category of digital to analog converters.

   (a) Inverter ( )

   (b) Current output ( )

   (c) Voltage output ( )

   (d) Multiplying type ( )

3. The octal buffer 74LS244 is a typical example of a

   (a) latch ( )

   (b) tri-state buffer ( )

   (c) R/W buffer ( )

   (d) dual buffer ( )

4. The _____ carries bits between the microprocessor and memory and IOs.

   (a) bus ( )

   (b) language ( )

   (c) RAM ( )

   (d) mnemonic ( )

8. The term BCD stands for

   (a) Base-coded Decimal ( )

   (b) Binary-coded Decimal ( )

   (c) Base-coded Digit ( )

   (d) Binary-coded Digit ( )

9. The _____ is a process of high-speed data transfer under the control of external devices.

   (a) DMA ( )

   (b) hard assembly ( )

   (c) debugging ( )

   (d) microcontrolling ( )

10. The _____ is a program that translates the mnemonics entered by the ASCII keyboard into the corresponding binary machine codes of the microprocessor.

   (a) assembler ( )

   (b) complier ( )

   (c) interpreter ( )

   (d) translator ( )

II. Tick (✓) whether the following statements are *True* (*T*) or *False* (*F*) : 1×5=5

1. Counter and time delays cannot be designed using software.

(*T* / *F*)

2. JNC is a data transfer instruction.

(*T* / *F*)

3. A flip-flop or a latch is a basic element of memory.

(*T* / *F*)

4. The microprocessor is a logic device.

(*T* / *F*)

5. The instruction SIM can be used to cheek whether any interrupt requests are pending.

(*T* / *F*)

SECTION—II

(*Marks* : 10)

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

1. Define conversion time in A/D.

2. What do you understand by addressing modes?

3. Define MPU.

4. What is a memory map?

5. Define interrupt.

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