M.Sc. I Semester Examination, April-2021

INFORMATION TECHNOLOGY

Paper IV

(Computer System Architecture)

Time : 3 Hours]   [Maximum Marks : 100

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/Multiple Choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION 'A'
(Objective Type Questions)

Choose the correct answer :   **1 × 10 = 10**

1. The circuit used to store and bit of data is known as :

   (a) Register   (b) Encounter

   (c) Decoder   (d) FlipFlop

2. Cache memory acts between :

   (a) CPU and RAM   (b) RAM and ROM

   (c) CPU and Hard Disk(d) None of these

3. In the case of zero address instruction method operands are stored in ………

   (a) Registers   (b) Accumulator

   (c) Pushdown stack   (d) Cache

4. The addressing mode which makes use of indirection pointer is :

   (a) Indirect addressing mode

(b) Index Addressing mode

(c) Relative Addressing mode

(d) Offset Addressing mode

5. VLSI stands for ………

(a) Very large scale Integration

(b) Very large stand-alone Integration

(c) Volatile layer system Interface

(d) None of the mentioned

6. Which among the following can be considered as most advanced ROM ?

(a) DRAM   (b) EEPROM

(c) RAM   (d) PROM

7. The length of a register is called :

(a) Word limit   (b) Word size

(c) Register limit   (d) Register size

8. What kind of flag is the sign flag :

(a) General purpose   (b) Status

(c) Address   (d) Instruction

9. Which of the following memory must be refreshed many times per second ?

(a) EPROM   (b) ROM

(c) Static RAM   (d) Dynamic RAM

10. USB type storage device is :

(a) Secondary   (b) Auxiliary

(c) Tertiary   (d) Primary

(b) Associative memory,

(c) Hierarchi memory.

5. What do you mean by computer language ? Also explain types of translator.

Or

Write short notes on the following : **(any two)**

(a) Instruction Format,

(b) Stock Organization,

(c) Addressing Modes.

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SECTION 'B'   6 × 5 = 30
(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

1. Write short note on Half and Full adder.

Or

What is ASCII and EBCDIC code ? Explain.

2. What is RTL ? Explain its operations.

Or

Explain instruction cycle and interrupt cycle.

3. What do you mean by pipeline execution ? Explain its diagram.

Or

Difference between RISC and CISC.

4. Write different modes of data transfer.

Or

Explain DMA (Direct Memory Access) with diagram.

5. What do you mean by Virtual and Cache memory ? Explain.

Or

What is mapping ? Explain in detail.

SECTION'C'   12 × 5 = 60
(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

1. Explain error detecting and correcting codes in brief.

Or

Write short notes on : **(any two)**

(a) BCD code,

(b) Logic gates,

(c) Multiplexer.

2. Explain concept of BUS adn memory transfer.

Or

Write short notes on : **(any two)**

(i) Instruction cycle,

(ii) I/O Interrupt,

(iii) Computer Register.

3. What is Input / Output processor ? Explain.

Or

Write short notes on : **(any two)**

(a) I/O interface,

(b) Asynchronous data transfer,

(c) Addition Agorithm.

4. Describe static and dynamic RAM and also write any five difference between them.

Or

Short notes on the following : **(any two)**

(a) ROM,