G-1/174/22

Roll No. .....

I Semester Examination, January 2022

M.Sc.

INFORMATION TECHNOLOGY

Paper IV

(Computer System Architecture)

Time : 3 Hours] [Max. 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 **1×10=10**

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. The full form of BCD is :

(a) Binary Computer Decimal

(b) Binary Coded Decimal

(c) Bus Compute Decimal

(d) None of the above

P.T.O.

2. Master-Slave flip-flop is used :

(a) To reduce power deficit

(b) Improve Reliability

(c) Eliminate race condition

(d) None of the above

3. Advantages of having multiple Bus organisation is :

(a) Increase in Register size

(b) Reduction in number of cycle for execution

(c) Better connectivity

(d) None of the above

4. If an operation code has n bits, this implies there are ..... possible different operators.

(a) $2n$ (b) 2^n

(c) $\frac{n}{2}$ (d) None of these

5. Full form of RISC is :

(a) Reinforced Instruction Standard Code

(b) Reshaped Information State Code

(c) Reduced Instruction Set Computer

(d) None of the above

6. ..... is the time period when the given unit is idle.

(a) Stall

(b) Contension

(c) Both (a) and (b)

(d) None of the above

7. Full form of DMA is :

(a) Dynamic Memory Alignment

(b) Direct Memory Access

(c) Double Memory Access

(d) None of the above

8. The method of Synchronising the processor with Input/Output device in which the device sends the signal when ready is :

(a) Signal Handler (b) Exception

(c) Interrupts (d) DMA

9. Memory that can be accessed by content is called :

(a) ROM

(b) Programmable Memory

(c) Virtual Memory

(d) Associative Memory

10. EEPROM can be :

(a) Reprogrammed by UV light

(b) Programmed electronically

(c) Cannot be reprogrammed

(d) None of the above

SECTION B **6×5=30**

(Short Answer Type Questions)

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

Unit-I

1. Describe the Number system used in computer.

Or

Explain Decoder concept with an example.

Unit-II

2. Write about different types of registers used in computers.

Or

Describe computer instructions in brief.

Unit-III

3. Explain Machine Language and Assembly Language in brief.

Or

Briefly explain the work of Assembler.

Unit-IV

4. Explain Interrupt mechanisms in computer.

Or

Describe about the addition algorithm used in computer Arithmetic.

Unit-V

5. Explain RAM.

Or

Explain ROM.

SECTION C **12×5=60**

(Long Answer Type Questions)

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

Unit-I

1. Explain different types of flip-flop used in computers.

Or

Explain K-Maps.

Unit-II

2. Explain the Design of Basic Computer.

Or

Explain Arithmetic Logic Microoperations.

Unit-III

3. Describe the General Register Organization.

Or

Explain various Addressing Modes.

Unit-IV

4. Describe Asynchronous Data Transfer.

Or

Explain Programmed Input/Output.

Unit-V

5. Explain Set Associative Mapping with an example.

Or

Explain cache memory organization.

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