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Subject Code:- BMCA0201

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA

SEM: II - THEORY EXAMINATION (2023 - 2024)

Subject: Computer System & Organization

Time: 3 Hours Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A 20

1. Attempt all parts:-

1-a. The radix of a Octal number is: CO1 1

Hints

N/A

(a) 2
(b) 10
(c) 8
(d) 16

1-b. A+B=B+A is a CO1 1

Hints

N/A

(a) Associative law
(b) Commutative law
(c) Idempotent law
(d) None

1-c. In D register, 'D' stands for _____ CO2 1

Hints

N/A

(a) Delay
(b) Decrement
(c) Data
(d) Decay

1-d. Symbolic notation that describes microoperation tranfers among register is callled: CO2 1

Hints

N/A

(a) Register Transfer Language
(b) Register Register Language
(c) Register Transister Language
(d) Transistor Register Language

1-e. The disadvantage/s of the hardwired approach is _____ CO3 1

Hints

N/A

(a) It is not flexible
(b) It can be used for complex instructions
(c) It is costly
(d) less flexible & cannot be used for complex instructions

1-f. Hardwired controller are better for which architecture- CO3 1

Hints

N/A

(a) RISC
(b) CISC
(c) ISC
(d) None

1-g. In which type of ROM, data can be erased by ultraviolet light and then reprogrammed by the user or manufacturer? CO4 1

Hints

N/A

(a) PROM
(b) EEPROM
(c) EPROM
(d) EEEPROM

1-h. Associative memory is also known as: CO4 1

Hints

N/A

(a) Content Addressable
(b) Column Address
(c) Commutative All
(d) None

1-i. In memory-mapped I/O _____ CO5 1

Hints

N/A

(a) The I/O devices have a separate address space
(b) The I/O devices and the memory share the same address space
(c) A part of the memory is specifically set aside for the I/O operation
(d) The memory and I/O devices have an associated address space

1-j. DMA stands for: CO5 1

Hints

N/A

(a) Direct Map All

(b) Direct Memory Access

(c) Different Memory Access

(d) Direct Miss Access

10.0 Mark

2. Attempt all parts:-

2.a. Define Number System. CO1 2

Hints

N/A

2.b. Define Bus. CO2 2

Hints

N/A

2.c. What is a control word? CO3 2

Hints

N/A

2.d. What are the advantages of using RAM? CO4 2

Hints

N/A

2.e. Why does the DMA have priority over CPU when both request memory transfer? CO5 2

Hints

N/A

SECTION B **30**

3. Answer any five of the following:-

3-a. Explain Combinational circuit. CO1 6

Hints

N/A

3-b. Perform the booth multiplication (-7)*(+3) CO1 6

Hints

N/A

3-c. Explain shift micro operation with example? CO2 6

Hints

N/A

3-d. Specify two methods to construct the common bus in short. CO2 6

Hints

N/A

3.e. Explain the working of 2 and 3 Address Organization with example. CO3 6

Hints

N/A

3.f. Briefly explain Primary storage and secondary storage with suitable examples. CO4 6

Hints

N/A

3.g. Explain the following terms with example: a) I/O Ports b) I/O devices CO5 6

Hints

N/A

SECTION C 50

4. Answer any one of the following:-

4-a. Briefly explain OR and XOR gate using 3 variables, construct truth table. CO1 10

Hints

N/A

4-b. Explain the following terms with suitable example: a) Maxterm b) Minterm c) Canonical Form CO1 10

Hints

N/A

10.0 Mark

5. Answer any one of the following:-

5-a. Explain the 3 bus organization with diagram. CO2 10

Hints

N/A

5-b. Suppose there are 8 register of 8 bit each a)Construct common bus system using Multiplexer b)Truth table CO2 10

Hints

N/A

6. Answer any one of the following:-

6-a. Mention the differences between hardwired and micro programmed control units? CO3 10

Hints

N/A

6-b. Explain general register organization and explain the functionality of each component. CO3 10

Hints

N/A

7. Answer any one of the following:-

7-a. List the difference between static RAM and dynamic RAM. CO4 10

Hints

N/A

7-b.	Construct pyramid structure of memory hierarchy, explain each term.	CO4	10

Hints

N/A

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8. Answer any one of the following:-

8-a.	Describe in detail about the Input-Output Interface using suitable diagrams.	CO5	10

Hints

N/A

8-b.	Explain with suitable diagram and flowchart the process of data transfer from I/O device to CPU using the concept of programmed I/O.	CO5	10

Hints

N/A