Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M. Sc. MRP DEGREE EXAMINATION - JANUARY / FEBRUARY 2023
SUBJECT: MRP5122 - FUNDAMENTALS OF COMPUTERS AND PROGRAMMING
(2021 SCHEME)

Marks: 100   **Duration: 180 mins.**

Answer all the questions.

1A)	Explain with a neat diagram the components and the working of the Central Processing unit (CPU).	(10)
1B)	What are the different types of primary storage on a computer?	(5)
1C)	What are the different data types supported in the C programming language?	(5)

2. Perform the following number system conversions:

2A)	$(1110.001)_2 = ($_____$)_{10}$	(4)
2B)	$(4756)_{10} = ($_____$)_8$	(4)
2C)	$(C65F)_{16} = ($_____$)_{10}$	(4)
2D)	$(1A3)_{16} = ($_____$)_8$	(4)
2E)	Represent -13_{10} using 8-bit 1's complement.	(4)

3. Write short notes and draw a neat diagram to explain the working of:

3A)	LCD Monitors.	(5)
3B)	Image scanner.	(5)

4A)	Differentiate between a while loop and a do while loop with example for each.	(8)
4B)	What are the features of the Disk Operating System (DOS)?	(2)
5)	Draw a flow chart and write a C program to input a string and count the number of vowels, consonants & words in a sentence.	(10)
6)	What is a computer network? Explain with neat diagrams, the different network topologies.	(10)
7A)	Explain with a neat diagram the fundamental elements of an Image Processing system.	(5)
7B)	What is Image enhancement? What are the categories of Image enhancement techniques?	(5)
7C)	What is a compiler? What are the steps in the compilation process?	(5)
7D)	What are the features of a Presentation Software? Give examples.	(5)

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