Code No.: DS405PC	R20	H.T.No.			8	R					

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) - December- 2025
COMPUTER ORGANIZATION AND ARCHITECTURE
(CSD)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1.	a)	Define instruction codes and give examples of different types of instruction codes used in computer systems.	[2M]
	b)	List the purpose and functionality of different types of registers used in a computer system	[2M]
	c)	What is the role of control memory in microprogrammed control?	[2M]
	d)	What is address sequencing in microprogrammed control?	[2M]
	e)	Define fixed-point representation and floating-point representation.	[2M]
	f)	What is decimal arithmetic unit in a computer system?	[2M]
	g)	Define the term "input-output interface".	[2M]
	h)	What is asynchronous data transfer in the context of input-output operations?	[2M]
	i)	Define CISC and RISC architectures.	[2M]
	j)	What is parallel processing significance in improving system performance?	[2M]

PART-B **(50 Marks)**

2.	Explain the block diagram of a digital computer and highlighting the role of each component in computer system.	[10M]
	OR	
3.	Explain how RTL is used to describe micro operations and their sequencing within a computer system.	[10M]
4.	Explain the concept of microprogrammed control and its role in computer architecture.	[10M]
	OR	
5.	Discuss the design of a control unit in a computer system.	[10M]
6.	Explain the different data types used in computer systems and discuss their representations.	[10M]
	OR	
7.	Discuss the algorithms used for addition and subtraction in computer arithmetic. Explain how these algorithms are implemented.	[10M]
8.	Discuss the advantages and disadvantages of asynchronous data transfer in computer systems.	[10M]
	OR	
9.	What is direct memory access (DMA)? Explain about the direct memory access (DMA) and their advantages.	[10M]
10.	Compare and contrast the characteristics of CISC and RISC.	[10M]
	OR	
11.	Explain the concepts of pipelining and vector processing in computer architecture with their respective advantages in enhancing system performance.	[10M]

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