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

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–II–Semester End Examinations (Supply) -June- 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)	List out the different types of computer instructions.	[2M]
b)	What operations are included in micro-operations?	[2M]
c)	What is the need of addressing modes?	[2M]
d)	Define address sequencing.	[2M]
e)	When exponent overflow and underflow occur?	[2M]
f)	How subtraction operation and other operations can be simplified in a digital system?	[2M]
g)	What are the different types of memories?	[2M]
h)	What does the processor do when an interrupt is pending?	[2M]
i)	What is the role of cache in pipelining?	[2M]
j)	Define the cache coherence.	[2M]

PART-B **(50 Marks)**

2.a)	What is digital computer? Explain about the block diagram of digital computer.	[5M]
b)	Give the flowchart for Instruction Cycle. Explain each flow.	[5M]
	OR	
3.a)	With the help of a diagram explain one stage of arithmetic logic shift unit.	[5M]
b)	Explain about computer registers set in detailed.	[5M]
4.	Explain the design of micro programmed control unit in detail.	[10M]
	OR	
5.	Briefly explain about the following.	
a)	Data transfer and manipulation.	[5M]
b)	Program control.	[5M]
6.	Convert $(10A4.249)_{16}$ into it`s binary, octal and decimal equivalents.	[10M]
	OR	
7.	Discuss Arithmetic addition and subtraction with signed-2's complement representation.	[10M]
8.a)	What is interrupt? Explain different types of interrupts.	[5M]
b)	What do you mean by the associative memory? Give the Hardware organization of associative memory.	[5M]
	OR	
9.	Illustrate asynchronous communication interface with block diagram.	[10M]
10.	Define parallel processing? Explain how the parallel processor executes with a neat sketch.	[10M]
	OR	
11.	Draw and explain arithmetic pipeline for floating point addition.	[10M]

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