PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

Make Up Examinations – December 2025

Semester : MK	**Date :** 27-12-2025
Course Code : CSE2009	**Time :** 09:30am – 12:30pm
Course Name: Computer Organization and Architecture	**Max Marks :** 100
Program :B.TECH	**Weightage :** 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A		
ANSWER ANY 5 QUESTIONS	**5Q X 4M=20M**	
1 Illustrate with suitable diagrams and explain the various schemes of assigning byte addresses across words. Represent $(456ABC8F)_H$ using these schemes.	(CO 1)	[Understand]
2 Perform the given operation using 5-bit 2's-complement representation. Identify overflow if any. a) 12 – 6 b) 10 + 7	(CO1)	[Apply]

3   Explain the following using suitable example
      a. Indirect addressing mode
      b. Auto-increment addressing mode
	(CO2)	[Understand]

4   Given R4 & R2 contain 1500 & 300. Identify the addressing mode and find the effective address of the source/destination operand in each of the following instructions?
      a. Load 20(R4), R1
      b. Move #400, R5
      c. Store 30(R4,R2), R5
	(CO2)	[Apply]

5 What are the steps for Booth's Multiplication?	(CO3)	[Remember]

6	Explain the two schemes to connect I/O devices to CPU.	(CO3)	[Understand]
7	Explain the dependencies in pipeline.	(CO3)	[Understand]

PART B			
ANSWER ANY 5 QUESTIONS		5Q X 10M=50M	
8	Explain the steps followed in the processor to load data from memory to register.	(CO1)	[Understand]
9	Outline the importance of functional units for proper working of the system.	(CO1)	[Understand]
10	Explain the memory organization of 16 X 8 chip.	(CO2)	[Understand]
11	Compare the Speed, size and cost of memory devices.	(CO2)	[Understand]
12	Explain the different ways of enabling and disabling interrupts	(CO3)	[Understand]
13	Determine how the performance increased by using pipelining concept? Explain with diagram.	(CO3)	[Understand]
14	Illustrate the hazards in pipelining.	(CO3)	[Understand]

PART C			
ANSWER ANY 2 QUESTIONS		2Q X 15M=30M	
15	Build the control sequence for the given instruction (Add A, R0) for 3 bus organization.	(C03)	[Apply]
16	Explain DMA with block diagram. Also describe how DMA is used to transfer data from peripherals.	(CO3)	[Understand]
17	Analyze the Cache Mapping techniques: Direct Mapping, Associative Mapping, and Set-Associative Mapping.	(CO2)	[Analyze]