JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester II) Examination May 2025

Programme: BCA
Course: Computer Architecture **Full Marks: 70**
Course Code:3CCC105 **Time: 3 Hrs.**
Enrolment no. _____

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions.**			**4 x 5 = 20**
a	Distinguish between computer organization and computer architecture.	CO1	Understand	
	or			
	Draw and explain the flow chart of instruction cycle.	CO1	Understand	
b	What do the instruction MOV, ADD, SUB, RAL, MVI means?	CO2	Understand	
	or			
	Compare immediate and direct addressing modes.	CO2	Analyze	
c	What do you understand by three address instruction? Explain with an example.	CO3	Understand	
	or			
	Discuss direct memory access (DMA) data transfer in detail with example	CO3	Understand	
d	Explain the Memory-Reference instructions with examples.	CO4	Understand	
	or			
	Discuss the memory hierarchy in computer architecture.	CO4	Understand	
	Section II			
	Long Answer type questions.			**3 x 10 = 30**
2	List various types of data transfer schemes. Differentiate between synchronous and asynchronous data transfer methods.	CO3	Analyze	
	or			
	Define different modes of data transfer.Give 1's complement and 2's complement representation of decimal numbers +7 and -7.	CO3	Understand	
3	What is an instruction format? Appraise with the different fields in a typical instruction format with examples.	CO2	Analyze	
	or			
	Compare the accumulator-based architecture with general register-based architecture in terms of performance, instruction complexity, and hardware design.	CO2	Analyze	
4	Explain the working and advantages of cache memory in memory organization. Discuss different cache levels (L1, L2, L3) and their roles.	CO3	Understand	
	or			
	Describe the role of the Memory Management Unit (MMU) in memory organization.	CO3	Understand	
	Section III			
	Application based questions			**1 x 20 = 20**
5	Examine the general register based CPU organization and write its features. Also explain its advantages, disadvantages and types in details.	CO1	Analyze	
	or			
	Design and explain with neat diagram of basic computer organisation and explain all the units.	CO1	Create	

COURSE OUTCOME

CO1 Explain the basics of organizational and architectural issues of a digital computer and Classify and compute the performance of machines, Machine Instructions.

CO2 Describe various data transfer techniques in digital computer and the I/O interfaces

CO3 Analyze the performance of various classes of Memories, build large memories using small memories for better performance and analyze arithmetic for ALU implementation

CO4 Describe the basics of hardwired and micro-programmed control of the CPU, pipelined architectures, Hazards and Superscalar Operations