Reg. No.										

Question Paper Code	11723

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022
Third Semester
Computer Science and Business Systems
20CBPC302 - COMPUTER ORGANIZATION AND ARCHITECTURE
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

PART-A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Describe the basic functional units of a computer.	*2,K1,CO1*
2.	What is combination and sequential circuit?	*2,K1,CO1*
3.	Draw the Instruction Execution Cycle.	*2,K1,CO2*
4.	Define Instruction set.	*2,K1,CO2*
5.	Write about micro programmed control.	*2,K1,CO4*
6.	Define branch prediction.	*2,K1,CO4*
7.	List the various peripheral devices.	*2,K1,CO5*
8.	Write the factors considered in designing an I/O subsystem.	*2,K1,CO5*
9.	Draw the hierarchical memory organization.	*2,K1,CO6*
10.	Differentiate between cache size and block size.	*2,K1,CO6*

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	(i) Draw and explain the flowchart of instruction cycle.	*6,K2,CO1*
		(ii) Explain any three addressing modes with example.	*7,K2,CO1*
		OR	
	b)	Explain in detail about various data representations with suitable examples.	*13,K2,CO1*
12.	a)	Illustrate in detail about Instruction set architecture of a CPU.	*13,K3,CO2*
		OR	
	b)	Explain in detail about RTL interpretation of instructions.	*13,K2,CO2*
13.	a)	Discuss in detail about the hardwired control unit with block diagram.	*13,K2,CO4*
		OR	
	b)	Describe the techniques for handling data and instruction hazards in pipelining with examples.	*13,K2,CO4*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11723**

14. a) What is I/O interface and explain it with block diagram. 13,K2,CO5

OR

b) Explain in detail about Programmed I/O and interrupts. 13,K2,CO5

15. a) Explain the need for memory hierarchy technology with a four level memory. 13,K2,CO6

OR

b) Describe about various mapping techniques associated with cache memories. 13,K2,CO6

PART - C (1 × 15 = 15 Marks)

16. a) Describe the algorithm for restoring division .Perform division of the following numbers using restoring division : Dividend =17; Divisor =03. 15,K3,CO3

OR

b) Draw the flowchart and explain about booth's algorithm. Multiply 100111 with 11011 using booth's algorithm. 15,K3,CO3