Bearys Institute of Technology
MANGALORE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SECOND INTERNAL SCHEME

SUB: DIGITAL DESIGN AND COMPUTER ORGANIZATION

SUB CODE: BCS302 **MAX. MARKS: 50**

FACULTY NAME: PROF. AKSHATHA S.A **DATE: 25/12/2024**

*Answer **Any One Full Question** from each part*

		PART A	MARKS SPLIT UP	M	CO	BTL
1.	a)	Design a BCD-to-excess-3 code converter Explaining the steps---------- Truth Table---------- Kmap---------- Result----------	 2 3 4 1	10	CO4	L3
	b)	Design and explain four bit subtractor. Illustrate how overflow can be identified in subtractor. Diagram---------- Explanation about Subtractor---------- Explanation about overflow----------	 3 4 3	10	CO4	L2
	c)	Explain the concept of multiplexer. Diagram---------- Explanation----------	 4 6	10	CO4	L2
		OR				
2.	a)	What is latch? With a neat diagram, explain S-R latch using NOR gate. Definition---------- Truth Table---------- Diagram---------- Explanation----------	 2 2 3 3	10	CO4	L3
	b)	What is priority encoder? Design 4:2 priority encoder with necessary diagram. Definition---------- Diagram---------- Explanation----------	 3 3 4	10	CO4	L2

	c)	Design and explain four bit adder with carry look ahead. Circuit Diagram---------- Explanation about adder---------- Explanation about carry look ahead----------	 3 4 3	10	CO4	L3
		PART B				
3	a)	With neat sketches, explain various methods for handling multiple interrupt requests raised by multiple devices. Explain how interrupt occurs---------- Explain Vector interrupt method---------- Explain priority method---------- Explain Daisy chain method----------	 2 2 3 3	10	CO2	L3
	b)	What is DMA Bus arbitration? Explain different bus arbitration Techniques. Diagram of DMA bus arbitration---------- Explain 4 types of bus arbitration technique----------	 3 7	10	CO2	L3
		OR				
4	a)	Draw a neat block diagram of memory hierarchy in a computer system. Discuss the variation of size, speed and cost per bit in the hierarchy. block diagram---------- variation of size, speed and cost per bit in the hierarchy	 3 7	10	CO2	L3
	b)	Discuss different types of mapping function of caches. Explain 4 methods each of 2.5 marks----------	 2.5*4	10	CO2	L3

Course Coordinator Module Coordinator HOD

Scheme of Evaluation Sample