Seat No.: 4819

Enrolment No. 102CTBMCS2122038

NATIONAL FORENSIC SCIENCES UNIVERSITY

B. Tech - M. Tech computer science Semester -3 - Jan-2023
& Engineering.

Subject Code: CTBTCSE SIII P5

Subject Name: Computer Organization & Architecture

Time: 11:00 am - 2:00 pm

Date: 16/01/2023

Total Marks: 100

Instructions:
1. Write down each question on separate page.
2. Attempt all questions.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

			Marks
Q.1	(a)	Explain Booth's multiplication algorithm with example	8
	(b)	Explain register stack and memory stack with neat sketches.	12
Q.2	(a)	What is assembler? Draw the flowchart of second pass of the assembler.	10
	(b)	Write a note on subroutine call and return.	10
Q.3	(a)	What is the significance of pipelining in computer architecture? Write a note on instruction pipeline.	10
	(b)	Explain Flynn's taxonomy for classifying parallel processors. Explain each class.	10
Q.4	(a)	Non-pipelined system takes 130ns to process an instruction. A program of 1000 instructions is executed in non-pipelined system. Then same program is processed with processor with 5 segment pipeline with clock cycle of 30 ns/stage. Determine speed up ratio of pipeline.	12
	(b)	Explain the different types of modes of transfer.	8
Q.5	(a)	Explain memory hierarchy design and its characteristics	10
	(b)	Explain the instruction cycle state diagram.	10
		or	
	(a)	Explain the input-output bus and interface modules	12
	(b)	Explain the differences between RISC and CISC computers	8

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