S.E. (Computer) (Sem - IV) (CBS) Date - 17/5/19

(3Hrs)

Max Marks: 80

NB: 1. Question No.1 Compulsory.
2. Solve any THREE from Q.2 to Q.6
3. Assume suitable data whenever necessary with justification.

Q1. Answer any FOUR questions

	(A)	Explain Instruction and Instruction Cycle.	(05)
	(B)	Differentiate between Memory Mapped IO and IO Mapped IO.	(05)
	(C)	Give different instruction formats.	(05)
	(D)	Explain Memory Interleaving Techniques.	(05)
	(E)	Explain Superscalar Architecture.	(05)
Q2.	(A)	Explain Branch Predication Logic and delayed branch.	(10)
	(B)	A program having 10 instructions (without Branch and Call instructions) is executed on non-pipeline and pipeline processors. All instructions are of same length and having 4 pipeline stages and time required to each stage is 1nsec. i) Calculate time required to execute the program on Non-pipeline and Pipeline processor. ii) Calculate Speedup.	(10)
Q3.	(A)	Explain different technique for design of control unit of computer.	(10)
	(B)	What is Microprogram? Write microprogram for following operations. i) ADD R1, M, Register R1 and Memory location M are added and result store at Register R1. ii) MUL R1, R2 Register R1 and Register R2 are multiplied and result store at Register R1.	(10)
Q4.	(A)	Explain Bus Contention and different method to resolve it.	(10)
	(B)	Explain different data transfer technique.	(10)
Q5.	(A)	Explain Booth's Multiplication algorithm and Perform $(17)_{10}$ X $(5)_{10}$.	(10)
	(B)	Consider a cache memory of 16 words. Each block consists of 4 words. Size of the main memory is 256 bytes. Draw associative mapping and calculate TAG, and WORD size.	(10)
Q6.	(A)	Explain different type of pipeline hazards.	(10)
	(B)	Draw and explain floating point addition subtraction algorithm.	(10)

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