(3 Hours) [Total marks:100]

Note (1) Q1. is compulsory, attempt any four out of remaining six.
(2) All question carry equal marks.
(3) Answer to sub-questions should be grouped together.

Q1.	(a)	Explain Half Adder with Logic diagram.	5
	(b)	Define flip flop. Explain the working of JK FF with logic diagram.	5
	(c)	Simplify the Boolean function F(W,X,Y,Z) = $\sum$(1,3,5,6,7,8,10,11,15) using four variable map in sum of product form. Also draw the circuit diagram of the simplified equation.	5
	(d)	Construct a logic circuit using AND, OR and NOT gates F = (A + B)' (A + C) (B + C)'	5
Q2.	(a)	List and explain different addressing modes with suitable examples	10
	(b)	Discuss the role of a Bus in computer organization. Explain various bus interconnection structures.	10
Q3.	(a)	Compare and contrast Interrupt Driven I/O, DMA and Programmed I/O.	10
	(b)	Explain fetch cycle, indirect cycle and interrupt cycle with the help of diagram.	10
Q4.		Difference the following	20
		(a) Micro-Programmed and Hard wired Control (b) SRAM vs. DRAM	
Q5.	(a)	What is RAID? Explain any 4 RAID levels in detail.	10
	(b)	Explain the structure and working of a Control Unit.	10
Q6.	(a)	Explain memory hierarchy with the help of diagram.	10
	(b)	Define Cluster. Explain different clustering methods in detail.	10
Q7.		Explain any two in details: (a) Superscalar processors (b) Cache Memory (c) SMP	20

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