Q. P. Code: 39078

(3 Hours)   Total Marks: 80

N.B.

1. Question No.1 is compulsory
2. Solve any three questions from the remaining questions
3. Assume suitable data if required

1a.	Compare Von Neumann architecture and Harvard Architecture	10
1b.	Explain IEEE 754 floating point representation formats and represent $(34.25)_{10}$ to single precision format.	10
1c	Explain memory hierarchy in the computer system.	
1d	Explain the requirements of the I/O modules.	
2a.	Draw the flowchart of Booth's algorithm. Perform following multiplication using Booth's algorithm $M = (-9)_{10}$ $Q = (6)_{10}$	10
2b.	Explain the restoring method of binary division with algorithm. Divide $(7)_{10}$ by $(4)_{10}$ using restoring method of binary division.	10
3a.	What is the necessity of cache memory? Explain set associative cache mapping	10
3b.	Explain the page address translation in case of virtual memory and explain TLB	10
4a.	Explain interrupt driven I/O method of data transfer.	10
4b.	Explain DMA method of I/O data transfer	10
5a.	Explain the superscalar architecture.	10
5b.	State the functions of control unit. Explain Micro-programmed control unit	10
6	Write short notes on (any two) :-	20
a.	Principle of locality of reference	
b.	Instruction Pipelining and its hazards	
c.	Flynn's Classification	
d.	Bus arbitration	

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