(3 hours) Total Marks: 80

N.B. 1. Question **No. 1** is compulsory
2. Attempt any **three** questions from remaining five questions
3. Assume suitable data if **necessary** and justify the assumptions
4. Figures to the **right** indicate full marks

Q1	A	Convert i) 123 in to binary ii) $(AB9)_{16}$ in to Decimal iii) $(351)_8$ in to decimal iv) 129 in to BCD v) 64 in to gray code	05
Q1	B	Draw the single and double precision format for representing floating point number using IEEE 754 standards and explain the various fields	05
	C	Explain SR Flip Flop	05
	D	Differentiate between Hardwired control unit and Micro programmed control unit	05
Q2	A	Draw the flow chart of Booths algorithm for signed multiplication and Perform 5 x 2 using booths algorithm	10
	B	Explain the different addressing modes.	10
Q3	A	For 132.65 obtain the IEEE 754 standards of Single precision and Double precision format	10
	B	Explain Micro instruction format and write a microprogram for the instruction ADD R_1 , R_2	10
Q4	A	Consider a 4-way set associative mapped cache with block size 4 KB. The size of the main memory is 16 GB and there are 10 bits in the tag. Find- 1. Size of cache memory 2. Tag directory size	10
	B	Explain Flynn's classification	10
Q5	A	Explain different types Distributed and Centralized bus arbitration methods	10
	B	Describe the detailed Von-Neumann Model with a neat block diagram	05
	C	Describe the characteristics of Memory.	05
Q6		Write Short notes on a) Grey code, BCD, Excess-3 Code with example b) Encoder and Decoder c) Cache coherence d) Instruction Pipelining	20