

(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 05
 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
- B Draw the single and double precision format for representing floating point number 05
 using IEEE 754 standards and explain the various fields
- Q1 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 10
 5×2 using booths algorithm
- B Explain the different addressing modes. 10
- Q3 A For 132.65 obtain the IEEE 754 standards of Single precision and Double precision 10
 format
- B Explain Micro instruction format and write a microprogram for the instruction 10
 $ADD R_1, R_2$
- Q4 A Consider a 4-way set associative mapped cache with block size 4 KB. The size of the 10
 main memory is 16 GB and there are 10 bits in the tag. Find-
1. Size of cache memory
 2. Tag directory size
- 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 20
 a) Grey code, BCD, Excess-3 Code with example
 b) Encoder and Decoder
 c) Cache coherence
 d) Instruction Pipelining