

(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) 147 in to binary  
ii)  $(23A)_{16}$  in to Decimal  
iii)  $(135)_8$  in to decimal  
iv) 234 in to BCD  
v) 23 in to gray code  
B Write a short note on Encoder 05  
C Differentiate between Hardwired control unit and Micro programmed control unit 05  
D Differentiate between SRAM & DRAM 05
- Q2 A Draw the flow chart of Non Restoring division algorithm and Perform  $4 \div 2$  10  
B Explain Flynn's classification 10
- Q3 A Explain the instruction cycle with the help of a neat state diagram 10  
B Explain the various addressing modes 10
- Q4 A Using booth's algorithm perform  $-5 \times -3$  10  
B Represent  $-786.25$  using IEEE 754 standards (both single and double precision format) 10
- Q5 A Explain different memory Mapping Techniques 10  
B List & Explain the Characteristics of Memory 05  
C What do you mean by cache coherence 05
- Q6 A Draw and explain 4 stage instruction pipelining and briefly describe the hazards associated with it 10  
B Describe various Bus Arbitration methods 10

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