Time: 3 Hours **Marks: 80**

N:B: 1. All questions are compulsory.
2. Figures to the right indicate full marks.

Q.1

a) Convert 05
   i. 456 in to binary
   ii. $(CDA)_{16}$ in to DECIMAL
   iii. $(35l)_8$ in to Decimal
   iv. 129 in to BCD
   v. 64 in to Gray Code

b) Create a truth table for the following logical Expression y= A AND (B OR C) 05
c) Explain D & T flip flop 05
d) Differentiate between Hardwired and Micro programmed Control unit 05

Q.2

a) List out the basic and universal logic gates with the symbol, truth table, output expression 05
b) What do you mean by BCD? Perform 792 + 128 using BCD addition 05
c) Explain the various Addressing Modes 10

Q.3

a) List the various methods to design the Hardwired control unit and explain any one 05
b) Explain the Micro instruction format 05
c) Explain Flynn's Classification 10

Q.4

a) Draw the Flow chart for Restoring division algorithm and perform 6 ÷ 2 10
b) Draw the Flowchart for the Booth's Algorithm for signed integer multiplication and Perform the multiplication between 5 and 3 using this Algorithm 10

Q.5

a) Represent -3.5 using single & double precision format of IEEE 754 standards. 10
b) Explain the various Bus arbitration methods. 10

Q.6 Write Short notes on 20
a) Cache Coherence
b) PCI bus
c) Instruction Pipelining and its hazards
d) Memory Characteristics

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X525YED39F6X525YED39F6X525YED39F6X525YED39F6