Roll	No.	

Total Pages : 2

3451

NBCA/D-24

LOGICAL ORGANIZATION OF COMPUTER (Common With CTIS/DS/AI) Paper-B23-CAP-103 [BCA-(CC-C1/DS-C1)]

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt any *five* questions. Question No. 1 is compulsory. Select *one* question from each Unit. All questions carry equal marks.

Compulsory Question

- 1. (a) Abbreviate ASCII, EBCDIC, PROM, DMA
 - (b) Prove by Induction $(a \times b) \times c = a \times (b \times c)$.
 - (c) Make TT and diagram for D-FF.
 - (d) Make Half adder and its circuit.

UNIT-I

2. Convert :

- (a) $(13.3)_{10}$ to Binary, Octal and Hexadecimal.
- (b) What is number in Binary and Octal for 2AF7 ?
- (c) $(101011101001)_2$ to Octal and Hexadecimal.
- (c) (101011101001)₂ to Octar and readering (d) What is number in Binary and hexadecimal if register stores High Low high low?

3451/5850/KD/1370

[P.T.O. 30/1 Write two coding scheme for Weighted code system,

- (a) write two control(b) Perform 2's compliment arithmetic.
 - (b) Perform 2.3 coupt -31-02 and -19-12.

UNIT-II

- 4. (a) Define Boolean algebra, differentiate from ordinary algebra and write its postulates.
 - (b) Solve Using Boolean Algebra. (i) $x\overline{x}yy + yyzz + zzxx = x\overline{x}yy + yyzz$.
 - 5. (a) Draw and Label 4 Variable K-Map and solve for four corners.
 - (b) Solve using K-Map Z = $\Sigma 0, 1, 4, 5, 11 + \Sigma_{\phi} 7, 10, 14, 15$.

UNIT-III

- 6. (a) Make circuit 10 to 4 line encoder.
 - (b) Make Code Convertor from 8421 to Cyclic.
- 7. (a) Make Full Adder using NOR Gates.(b) Explain 2 bit comparator.

UNIT-IV

- 8. Explain JKFF its problem as Race around and its solution.
- 9. (a) Make Shift Register to store 1010.
 (b) Make Excitation Table
 - (b) Make Excitation Table of JK FF.

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3.