BCA/D-14

LOGICAL ORGANIZATION OF COMPUTER-1

PAPER- BCA-114

Note: Question number 1 is compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each unit.

1. (i) What is one's complement?
   (ii) (109)16= (?)2
   (iii) What is Boolean expression?
   (iv)What is Duality principal?
   (v) What is combinational circuit?
   (vi) Explain exclusive OR gate.
   (vii) Explain Max terms.
   (viii) What is universal gate?

Unit-1

2.

(i) 11011.101+1011=

(ii) (101101101.101)2 = (?)8

(iii) (125.125)10 = (?)2

(iv) Sublract (1011)2 – (101)2 using two's complement.4,4,4,4

Or

3(a) Explain self complementing code give example

(b) Explain cyclic code

(c) Explain Normalised Representation of floating point numbers.

Unit-2

4 (i) State and prove De-Morgan's law

(ii) Draw K-map for F (x,y,z,w)

=∑(1,2,3,7,10,11,12,15)

Or

5. (a) Simplify following Boolean function

(i) x.y+x.z+y.z

(ii) (x+y), (x+z) (y+z)

(b) Express F=A+B.c is sum of minterms.

Unit-3

6. (i) Construct Logic circuit for

x.y+x.z+y.z

(ii) What NAND gate is used to perform function of AND, OR NOT gate?

Or

7 (i) "AND OR, NOT gates are logically complete" Discuss.

(ii) Explain exclusive OR and Exclusive NOR with Table and draw circuit diagram.

or

7 (i) " ANDOR,NOT gates are logically complete" Discuss.

(ii) Explain exclusive OR and exclusive NOR with Table and draw circuit diagram.

Unit- 4

8. Design full adder using Half ADDER. Explain

Or

9. What is Multiplexer? Explain with circuit diagram.