

Total No. of Questions : 4]

SEAT No. :

P-5402

[Total No. of Pages : 2

[6186]-528

S.E. (Information Technology) (In Sem.)
LOGIC DESIGN & COMPUTER ORGANIZATION
(2019 Pattern) (Semester - III) (214442)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) Answer Q.1 or Q.2 and Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

UNIT - 1

Q1) a) Do the following : [5]

- i) $(735.25)_{10} = (?)_{16}$
 - ii) $(101011.111011)_2 = (?)_8 = (?)_{10}$
 - iii) Convert 1110 gray to binary and convert binary 1011 to gray
- b) Simplify and implement following function using k-map [5]
- $f(A,B,C,D) = \sum m (0,2,5,6,7,8,10,13,14,15)$
- c) Explain the working of a 2- input CMOS NAND gate with suitable figures? [5]

OR

Q2) a) Represent the decimal numbers : [5]

- i) 396 in : 1 .BCD 2.Excess -3 code.
 - ii) Represent +40 and -40 decimal numbers using 2's complement.
- b) Add the binary numbers
- i) 1011 and 1100
 - ii) 0101 and 1111
- c) What is Logic family? Explain any four characteristics of digital lcs.[5]

P.T.O.

UNIT - 2

- Q3)** a) Design and explain full subtractor using IC 74138? [5]
b) Explain and Design Full Adder using Half Adder? [5]
c) Implement Full Adder using demultiplexer? [5]

OR

- Q4)** a) Implement the following Boolean function using single 8 : 1 multiplexer
 $f(A,B,C,D) = \sum m(1,4,6,9,13)$ [5]
b) Explain BCD to excess-3 code converter with logic diagram? [5]
c) Add $(83)_{10}$ and $(34)_{10}$ in BCD? [5]

