



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester 3) Internal Examination - 2025
COURSE CODE : US03IDELE03 (Number systems and Logic Gates)

Date: 25 – 09 – 2025(Thursday)

Time: 02:45 P.M. -03:45 P.M.

Total marks :20

Q.1 Multiple choice questions. (Attempt All)

06

- 1 The Gray code for binary code 10011101_2 is _____.
A) 10011101 C) 11010011
B) 11111111 D) 11011101
- 2 91_{10} expressed in XS3 code as _____.
A) 1001 C) 1100
B) 1010 D) 1110
- 3 Radix or base of Hexadecimal number system is _____.
A) 2 C) 8
B) 4 D) 16
- 4 Boolean algebra can be used _____.
A) For designing of the digital computers C) Building algebraic functions
B) Circuit theory D) In building logic symbols
- 5 A full adder logic circuit will have _____.
A) Two inputs and one output C) Two inputs and two outputs
B) Three inputs and three outputs D) Three inputs and two outputs
- 6 Determine the values of A, B, C, and D that make the product term $\bar{A}B\bar{C}D = 1$.
A) $A = 0, B = 1, C = 0, D = 1$ C) $A = 0, B = 0, C = 0, D = 1$
B) $A = 1, B = 1, C = 1, D = 1$ D) $A = 0, B = 0, C = 1, D = 0$



- Q.2** a) Add 347.2 to 87.5 in XS3 code.
b) Subtract 175.3 from 358.6 in BCD code
c) Convert 3485_{10} in hexadecimal number.

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OR

- Q.2** Using computer method divide 101011_2 by 110_2 .

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- Q.3** Draw the circuit diagram of two inputs AND gate using diode and explain various conditions of truth table.

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OR

- Q.3** Simplify following expression using Boolean laws:

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- A) $A(B + \bar{C}(\overline{AB + AC}))$
B) $A(B + \bar{C}(\overline{AB + AC}))$



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B.Sc. (Semester 3) Quiz - 2025



COURSE CODE : US03IDELE03 (Number systems and Logic Gates)

Date: 25- 09 – 2025 Day: Thursday

Time: 10 minutes

Total marks :05

Q-1 Whether the following statement is true or false. Write your answer in the box

- (i) 8421 is a weighted binary code.
- (ii) 38_{10} in binary code is 100110.
- (iii) 10101 is the binary code for gray code 11111.
- (iv) OR gate can be used as a comparator.
- (v) NOT gate is an universal gate.


