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Roll No.....

4th Sem, **Branch :** Electrical Engg.

Subject : Digital Electronics

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note : Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 A byte is a string of _____ bits.

a) 2 b) 6

c) 8 d) 4

Q.2 A NAND gatd is equivalent to an AND gate followed by _____ gate.

a) XOR b) NOT

c) OR d) NOR

Q.3 f A=0 and B=0 then A.B. = _____

a) 0 b) 1

c) 10 d) 11

Q.4 The number of select lines for 8:1 MUX are _____

a) 3 b) 5

c) 4 d) 2

Q.5 A full adder can add_____number of bits.

a) 1 b) 4

c) 3 d) 4

Q.6 If J=0 and K = 1 then the output Q = _____.

a) 1 b) 0

c) No change d) Toggle

Q.7 A 4 Variable K map has _____ cells.

a) 9 b) 16

c) 8 d) 3

Q.8 Expand LCD

a) Light Cell Device

b) Liquid Crystal Display

c) Light Crystal display

d) None of these

Q.9 A + 1 =

a) A b) 1

c) 0 d) A.1

Q.10 The universal gate is _____.

a) NAND b) OR

c) AND d) NOT

SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Convert binary number 11011into decimal number.

Q.12 Define Encoder.

Q.13 Draw the symbol of NAND Gate.

Q.14 Define Min Term.

Q.15 Write Down Full Form of PISO.

Q.16 Define Latch.

Q.17 What is the 1's complement of 11001011.

Q.18 Write the name of any one type of D/A converter.

Q.19 Expand RAM.

Q.20 The number of inputs in Half adder are?

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain NAND gate as universal gate.

Q.22 Draw and explain circuit diagram of 8:1 MUX.

Q.23 Explain Half adder with circuit diagram.

Q.24 Explain S-R Flip Flop with diagram.

Q.25 Explain K map and its advantage.

Q.26 Write any five difference between Static RAM and Dynamic RAM.

Q.27 Explain Decoder with block diagram.

Q.28 Explain R/2R D/A converter.

Q.29 Explain SISO with block diagram.

Q.30 Write five applications of Flip-Flop?

Q.31 Convert $(124)_{10}$ and $(100100)_8$ into binary number.

Q.32 Explain Synchronous Counter.

Q.33 Explain DeMorgan's Theorms.

Q.34 Explain NOR gate with truth table.

Q.35 Do Subtraction using 2's Compliment method: $(11011)_2 - (01101)_2$

SECTION-D

Note : Long Answer type question. Attempt any two questions out of three questions. (2x10=20)

Q.36 Minimize he following expression by using K map and realize the result by using NAND gates $Y = fm(1, 3, 7, 11, 15) + d(0, 2, 5)$

Q.37 Explain Master Slave J - K Flip Flop in detail.

Q.38 Explain the working of Ramp type analog to digital convertor with circuit diagram.