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3rd Sem / Branch : Comp, IT, Eltx, EI, Med.Eltx, Power Eltx, Elect & Eltx. Engg.
Subject:- Digital Electronics / Digital Eltx-I

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The number of digits in Hexa decimal system is (CO2)
a) 8 b) 10
c) 16 d) 2

Q.2 The NAND gate is AND gate followed by (CO4)
a) Not Gate b) OR Gate
c) NOR Gate d) EXOR Gate

Q.3 In 8:1 MUX, How many select lines are required, (CO7)
a) 4 b) 3
c) 2 d) 1

Q.4 JK Flip Flop consists of_____inputs (CO8)
a) 3 b) 4
c) 8 d) 2

Q.5 The binary number 11001 is equivalent to decimal number (CO2)
a) 25 b) 24
c) 27 d) 26

Q.6 A Full adder circuit has_____inputs (CO6)
a) 2 b) 3
c) 4 d) 8

Q.7 _____is universal Gate. (CO4)
a) NAND b) AND
c) OR d) NOT

Q.8 A Flip Flop stores _____bit of information (CO8)
a) Two b) Three
c) Four d) One

Q.9 There are_____cells in 4-variable K-Map (CO5)
a) 8 b) 16
c) 4 d) 12

Q.10 Which of the following memories must be refreshed many times per second, (CO12)
a) EPROM
b) ROM
c) Dynamic Ram
d) EEPROM

SECTION-B

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

Q.11 BCD code of $(35)_{10}$ is_____ (CO3)

Q.12 Full form of CMOS_____ (CO4)

Q.13 I'S Complent of 1011001 is _____ (CO3)

Q.14 Full form of EPROM_____ (CO12)

Q.15 Draw truth table of NAND Gate (CO4)

Q.16 Full form of ALU_____

Q.17 Draw truth table of sr Flip Flop. (CO8)

Q.18 Write any two advantages of digital signal over analog signal (CO1)

Q.19 Full Form of PIPO_____ (CO10)

Q.20 State Demorgan's theorem (CO4)

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. (CO4)

Q.22 Explain JK Flip Flop (CO8)

Q.23 Convert $(72)_{10}=(?)_2=(?)_8$ (CO2)

Q.24 Explain 1:4 Demux with diagram (CO7)

Q.25 Subtract 1010 from 1100 using one's complement method. (CO3)

Q.26 Differentiate between synchronous and Asynchronous Counter (CO9)

Q.27 Explain D Latch with diagram (CO8)

Q.28 Explain SIPO Shift register (CO10)

Q.29 Explain Dynamic RAM. (CO12)

Q.30 Explain any one type of Encoder (CO7)

Q.31 Explain Half Adder with diagram (CO6)

Q.32 Explain R/2R ladder network digital to analog converter. (CO11)

Q.33 Convert $(35)_8=(?)_2=(?)_{16}$ (CO2)

Q.34 Explain error detection (CO3)

Q.35 Simplify (CO5)

$y= ABC+\bar{A}BC+A\bar{B}C+AC$

SECTION-D

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

Q.36 Simplify using k-Map. & realize using NAND Gates only (CO5)

$F(A,B,C,D)=\Sigma m(1,2,5,7,9,11,13)+d(6,10,14)$

Q.37 Explain with block diagram, the working of Asynchronous Decode Counter (CO9)

Q.38 Explain with diagra, the working of Dual Slope A/D converter (CO11)