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126534

3rd Sem / Branch :Elect. & Eltx. Engg.

Subject:- Fundamentals of Digital Electronics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 A full adder can add ____ number of bits. (CO-6)

a) 1 b) 3
c) 2 d) 4

Q.2 The number of select lines for 8:1 MUX are (CO-7)

a) 3 b) 2
c) 1 d) 4

Q.3 A four variable K-map has _____ cells. (CO-5)

a) 32 b) 4
c) 16 d) 8

Q.4 Which gate is also called as universal gate? (CO-4)

a) EX-OR b) OR
c) AND d) NAND

Q.5 A.A=_____ (CO-5)

a) 1 b) 0
c) A d) 01

Q.6 1's complement of 1011 is (CO-2)

a) 1010 b) 0100
c) 0111 d) 1001

SECTION-D

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

Q.36 Explain with diagram, the working of synchronous decade counter. (CO-9)

Q.37 Explain with diagram, the working of Binary weighted D/A converter. (CO-11)

Q.38 Minimize the following boolean expansion using K-map method. (CO-5)

$f(A,B,C,D) = \sum m(0,1,2,4,5,6,10,12,14)$

Q.7 How many flip flops are required to make a MOD-16 counter? (CO-8)

a) 6 b) 5

c) 3 d) 4

Q.8 How is a JK FF mode to toggle? (CO-8)

a) J=0, K=0 b) J=1, K=1

c) J=1, K=0 d) J=0, K=1

Q.9 Convert Hexadecimal value 16 to decimal (CO-2)

a) 16 b) 22

c) 20 d) 10

Q.10 Shift register is a combination of _____ (CO-10)

a) Flip flop b) Latch

c) Encoder d) Decoder

SECTION-B

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

Q.11 CMOS stands for _____ (CO-4)

Q.12 PIPO stands for _____ (CO-10)

Q.13 A+A= _____ (CO-5)

Q.14 2's complement of 101101 is _____ (CO-2)

Q.15 A NAND gate is basically a _____ gate followed by _____ gate. (CO-4)

Q.16 16:1 MUX has _____ number of select lines. (CO-7)

Q.17 BCD stands for _____ (CO-)

Q.18 ASCII stands for _____ (CO-3)

Q.19 1011 + 1101 = _____ (CO-6)

Q.20 VLSI dtands for _____ (CO-4)

SECTION-C

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

Q.21 Compare Analog system with digital system. (CO-1)

Q.22 Convert $(65)_{10}=(?)_2=(?)_8$. (CO-2)

Q.23 Convert Binary number 101101 into Gray code. (CO-2)

Q.24 Explain NOR gate as universal gate. (CO-4)

Q.25 Explain half adder with circuit diagram. (CO-6)

Q.26 Explain 7-segment decoder. (CO-7)

Q.27 Explain Rs flip flop with truth table. (CO-8)

Q.28 What do you mean modulus of a counter? (CO-9)

Q.29 Explain 1:4 Demultiplexer. (CO-7)

Q.30 Explain PISO shift register. (CO-10)

Q.31 Explain applications of A/D converter. (CO-11)

Q.32 Explain tristate buffer register. (CO-10)

Q.33 Explain SISO shift register. (CO-10)

Q.34 Explain EX OR gate with truth table. (CO-4)

Q.35 Explain De Morgan's theorem. (CO-5)