Q.30 Compare the features of asynchronous & synchronous counters. (CO8)

Q.31 Under what conditions, a combinational circuit becomes sequential? (CO8)

Q.32 Explain in brief the characteristics of A/D Converters. (CO8)

Q.33 What are Finite state machines? Explain its different types. (CO8)

Q.34 Draw & Explain Binary weighted D/A converter. Write its demerits. (CO8)

Q.35 Explain the schematic of JK-MS Flip Flop, Write its Advantages. (CO8)

Section-D

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

Q.36 Explain the working of Ring counter using timing diagrams.(4) (CO8)

Q.37 Simplify f (0,1,2,5,9,10,12,14) + d (4,13) using K-Map. Draw its logic diagram. (CO4)

Q.38 Draw and explain the construction & working of Dual Slope A/D Converter. (CO8)

Note : Course Outcome (CO) mentioned in the question paper is for official purpose only.

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202445/122445/062445

4th Sem. / Branch : Mechatronics
Subject : Digital Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 In Boolean algebra, A. A = _____. (CO04)

a) 0 b) 1
c) A d) A^2

Q.2 Base of Hexa decimal number system is _____.(CO2)

a) 2 b) 4
c) 8 d) 16

Q.3 _____ gate is universal gate. (CO4)

a) OR b) AND
c) NAND d) NOT

Q.4 A Byte = _____ Nibbles (CO2)

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

Q.5 A 3 Variable K Map has _____ cells. (CO5)

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

Q.6 If both inputs of Ex-OR gate are 1, the output will be_____. (CO4)

a) 0 b) 1

Q.7 The ASCII is _____ bit code. (CO2)

a) 5 b) 6

c) 7 d) 8

Q.8 MOD 8 Counter requires _____ number of flip flops. (CO8)

a) 2 b) 4

c) 8 d) 10

Q.9 A digital signal has _____ levels. (CO3)

a) 0 b) 1

c) 2 d) Infinite

Q.10 8:1 Multiplexer has _____ select lines. (CO07)

a) 1 b) 2

c) 3 d) 4

Section-B

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

Q.11 Write any two advantages of digital signals. (CO1)

Q.12 Draw symbol of NAND gate. (CO4)

Q.13 Expand CMOS. (CO2)

Q.14 Convert 1010 into its 2's compement. (CO2)

Q.15 What is base of Hexadecimal system? (CO2)

Q.16 Define positive logic. (CO3)

Q.17 Define Encoder. (CO7)

Q.18 Name any one Adder IC. (CO7)

Q.19 Expand SIPO. (CO8)

Q.20 Define sequential circuit. (CO8)

Section-C

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

Q.21 By taking one example, Show how error correction is performed using parity? (CO2)

Q.22 Differentiate between TTL & CMOS logic families. (CO2)

Q.23 Draw the truth table & logic diagram of NOR gate. (CO4)

Q.24 Convert GRay 11001101 into Binary. (CO2)

Q25 Explain in brief the working of Full adder. (CO7)

Q.26 Convert a binary number 10110101 into Hexadecimal & Octal. (CO4)

Q.27 Explain in brief the working of BCD to 7 Segment decoder. (CO7)

Q.28 Draw the schematic & truth table of S-R flip flop. (CO8)

Q.29 With the help of diagram, explain PIPO shift register. (CO8)