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223831

3rd Sem / Artificial Intelligence & Machine Learning

Subject : Digital Electronics & Microcontrollers

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The number of digits in Hexa decimal system is (CO1)

a) 8 b) 10

c) 16 d) 2

Q.2 The NAND gate is AND gate followed by (CO1)

a) Not Gate b) OR Gate

c) NOR Gate d) EXOR Gate

Q.3 In 8:1 MUX, How many select lines are required. (CO2)

a) 4 b) 3

c) 2 d) 1

Q.4 A Full adder circuit has_____ inputs. (CO3)

a) 2 b) 3

c) 4 d) 8

Q.5 A Flip Flop stores_____ bit of information (CO3)

a) Two b) Three

c) Four d) One

Q.6 8051 is a _____ bit microcontroller. (CO5)

a) 8 b) 16

c) 4 d) 32s

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Write any two advantages of digital signal over analog signal (CO1)

Q.8 Draw the symbol of NOR Gate (CO1)

Q.9 1'S Complement of 1011001 is_____ (CO1)

Q.10 Full form of SIPO_____ (CO3)

Q.11 What is the size of RAM in 8051 microcontroller? (CO5)

Q.12 A K-map of three variables contains _____ cells. (CO2)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Convert $(70)_{10} = (?)_2 = (?)_8$ (CO1)

Q.14 Subtract 1010 from 1100 using one's complement method. (CO1)

Q.15 Explain NAND gate as Universal Gate. (CO1)

Q.16 Explain DeMorgan's Theorem. (CO1)

Q.17 Write a short note on 4:1 MUX. (CO2)

Q.18 Explain Half Adder with diagram. (CO3)

Q.19 Differentiate between asynchronous and synchronous counter. (CO2)

Q.20 Explain JK Flip Flop. (CO3)

Q.21 Draw pin diagram of 8051 microcontroller. (CO5)

Q.22 Write a short note on SFR of 8051 microcontroller. (CO5)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Simplify using k-Map. & realize using NAND Gates only. (CO2)

F(A,B,C,D)=Sm(2,3,4,5,7,11,12,13,15)+d(6,10,14)

Q.24 Explain SISO Shift register in detail with the help of neat diagram. (CO3)

Q.25 Explain the block diagram of 8051 microcontroller. (CO5)