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5th Sem / Elect, GE, Power Station Engg.
Subject:- Digital Electronics and Microprocessors

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The gate whose output is 1 when the two of its inputs are 1 and 0 is

a) AND b) OR
c) NOR d) All of the above

Q.2 A half adder can be constructed using a AND gate and _____ gate

a) NOR b) OR
c) Ex-OR d) NAND

Q.3 Race around condition is exhibited by _____ Flip flop

a) RS b) JK
c) T d) D

Q.4 Combining of 4 elements in a k-map results in reduction of_____ variables from o/p

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

Q.32 Explain different types of semiconductor memories

Q.33 Explain the Flag register of 8085

Q.34 Explain the addressing modes of 8085

Q.35 Explain briefly the 8257 DMA controller

SECTION-D

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

Q.36 With a neat sketch explain the working of R-2R D/A converter

Q.37 Minimize using K-map and implement using NAND gates

$$f(A,B,C,D) = S(0,2,7,8,13,15) + Sd(4,5,10,14)$$

Q.38 Draw the pin diagram of 8085 and explain the role of each pin

Q.5 Clock frequency of 8085 is

a) 1 MHz b) 2 MHz

c) 3 MHz d) 4 MHz

Q.6 A Not gate has _____ inputs

a) 1 b) 2

c) 3 d) 4

Q.7 Binary equivalent of 15 is

a) 1101 b) 1011

c) 1110 d) 1111

Q.8 2's compliment representation of -8 is

a) 00001000 b) 00000111

c) 11110111 d) 11111000

Q.9 Nonmaskable interrupt of 8085 is

a) INTR b) RST 6.5

c) RST 5.5 d) TRAP

Q.10 Interrupt with the lowest priority is

a) INTR b) RST 6.5

c) RST 5.5 d) TRAP

SECTION-B

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

Q.11 Half adder has 3 inputs (True/False)

Q.12 Ex-Or gate is a universal gate(True/False)

Q.13 Draw the symbol of EX-Nor Gate

Q.14 $(1101)_{16} = (?)_{10}$

Q.15 A+1 = A (True/False)

Q.16 $A + \overline{A} = 0$ (True/False)

Q.17 8:1 Mux has_____ Select lines

Q.18 Define wait state

Q.19 8085 is_____ bit mircroprossor

Q.20 Full form of ALE is_____

SECTION-C

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

Q.21 $(235)_8 = (?)_{10} = (?)_{16}$

Q.22 Explain demorgans second theorem

Q.23 Explain the working of 4:1 MUX

Q.24 Explain the working of a Full Adder

Q.25 Differentiate between ecoder and decoder

Q.26 Minimize using Boolean algebra $F(A, B, C) = \overline{A}\overline{B}\overline{C} + \overline{A}B\overline{C} + A\overline{B}C + ABC$

Q.27 Draw the truth table of JK Flip flop

Q.28 Differentiate between SOP and POS

Q.29 Explain 1:4 DEMUX

Q.30 Explain the use of NAND gate as universal gate

Q.31 Explain successive approximation A/D converter