No. of Printed Pages : 4
Roll No. .....

180945/170945

4th Sem. Branch: Electrical Engg.
Sub : Digital Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 What is the radix of Octal Number System?

a) 8 b) 16

c) 2 d) 6

Q.2 Convert $(312)_8$ into decimal Number?

a) $(201)_{10}$ b) $(202)_{10}$

c) $(203)_{10}$ d) $(204)_{10}$

Q.3 The ones complement of 11011 binary is?

a) 00111 b) 11100

c) 00100 d) 11000

Q.4 $a + \bar{a}$ is equal to ?

a) 0 b) 4

c) 3 d) 1

Q.5 A Half adder has :

a) 3 inputs & 2 outputs b) 2 inputs & 2 outputs

c) 1 inputs & 2 outputs d) 2 inputs & 1 outputs

Q.6 What is the standard form of S-R flip flop?

a) Set Reset b) Single reset

c) Simple Reset d) None of the above

Q.7 An inverter output is the complement of its input. (True/False)

Q.8 There are _____ cells in a 4-variable K-map.

a) 12 b) 16

c) 18 d) 8

Q.9 What is a shift register?

a) An adder circuit

b) A memory circuit

c) A combinational circuit

d) A decoder circuit

Q.10 The memory in which the stored data is lost, when power is switched off is?

a) ROM b) RAM

c) PROM d) Ferrite Core Memory

Section-B

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

Q.11 Convert Binary Number 1100110 into Octal number?

Q.12 Draw the standard symbol of R-S flip-flop.

Q.13 Define half adder?

Q.14 Define encoder?

Q.15 Write one the use of multiplexer?

Q.16 Expand LED & LCD.

Q.17 Define T flip flop.

Q.18 What is the use of A/D Converters.

Q.19 Draw the symbols for OR gate with two inputs.

Q.20 Who invented Boolean Algebra?

Section-C

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

Q.21 Explain NAND gate?

Q.22 Explain Full adder with diagram?

Q.23 Convert $(76)_{10}$ to its equivalent Binary and $(11100110.110)_2$ to its equivalent Decimal?

Q.24 Differentiate between RAM & ROM?

Q25 Differentiate synchronous & asychronous counter?

Q.26 State the De Morgan's theorems?

Q.27 Differentiate between Digital & Analog signals.

Q.28 What is meant by K-Map? Also draw two variable K-Map?

Q.29 What are the basic Logic gates? Also draw the symbols of basic logic gates?

Q.30 State the Distributive Law of Boolean Algebra with example?

Q.31 Explain the operation of D flip flop with diagrams?

Q.32 Compare Differentiate between POS & SOP?

Q.33 Draw the truth table of $(x\bar{y}) = \bar{x} + \bar{y}.$

Q.34 Describe the working of serial In and serial out shift register?

Q.35 Differentiate between Combinational Circuits and Sequential Circuits?

Section-D

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

Q.36 Minimize the following expression by using K-map.

$F(A, B, C, D) = Sm(0, 1, 2, 5, 7, 13, 14) + d(3,6,9)$

Q.37 Explain J-K Flip Flop. Discuss any five Applications of the Flip Flops.

Q.38 Explain the followings

i) 2's Complement method

ii) Merits of Semiconductor Memory

`