Q.25 Subtract 0101 from 1101 using 2's complement method of subtraction.

Q.26 Convert $(79)_{10} = (?)_2 = (?)_8 = (?)_{16}$.

Q.27 Explain full adder with circuit diagram.

Q.28 Explain with circuit diagram about 1:8 DEMUX.

Q.29 Explain any decoder with the help of diagram.

Q.30 Explain with diagram D Flip Flop.

Q.31 Explain ring counter with diagram.

Q.32 Explain with diagram about PIPO shift register.

Q.33 What do you mean by odd and even parity. Explain.

Q.34 Differentiate between RAM and ROM.

Q.35 Simplify the Boolean expression: Y = AB + A(B+C) + B (B+C).

SECTION-D

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

Q.36 Simplify using K-Map and realize the logic circuit.

$Y = \Sigma m (0,2,5,11,15) + d(1,3,7)$

Q.37 Explain Master slave J-K flip-flop in detail.

Q.38 Write a short note on :

i) 74181 ALU IC

ii) EPROM

No. of Printed Pages : 4 202445/122445/62445
Roll No. .....

4th Sem / Mechatronics (MSME)
Subject:- Digital Electronics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 A byte is a string of_____bits

a) 2 b) 4

c) 6 d) 8

Q.2 A NAND gate is equivalent to an AND gate followed by_____ gate

a) OR b) NOT

c) NOR d) AND

Q.3 According to Boolean algebra, which of the following is valid?

a) X+X = 1 b) 1.X = X

c) 0.X = X d) X.X = 1

Q.4 A half adder can add _____number of bits

a) 1 b) 3

c) 2 d) 4

Q.5 The number of select lines for 16:1 MUX are_____

a) 1 b) 4

c) 2 d) 3

Q.6 When an inverter is placed between the inputs of SR flip, flop, than resulting flip flop is_____.

a) T flip flop b) D flip flop

c) JK flip flop d) None of these

Q.7 What is the maximum modulus of a counter with four number of flip flop?

a) 4 b) 32

c) 8 d) 16

Q.8 Shift register is a combination of_____

a) Flip Flops b) Encoders

c) Decoders d) Counters

Q.9 A four variable K-Map for SOP has_____cells.

a) 12 b) 32

c) 8 d) 16

Q.10 In octal number system, there are _____digits.

a) 2 b) 16

c) 8 d) 4

SECTION-B

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

Q.11 Ordinary electric's switch s a _____device. (Analog / Digital)

Q.12 One's complement of 11010101 is _____.

Q.13 A full adder is having _____inputs and _____ outputs.

Q.14 A NOR gate is basically a_____ gate followed by _____ gate.

Q.15 ALU stands for _____.

Q.16 A + 1 = _____.

Q.17 SIPO stands for_____.

Q.18 PLA stands for _____.

Q.19 The number of select lines for 1:8 Demux ARE ____.

Q.20 Draw the symbol of EX-NOR gate.

SECTION-C

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

Q.21 Differentiate between Analog signals and Digital signals.

Q.22 Explain NAND gate as universal gate.

Q.23 Explain EXOR gate with truth table.

Q.24 Explain De Morgan's theorems.