Q.25 What do you mean by a number system? How many number systems are used in digital electronics?

Q.26 Explain the term Multiplexer. Design a 2:1 Multiplexer.

Q.27 Design a 4-bit asynchronous Counter.

Q.28 Write the various applications of shift register.

Q.29 Explain Race around Condition.

Q.30 Draw the symbol & Truth table of NOT & OR Gate.

Q.31 Give the various performance characteristics of D/A converter.

Q.32 Explain De code Counter.

Q.33 Write about the truth table, logic diagram of a full adder.

Q.34 Write a short note on logic families.

Q.35 Explain J-K Flip.

SECTION-D

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

Q.36 Why universal shift register are called universal? Explain .

Q.37 Reduce the following function by using k-map

$Y = \prod M (0,2,3,6,7,11,12,15)$

Q.38 Explain BCD to Decimal Decoder.

Roll No. .....

3rd Sem / Instrumentation & Control, EI
Subject:- Fundamentals of 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) Two b) Four

c) Eight d) Ten

Q.2 Which equation shows a SOP expression?

a) A+B (C+D) b) AB+BC+A

c) (A+B+(C+D) d) None

Q.3 What is the base of binary number?

a) $()_{10}$ b) $()_{2}$

c) $()_{8}$ d) $()_{16}$

Q.4 Which of the following combination is not allowed in an SR flip-flop.

a) S=0, R=0 b) S=1, R=0

c) S=0, R=1 d) S=1, R=1

Q.5 Which of the following is used as a data selector

a) Encoder b) Decoder

c) Multiplexer d) De-multiplexer

Q.6 A MUX means

a) many into one device

b) one into many device

c) many into many device

d) none

Q.7 Which material is used in the construction of LED?

a) Silicon b) Germanium

c) Gallium phosphide d) None

Q.8 Give one's complement of 11011.

a) 11100 b) 00100

c) 10101 d) 01011

Q.9 The base of a hexadecimal number system is

a) 14 b) 16

c) 17 d) 15

Q.10 The number of control lines required for a 1:8 MUX will be

a) 1 b) 2

c) 3 d) 4

SECTION-B

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

Q.11 Expand EBCDIC

Q.12 Convert $(11011)_2 = (\ )_{10}$

Q.13 SISO stands for_____

Q.14 A sequential logic circuit has a memory.

Q.15 A seven segment display cannot display any alphabet. (True/False)

Q.16 Define analog signal.

Q.17 Expand LED

Q.18 Full subtractor has _____output.

Q.19 Convert $(100111)_2 = (\ )_8$

Q.20 Find 1's complement of (1101)

SECTION-C

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

Q.21 Differentiate between Analog and Digital.

Q.22 What are weighted & non-weighted codes?

Q.23 State and explain De morgen's theorem.

Q.24 Write the major difference between sequential circuit and combinational circuit?