

Tilak Maharashtra University  
Diploma in Engineering  
SUB: Digital Electronic

Year –SY            Branch- Computer            Semester -3rd

Assignment No: 1

A) Answer any two

1. Write short notes on:
  - a) Alphanumeric codes
  - b) ASCII codes
2. Explain weighted and non- weighted binary codes
3. Convert binary to decimal  $(11001101.01011)_2$
4. Simplify the following using K Map and realize it using logic gates  $Y = \sum m(1,5,7,9,11,13,15)$
5. State and prove De Morgan's theorem

B) Answer any two

1. Simplify the following using Boolean Algebra  $(A+B)(A+B)(\bar{A}+\bar{B})$
2. Define the following:
  - a) Propagation delay
  - b) Noise margin
  - c) Power dissipation
  - d) Fan in and Fan out
3. Compare TTL and ECL
4. How R-S flip flop is constructed using NOR gate. Give its truth table
5. Explain the working of JK flip flop

C) Answer any One

1. Write short note on D flip flop
2. Explain T flip flop.

## Assignment No: 2

### A) Answer any two

1. Explain with neat diagram, the working of the following types of registers.
  - a) SISO
  - b) SIPO
  - c) PISO
  - d) PIPO
2. What is bi-directional shift register? Describe its working principle.
3. Compare synchronous counter and asynchronous counter
4. Explain the working of 4 bit asynchronous down counter
5. Explain the working of Ring counter.

### B) Answer any two.

1. With the help of block diagram explain the working of demultiplexer
2. With the help of block diagram explain the working of multiplexer
3. Draw the logic diagram, truth table and explain the working of 8:1 multiplexer
4. Draw the logic diagram, truth table and explain the working of 1:4 demultiplexer
5. Explain decimal to BCD encoder with the help of neat block diagram.

### C) Answer any one

1. Write a short note on decoders.
2. Define: Encoder & Decoder

Assignment No: 3

A) Answer any two

1. Draw the truth table and circuit diagram of full adder.
2. Draw the truth table and circuit diagram of full subtracter.
3. What is full subtracter?
4. State the application of adder.
5. Explain dual slope A/D converter

B) Answer any two

1. Explain successive approximation method of A/D conversion.
2. Explain working of R - 2R ladder
3. What are the various characteristics of memories
4. Compare ROM, PROM, EPROM, EEPROM
5. Write short note on - Memory

C) Answer any one

1. Define Data converters
2. Write four applications of D/A

