**SWARNANDHRA COLLEGE OF ENGINEERING & TECHNOLOGY**

DEPARTMENT OF MASTER OF COMPUTR APPLICATIONS

**I SEMESTER**

SUBJECT: Digital Logic and Computer System Organization Subject Code: 16MC1T01

Regulation: R16

**UNIT-1**

1. A) Convert the following decimal numbers to the bases indicated:

 i) 7562 to Octal   ii) 1938 to Hexadecimal   iii) 175 to Binary

B) What is r’s Complement and (r-1)’s Complement explain

1. A) Simplify the Boolean functions using four-variable maps
2. F(A,B,C,D) = ∑(4,6,7,15)     ii) F(A,B,C,D) = ∑(3,7,11,13,14,15)

B) What is Flip-Flop?  Explain SR Flip operations

1. A) What is Decoder? Draw 3-to-8 line Decoder circuit diagram

B) Explain floating point representation in detail

1. A) Use DeMorgan’s theorem, show that
2. (A+B)’(A’+B’) = 0      ii) A+A’B+A’B’ = 1

B) What is Don’t –Care Condition?  How do you represent Don’t –Care condition in maps explain

5.  What is Flip Flop?  Explain different Flip-Flops

6.  Draw 3-8 line decoder using two 2-4 decoders

7.  Draw Bidirectional Shift register with Parallel load

8.  Explain 4-bit synchronous counter

**UNIT-2**

1. What are Combinational Circuits?  Explain Half-Adder and Full-Adder with logic diagrams and Truth tables
2. Explain Register Transfer in detail with block diagram and timing diagram
3. How the data is transferred from one register to register using tri state b

4.   A) What is direct and Indirect Addressing

      B) Explain Stored Program Concept in detail

5. Develop the block diagram for 4- bit  Arithmetic circuit and explain in detail

6. What are different Logic Micro operations explain

7. Draw 4-bit combinational shift circuit

**UNIT-3**

1. Describe the following terms: Micoroperation, Microinstruction, Microprogram
2. Draw and explain the organization of Micorprogrammed Control Unit
3. Explain the Steps of Addressing Sequential in detail
4. Draw the explain the selection of address for Control Memory
5. Draw the hardware configuration of Computer
6. With example explain Micro instruction format
7. Explain three, two, one, zero address format

**UNIT-4**

1. Give the Hardware implementation for Signed Addition and Subtraction
2. Draw the flowchart for addition and subtraction
3. Give the Hardware implementation for Signed 2’s complement Addition and Subtraction
4. Draw the flowchart for Multiplication
5. Explain Booths multiplication algorithm
6. Explain Array multiplier
7. Give the Hardware implementation for Signed division

**UNIT-5**

1. What is I/O interface?  How do you connect I/O devices using Interface
2. Explain Asynchronous data transfer
3. Draw the typical block diagram for Asynchronous data transfer
4. What are different modes of data transfer?  Explain
5. Explain Daisy-chain priority interrupt
6. Give the importance of Priority Interrupt
7. With diagram how data is transferred using DMA
8. Draw the diagram for memory to cpu connection
9. Give the importance of Cache memory