Computer Department

Name of Programme: - CO

Name of Course: - Digital Technics (SEM-III)

Course Outcome. – **Use number system and codes for interpreting working of digital system.**

Assignment –I

1 Convert $(1101011)_2 = (\ )_{16}$ and $(1111011)_2 = (\ )_8$

2. Convert $(43)_{10} = (BCD)$, $(34)_{10} = (Excess\text{-}3)$, $(110111)_2 = (Gray)$, $(11101)_2 = (2's\ complement)$

3. Subtract following using Two's complement method. $(15)_{10} – (32)_{10}$

4. List the binary, octal and hexadecimal numbers for decimal no. 0 to 15.

5. Write the gray code to given no. $(1101)_2 = (?)$ Gray.

6. Convert: (i) $(AD92.BC\ A)_{16} = (?)_{10} = (?)_8 = (?)_2$

7. Subtract the given number using 2's complement method:

 (i) $(11011)_2 – (11100)_2$

 (ii) $(1010)_2 – (101)_2$

8. Write the radix of binary, octal, decimal and hexadecimal number system.

9. Convert - (i) $(255)_{10} = (\ ?\ )_{16} = (\ ?\ )_8$ (ii) $(157)_{10} = (\ ?\ )BCD = (?\ )$ Excess3

10. Subtract using 2's compliment method $(35)_{10} – (5)_{10}$

11. Convert $(D8F)_{16}$ into binary and octal.

12. Perform the subtraction using 2'S Complement methods. $(52)_{10} – (65)_{10}$

13. (i) Convert the following binary number $(11001101)_2$ into Gray Code and Excess-3 Code.

(ii) Perform the BCD Addition. $(17)_{10} + (57)_{10}$

(iii) Perform the binary addition. $(10110 \cdot 110)_2 + (1001 \cdot 10)_2$

Name of course coordinator: - Mrs. Smita Bari

Computer Engineering Department

Name of Programme: - CO

Name of Course: - Digital Technics (SEM-III)

Course Outcome. – Use Boolean expressions to realize logic circuits.

Assignment –II

1. Define fan-in and fan-out of a gate
2. Draw the logical symbol of EX-OR and EX-NOR gate
3. Draw the symbol, truth table and logic expression of any one universal logic gate. Write reason why it is called universal gate
4. Compare TTL and CMOS logic families on the basis of following: (i) Propagation delay (ii) Power Dissipation (iii) Fan-out (iv) Basic gate
5. Realize the basic logic gates, NOT, OR and AND gates using NOR gates only
6. State De Morgan's theorem and prove any one.
7. Explain the flowing characteristics w.r.t logic families: (i) Noise margin (ii) Power dissipation (iii) Figure of merit (iv) Speed of operation
8. Draw Symbol, Truth Table and logic equation of Ex-OR gate.
9. Draw the circuit and explain the principle of TTL gate with totempole output

Name of course coordinator: - Mrs. Smita Ba

Computer Department

Name of Programme: - CO

Name of Course: - Digital Technics (SEM-III)

Course Outcome. – Build simple sequential circuits

Assignment –III

1 Design Mod-7 counter using this IC.

2. Draw and explain working of 4 bit serial Input parallel Output shift register.

3 Describe the working of JK flip-flop with its truth table and logic diagram .

4. Describe the operation of R-S flip flop using NAND gates only.

Name of course coordinator: - Mrs. Smita Bari