Model question:

1. Why digital system are preferred than analog system in today’s world. Excess 3 codes are also called self complementing code, justify this statement. 10
2. Simplify the Boolean function F and don’t care condition D in SOP form and POS form and realize using: a)NAND gate only b) NOR gate only

F(A,B,C,D) = ∑(1,3,7,10,13,15) D=∑(0,2,8) 10

1. Design an full adder circuit using decoder. Assuming the last 3 digit of your PU registration number as X(decimal ) number, convert it into binary number and hexadecimal number. 10
2. Design a two bit magnitude comparator whose outputs are A>B, A<B and A=B. Explain the purpose of using master slave flip-flop. 10
3. Assuming the last digit of your exam symbol number as X(if x<3, assume X= X+3). Design a MOD X counter using S-R flip-flop. 10
4. Explain the process how does binary values of 4 flags in status register changes with necessary diagram. Design a sequential circuit using J-k flip-flop by considering the two variable state diagrams. 20