Department of Computer Science & Engineering
Class Assessment
Marks – 10

Set – 1

1. An 8X1 multiplexer has inputs A, B and C connected to the selection inputs s_2, s_1 and s_0 respectively. The data inputs, I_0 through I_7, are as follows: $I_1 = I_2 = I_7 = 0$; $I_3 = I_5 = 1$; $I_0 = I_4 = D$ and $I_6 = D'$. Determine the Boolean function that the multiplexer implements.	5
2. Design an 8X1 multiplexer using two 2X4 decoders and external gates.	5

Set – 2

1. Implement a full-adder with two 4X1multiplexers.	5
2. Design a 4X2 priority encoder with the input priority as follows: $D_0 > D_1 > D_2 > D_3$ i.e. input D_0 has the highest priority and D_3 the lowest priority.	5

Set – 3

1. Construct a 16X1 multiplexer with two 8X1 and one 2X1 multiplexers.	5
2. Design a circuit that converts a 4-bit binary number to equivalent octal number.	5

Set – 4

1. Implement the following Boolean function with an 8X1multiplexer. $F(A, B, C, D) = \Sigma(0, 3, 5, 6, 8, 9, 12, 15)$	5
2. Construct a BCD to excess-3 code converter using a 4X16 decoder and external gates.	5