SVKM'S NMIMS STME, Navi-Mumbai Campus
B Tech Sem II
Graded Assignment–5

Course:B Tech	SEM: II
Subject: Principles of Electronics Engg	Marks: 5
Last day of submission: 30th March	

Instruction to students: Send completed and scanned assignment to `toral.shah@nmims.edu` with subject line **PEE_GA5_name_rollno**. Q4 is optional.

Q1. Construct a 16:1 multiplexer with two 8:1 and one 2:1 multiplexers. Use block diagrams.

Q2. Implement the following Boolean function with a multiplexer (of your choice). Draw only block diagrams:

(a) $F_1(A, B, C, D) = \Sigma m(0, 2, 5, 8, 10, 14)$

(b) $F_2(A, B, C, D) = \Pi M(2, 6, 11)$

Hint: Maxterms are ones which give output zero

Q3. Implement a full adder with two 4:1 multiplexers. Hint: Implement Sum with one 4:1 mux and $carry$ with another 4:1 mux

Q4.(Optional) An 8×1 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:

1. $I_1 = I_2 = I_7 = 0; I_3 = I_5 = 1; I_0 = I_4 = D$; and $I_6 = \overline{D}$.
2. $I_1 = I_2 = 0; I_3 = I_7 = 1; I_5 = I_4 = D$; and $I_0 = I_6 = \overline{D}$.

Determine the Boolean function that the multiplexer implements.