

**COE 202, Term 121**

**Digital Logic Design**

**Assignment# 1**

**Due date: Sat. Nov. 10**

- Q.1.** You are required to design a circuit that receives a 4-input number  $X$  and produces an output that computes the equation  $Y=3*X+2$ .
- (i) Show the truth table for the circuit to be designed.
  - (ii) Derive minimum sum of product expressions for the circuit outputs.
  - (iii) Implement your circuit using logic works.
  - (iv) Demonstrate the correctness of your circuit for the following inputs: 0, 3, 7, 10, 15. Include simulation snapshots.