

### *Set for Team 121*

**Construct the necessary truth table(s), Boolean functions and Simulation file with the appropriate IC diagram comprising the basic logic gates that represent the following scenario:**

Suppose you have gone to a fruit market and wish to buy some fruits that meet your budget. According to your budget you can either pick bananas, **AND** apples, **OR** apples **AND** grapes, **OR** bananas, grapes **AND** mangoes. If the possibility of buying/not-buying of the fruit items can be represented as 0/1 Boolean values, construct a truth table that represents the aforementioned scenario with an output **Y** which indicates those combination of fruit items that you can afford to buy. After that, bring a combinational function from the truth table. (N.B. Do not bother about the quantity of any item)