

- Marks are shown in brackets [].
- You are expected to EXPLAIN YOUR WORKING and SHOW ALL CALCULATIONS.

Name: _____ Student ID: _____ Time: 25 Minutes

1. [20] Answer **True** or **False** for each of the following statements about LP problems and justify your answer. Use examples.
 - a) Although any CPF (corner point feasible) solution can be chosen to be the initial CPF solution, the simplex method always chooses the origin.
 - b) An LP problem cannot handle variables that could be negative.
 - c) If there is no leaving variable in a column selected for an entering basic variable, then the objective function is unbounded.
 - d) If the final tableau of the simplex method applied to LP has a nonbasic variable with a coefficient of 0 in row 0, then the problem has multiple solutions.
 - e) If two variables are tied for the largest negative value in the objective row and we pick one arbitrarily as the new basic variable, the other variable is called a degenerate nonbasic variable.