1. The best use of a linear programming technique is to find an optimal use of
2. Money
3. Manpower
4. Machine
5. **All of the above**
6. Non-negativity condition is an important component of LP model because
7. Variables value should remain under the control of the decision-maker
8. **Value of variables make sense and correspond to real-world problems**
9. Variables are interrelated in terms of limited resources
10. None of the above
11. A feasible solution to an LP problem
12. **Must satisfy all of the problem’s constraint simultaneously**
13. Need not satisfy all of the constraints
14. Must be a corner point of the feasible region
15. Must optimize the value of the objective function
16. While solving a LP model graphically, the area bounded by the constraints is called
17. Unbounded solution
18. Infeasible region
19. **Feasible region**
20. None of the above
21. If an optimal solution is degenerate, then
22. There are alternative optimal solutions
23. The solution is infeasible
24. The solution is of no use to the decision-maker
25. **One of the basic variable becomes zero**
26. For a maximization problem, the objective function coefficient for an artificial variable is
27. +M
28. **–M**
29. Zero
30. None of the above
31. If a negative value appears in the solution values (xb) column of the simplex table, then
32. The solution is optimal
33. The solution is unbounded
34. **The solution is infeasible**
35. There exist an alternate solution
36. If an artificial variable is present in the “basic variable” column of optimal simplex table, then the solution is
37. **Infeasible**
38. Unbounded
39. Degenerate
40. Optimal
41. A variable which does not appear in the basic variable column (b) of simplex table is
42. Never equal to zero
43. **Always equal to zero**
44. Called a basic variable
45. Called a decision variable
46. At every iteration of a simplex method, for minimization problem, a variable in the current basis is replaced with another variable that has
47. A positive Cj – Zj value
48. **A negative Cj – Zj value**
49. Cj – Zj value is zero
50. Zj≤ 0
51. The maximization or minimization of a quantity is the
    1. Goal of management science
    2. Decision for decision analysis
    3. Constraint of operations research
    4. **Objective of linear programming**

1. Decision variables
   1. **Tell how much or how many of something to produce, invest, purchase, hire, etc**
   2. Represent the values of the constraints
   3. Measure the objective function
   4. Must exist for each constraint
2. Infeasibility means that the number of solutions to the linear programming models that satisfies all constraints is
   1. At least 1
   2. **0**
   3. An infinite number
   4. At least 2
3. Which of the following is not a characteristic of the LP model?
   1. Alternative courses of action
   2. Limited amount of resourses
   3. **An objective function of maximization type**
   4. Non-negativity condition on the value of decision variables
4. Constraint in an LP model restricts
   1. Value of the objective functions
   2. Value of the decision variables
   3. Use of the available resources
   4. **All of the above**
5. In graphical method, a constraint of x1 ≤ 50 would have the curve
6. Parallel to X-axis
7. **Parallel to Y-axis**
8. Slope of 450
9. Passing through the origin
10. If two constraints do not intersect in the positive quadrant of the graph then
    1. **The problem is infeasible.**
    2. The solution is unbounded.
    3. One of the constraints is redundant.
    4. None of the above
11. If for a given solution a slack variable is equal to zero then
    1. The solution is optimal
    2. **The solution is infeasible**
    3. The entire amount of resource with the constraint in which the slack variable appears has been consumed
    4. None of the above

## Which method usually gives a very good solution to the assignment problem?

## Northwest corner rule

## Northwest corner rule

## MODI method

## None of the above

## Dual problem statement is formulated with help of information available in another statement called

* 1. **Primal problem**
  2. Prime problem
  3. Optimal problem
  4. Primal constant

1. If the dual (maximization) LP is feasible and unbounded then the primal (minimization) LP is
   1. nonsingular
   2. **infeasible**
   3. bounded
   4. zero
2. In linear programming, non negativity implies that a variable cannot have:
   1. a negative coefficient in the objective function
   2. a negative coefficient in a constraint equation
   3. a negative coefficient in a constraint inequality
   4. **a negative value**
3. While plotting constraints on a graph paper terminal points on both the axes are connected by a straight line because
   1. the resources are limited in supply
   2. the objective function is a linear function.
   3. **the constraints are linear equation or inequalities.**
   4. all of the above
4. Variable in dual problem which can assume negative values, positive values or zero values is classified as
5. unrestricted constant
6. restricted constant
7. restricted variable
8. **unrestricted variable**
9. According to algebra of simplex method, slack variables are assigned zero coefficients because
10. **no contribution in objective function**
11. high contribution in objective function
12. divisor contribution in objective function
13. base contribution in objective function
14. From the following methods \_\_\_\_\_\_\_\_\_\_\_ is a method to obtain initial solution to Transportation Problem.
    1. North-West
    2. Simplex
    3. **Hungarian**
    4. Newton Raphson
15. The Penalty in VAM represents difference between \_\_\_\_\_\_\_\_\_ cost of respective row / column.
    1. Two Largest
    2. smallest two
    3. largest and smallest
    4. none of the above
16. If number of sources is not equal to number of destination in Assignment problem then it is called \_\_\_\_\_\_\_\_\_\_\_.
    1. **unbalanced**
    2. symmetric
    3. unsymmetric
    4. balanced
17. The purpose of a dummy row or column in an assignment problem is to
    1. obtain balance between total activities and total resources
    2. prevent a solution from becoming degenerate
    3. provide a means of representing a dummy problem
    4. none of the above
18. If primal contains ‘m’ variables and ‘n’ constraints, the dual contains variables \_\_\_\_\_\_\_\_
19. m
20. **n**
21. m + n
22. mn