

Q 1 Which of the following statement is true for LPP-feasible solution,

- a) The solution must satisfy all constraints
- b) It must be a corner point
- c) It must be an optimal solution
- d) It must be a boundary point

% Ans Option: A

Q 2 A tie in the leaving variable in simplex algorithm, led to which of the following case:

- a) Unbounded solution
- b) Non-degenerate feasible solution
- c) Degenerate feasible solution
- d) Alternate optimal solution

% Ans Option: C

Q 3 If one of the tables while applying simplex method is given below

B.V.	X_1	X_2	S_1	S_2	Solution
$Z_j - C_j$	0	-3	2	0	20
X_1	1	-1	1	0	10
S_2	0	1	-2	1	20

where s_1, s_2 are slack variables. Then the objective function of the problem will be

- a) $\text{Max } Z = 2x_1 + x_2$
- b) $\text{Max } Z = x_1 + 2x_2$
- c) $\text{Max } Z = x_1 + x_2$
- d) $\text{Max } Z = -2x_1 - x_2$

% Ans Option: D

Q 4 An addition of new constraint in an LPP may disturb _____ in the **current** optimal table.

- a) Feasibility only
- b) Optimality only
- c) Both feasibility and optimality
- d) **None of these**

% Ans Option: A

Q 5. An optimal table of the LPP: $\text{Max } 2x_1 + x_2 - x_3$

subject to $x_1 + 2x_2 + x_3 + x_4 = 8$
 $-x_1 + x_2 - 2x_3 + x_5 = 4,$ $x_1, x_2, x_3, x_4, x_5 \geq 0$

is given below

C_B	B.V.	X_1	X_2	X_3	X_4	X_5	Solution
	Z	0	3	3	2	0	16
2	X_1	1	2	1	1	0	8
0	X_5	0	3	-1	-1	1	12

Find the value of objective function if a new variable x_6 is introduced with $c_6=2$, and $A_6 = (2,4)$ in the LPP.

- a) 8
- b) 12
- c) 16
- d) 18

% Ans Option: C

- Q 6. In the optimal simplex method, if the net evaluation (or relative evaluation) of a non-basic variable is zero then which of the following conclusion is most appropriate:
- a) This indicates the LPP must have an alternate solution.
 - b) This indicates the LPP may have an alternate solution.
 - c) This indicates the LPP must have an unbounded solution.
 - d) This indicates the LPP may have an unbounded solution

% Ans Option: B

- Q 7. Which one of the following is not correct.

- (a) Every optimal solution is feasible solution.
- (b) Optimal solution may occur at boundary points.
- (c) Artificial variable appearing in the basis (or optimal table) always lead to the conclusion that LPP has infeasible solution.
- (d) Dual Simplex method conclude: either a LPP has optimal solution or Infeasible Solution, but not unbounded solution.

% Ans Option: C, if artificial variable is zero then it is feasible solution.