Q1

Q For any LPP with feasible region described by the equations

$$2x_1 + x_2 \leq 6$$
$$x_1 + x_2 \leq 4$$
$$x_1, x_2 \geq 0$$

If the optimal solution lies at (3,0) then,

Correct Answer : Option 2 (lies on the w1 axis)

Q2 :

Q The number of iterations taken by dual simplex method to find the optimal solution to

$$\min 2x_1 + x_2$$
$$\text{s.t. } 3x_1 + x_2 \geq 6$$
$$x_1 + x_2 \geq 4$$
$$x_1, x_2 \geq 0$$

are :

Correct Answer : Option 4 (2 iterations)

Q3 :

Q For the two statements A and B given as

(A) Primal has an optimal solution iff dual has an optimal solution.

(B) Duality is a symettric relation, i.e. dual of dual is primal.

Correct Answer : Option 1 (Both A and B are correct)

Q4 :

Q. For the LPP described by the equations

$$\max 12x_1 + 12x_2$$
$$\text{s.t. } 3x_1 + 4x_2 \leq 12$$
$$4x_1 + 3x_2 \leq 12$$
$$x_1, x_2 \geq 0$$

Correct Anwser : Option 1 (Both the LPP and its dual attain optimality at the same point)

Q5 :

Q. For the LPP described by the set of equations

$$\max 5x_1 + 3x_2$$
$$2x_1 + x_2 \geq 6$$
$$3x_1 + 4x_2 \leq 12$$
$$x_1, x_2 \geq 0$$

The optimal solution for the dual

Correct Answer : Option 2 (lies in the second Quadrant)

Q6 :

Q. The optimal solution to the LPP

$$\max 2x + 7y$$
$$\text{s.t. } 2x + y \geq 4$$
$$2x + 3y \leq 6$$
$$x, y \geq 0$$

Correct Answer : Option 1 (does not change if 2x-2y=1 is introduced as an additional constraint