Q1

The Gomory Cut Constraint Introduced to solve an IPP

Correct Answer : Option 4 (Cuts off the optimal solution obtained in the previous iteration)

Q2 : If the variables are constrained to be integer then

The IPP described by the equations

$$\max \ 2x + y$$
$$\text{s.t. } -2x + 3y \geq 2$$
$$3x + 4y \leq 9$$
$$x, y \geq 0$$

Correct Answer : Option 3 (has a unique optimal solution)

Q3 :

The optimal solution to the IPP

$$\min \ 4x_1 + 3x_2$$
$$\text{s.t. } x_1 \leq 4$$
$$x_2 \leq 6$$
$$5x_1 + 3x_2 \geq 30$$
$$x_1, x_2 \geq 0, \text{ integers}$$

Correct Answer : Option 2 (exists and the optimal value is 27)

Q4

For the two statements A and B given as

(A) An LPP has an optimal solution iff the LPP with additional integer constraints has an optimal solution

(B) The time complexity of Gomory Cut Constraint method is exponential (in the worst case).

Correct Answer : Option 3 (A is incorrect but B is correct)

Q5

The optimal solution to the LPP

$$\max \; x_1 + x_2$$
$$\text{s.t.} \; 3x_1 + 2x_2 \leq 12$$
$$x_2 \leq 2$$
$$x_1, x_2 \geq 0, \text{ integers}$$

Correct Answer : Option 4 (none of the above)