

Class 12 Maths Chapter 12 Linear Programming MCQs For Practice

1. The corner points of the feasible region determined by the system of linear constraints are $(0, 0)$, $(0, 40)$, $(20, 40)$, $(60, 20)$, $(60, 0)$. The objective function is $Z = 4x + 3y$. Compare the quantity in Column A and Column B

Column A	Column B
Maximum of Z	325

- (a) The quantity in column A is greater
- (b) The quantity in column B is greater
- (c) The two quantities are equal
- (d) The relationship cannot be determined.

2. The corner points of the feasible region for an LPP are $(0, 2)$, $(3, 0)$, $(6, 0)$, $(6, 8)$ and $(0, 5)$. Let $F = 4x + 6y$ be the objective function. The minimum value of F occurs at

- (a) $(0, 2)$ only
- (b) $(3, 0)$ only
- (c) the mid-point of the line segment joining the points $(0, 2)$ and $(3, 0)$ only
- (d) any point on the line segment joining the points $(0, 2)$ and $(3, 0)$

3. The corner points of the feasible region determined by the system of linear constraints are $(0, 3)$, $(1, 1)$ and $(3, 0)$. Let $Z = px + qy$, where $p, q > 0$. Condition on p and q so that the minimum of Z occurs at $(3, 0)$ and $(1, 1)$ is

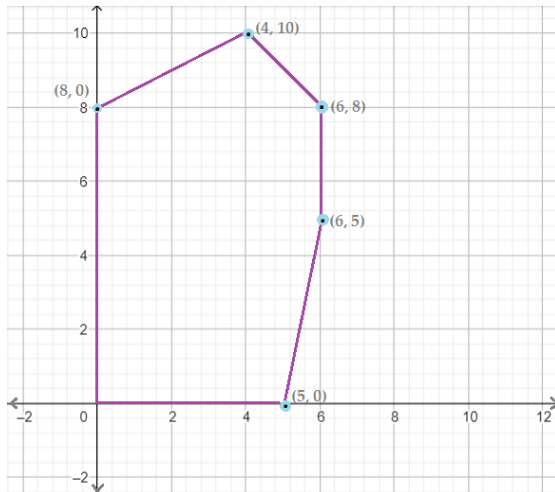
- (a) $p = 2q$
- (b) $p = q/2$
- (c) $p = 3q$
- (d) $p = q$

4. In an LPP, if the objective function $Z = ax + by$ has the same maximum value on two corner points of the feasible region, then the number of points of which Z_{\max} occurs is

- (a) 0
- (b) 2
- (c) finite
- (d) infinite

5. The feasible region for an LPP is shown below:

Let $Z = 3x - 4y$ be the objective function. Minimum of Z occurs at



- (a) (0, 0)
- (b) (0, 8)
- (c) (5, 0)
- (d) (4, 10)

6. The optimal value of the objective function is attained at the points

- (a) given by the intersection of inequation with y-axis only
- (b) given by the intersection of inequation with x-axis only
- (c) given by the corner points of the feasible region
- (d) none of the given

7. The feasible region for an LPP is always a _____ polygon.

- (a) Convex
- (b) Concave
- (c) bounded
- (d) could be any

8. The feasible region represented by $x + y \geq 1$, $x \geq 0$ and $y \geq 0$ is

- (a) bounded region
- (b) is a polygon
- (c) unbounded
- (d) none of the above

9. The corner points of the feasible region determined by the system of linear constraints are $(0, 0)$, $(0, 8)$, $(4, 10)$, $(6, 8)$, $(5, 0)$ and $(6, 5)$. Let $Z = 3x - 4y$ be the objective function. Then maximum Z occurs at

- (a) $(5, 0)$
- (b) $(6, 5)$
- (c) $(6, 8)$
- (d) $(4, 10)$

10. The corner points of the feasible region for an LPP are $(0, 2)$, $(3, 0)$, $(6, 0)$, $(6, 8)$ and $(0, 5)$. Let $F = 4x + 6y$ be the objective function. Then Maximum of F - Minimum of $F =$

- (a) 60
- (b) 48
- (c) 42
- (d) 18

* * * * * ANSWER KEYS * * * * *

Q.1 - (b)	Q.2 - (d)	Q.3 - (b)	Q.4. - (d)	Q.5 - (b)
Q.6 - (c)	Q.7 - (a)	Q.8 - (c)	Q.9 - (a)	Q.10 - (a)