Quiz Date: 20th August 2020

Directions (1-15) : In each of the these questions, two equation (I) and (II) are given. You have to solve both the equations and give answer

Q1.
I. $p^2 + 5p + 6 = 0$
II. $q^2 + 3q + 2 = 0$

(a) if p is greater than q.
(b) if p is smaller than q.
(c) if p is equal to q.
(d) if p is either equal to or greater than q.
(e) if p is either equal to or smaller than q.

Q2.
I. $p^2 = 4$
II. $q^2 + 4q = -4$

(a) if p is greater than q.
(b) if p is smaller than q.
(c) if p is equal to q.
(d) if p is either equal to or greater than q.
(e) if p is either equal to or smaller than q.

Q3.
I. $p^2 + p = 56$
II. $q^2 - 17q + 72 = 0$

(a) if p is greater than q.
(b) if p is smaller than q.
(c) if p is equal to q.
(d) if p is either equal to or greater than q.
(e) if p is either equal to or smaller than q.

Q4.
I. $3p + 2q - 58 = 0$
II. $q + p = 23$

(a) if p is greater than q.
(b) if p is smaller than q.
(c) if p is equal to q.
(d) if p is either equal to or greater than q.
(e) if p is either equal to or smaller than q.

Q5.
I. $3p^2 + 17p + 10 = 0$
II. $10q^2 + 9q + 2 = 0$

(a) if p is greater than q.

(b) if p is smaller than q.
(c) if p is equal to q.
(d) if p is either equal to or greater than q.
(e) if p is either equal to or smaller than q.

I. $6x^2 + 77x + 121 = 0$
II. $y^2 + 9y - 22 = 0$

Q6.
(a) if x < y
(b) if x > y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or no relationship can be established between x and y

I. $x = \sqrt{625}$
II. $y = \sqrt{676}$

Q7.
(a) if x < y
(b) if x > y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or no relationship can be established between x and y

I. $x^2 + 4x + 4 = 0$
II. $y^2 - 8y + 16 = 0$

Q8.
(a) if x < y
(b) if x > y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or no relationship can be established between x and y

I. $x^2 - (16)^2 = (23)^2 - 56$
II. $y^{1/3} - 55 + 376 = (18)^2$

Q9.
(a) if x < y
(b) if x > y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or no relationship can be established between x and y

I. $x^2 - 19x + 84 = 0$
II. $y^2 - 25y + 156 = 0$

Q10.

(a) if x < y
(b) if x > y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or no relationship can be established between x and y

Q11.

I. $4x + 7y = 209$
II. $12x - 14y = -38$

(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q12.

I. $17x^2 + 48x = 9$
II. $13y^2 = 32y - 12$

(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q13.

I. $16x^2 + 20x + 6 = 0$
II. $10y^2 + 38y + 24 = 0$

(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q14.

I. $8x^2 + 6x = 5$
II. $12y^2 - 22y + 8 = 0$

(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

I. $18x^2 + 18x + 4 = 0$

II. $12y^2 + 29y + 14 = 0$

Q15.

(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Solutions

S1. Ans.(e)

Sol.

I. $p^2 + 5p + 6 = 0$
$\Rightarrow (p + 2)(p + 3) = 0$
$\Rightarrow p = -2, -3$
II. $q^2 + 3q + 2 = 0$
$\Rightarrow (q + 1)(q + 2) = 0$
$\Rightarrow q = -1, -2$
$\Rightarrow p \leq q$

S2. Ans.(d)

Sol.

I. $p^2 = 4$
$\Rightarrow p = 2, -2$
II. $q^2 + 4q + 4 = 0$
$\Rightarrow (q + 2)(q + 2) = 0$
$\Rightarrow q = -2, -2$
$\Rightarrow p \geq q$

S3. Ans.(b)

Sol.

I. $p^2 + p - 56 = 0$
$\Rightarrow (p + 8)(p - 7) = 0$
$\Rightarrow p = -8, 7$
II. $q^2 - 17q + 72 = 0$
$\Rightarrow (q - 9)(q - 8) = 0$
$\Rightarrow q = 8, 9$
$\Rightarrow p < q$

S4. Ans.(a)

Sol.

I. $3p + 2q = 58$ & II. $p + q = 23$

Solving I & II we get

$P = 12, q = 11$

$\Rightarrow p > q$

S5. Ans.(b)

Sol.

I. $3p^2 + 17p + 10 = 0$

$\Rightarrow 3p^2 + 15p + 2p + 10 = 0$

$\Rightarrow (p + 5)(3p + 2) = 0$

$\Rightarrow p = -5, -\frac{2}{3}$

II. $10q^2 + 9q + 2 = 0$

$\Rightarrow 10q^2 + 5q + 4q + 2 = 0$

$\Rightarrow (2q + 1)(5q + 2) = 0$

$\Rightarrow q = -\frac{1}{2}, -\frac{2}{5}$

$\Rightarrow p < q$

S6. Ans.(e)

Sol.

I. $6x^2 + 77x + 121 = 0$

$or, 6x^2 + 66x + 11x + 121 = 0$

$or, 6x(x + 11) + 11(x + 11) = 0$

$or, (6x + 11)(x + 11) = 0$

$or, x = -\frac{11}{6}, -11$

II. $y^2 + 9y - 22 = 0$

$or, y^2 + 11y - 2y - 22 = 0$

$or, y(y + 11) - 2(y + 11)$

$or, (y - 2)(y + 11) = 0$

$or, y = 2, -11$

Hence, no relationship can be established between x and y.

S7. Ans.(a)

Sol.

I. $x = \sqrt{625} = +25$
II. $y = \sqrt{676} = +26$
So, $y > x$

S8. Ans.(a)

Sol.
I. $x^2 + 4x + 4 = 0$
$(x + 2)^2 = 0 \Rightarrow x = -2$
II. $y^2 - 8y + 16 = 0$
$\Rightarrow (y - 4)^2 = 0 \Rightarrow y = 4$
$\therefore y > x$

S9. Ans.(d)

Sol.
I. $x^2 - (16)^2 = (23)^2 - 56$
or $x^2 - 256 = 529 - 56$
$\therefore x = \sqrt{729} = \pm 27$
II. $y^{1/3} - 55 + 376 = (18)^2$
or $y^{1/3} = 324 + 55 - 376$
$\therefore y = (3)^3 = 27$
$\therefore y \geq x$

S10. Ans.(d)

Sol.
I. $x^2 - 19x + 84 = 0$
$x^2 - 7x - 12x + 84 = 0$
$(x - 7)(x - 12) = 0$
$\therefore x = 7, 12$
II. $y^2 - 25y + 156 = 0$
$y^2 - 13y - 12y + 156 = 0$
$(y - 13)(y - 12) = 0$
$\Rightarrow y = 13, 12$
$\therefore x \leq y$

S11. Ans.(e)

Sol.

I. $4x + 7y = 209$

II. $12x - 14y = -38$

or $6x - 7y = -19$

Adding I and II we get

$10x = 190$

$\Rightarrow x = 19$

$\therefore 7y = 114 + 19$

$\Rightarrow y = 19$

$x = y$

S12. Ans.(a)

Sol.

I. $17x^2 + 48x = 9$

$\Rightarrow 17x^2 + 48x - 9 = 0$

$\Rightarrow 17x^2 + 51x - 3x - 9 = 0$

$\Rightarrow (x + 3)(17x - 3) = 0$

$\Rightarrow x = -3, \frac{3}{17}$

II. $13y^2 - 32y + 12 = 0$

$\Rightarrow 13y^2 - 26y - 6y + 12 = 0$

$\Rightarrow (y - 2)(13y - 6) = 0$

$\Rightarrow y = 2, \frac{6}{13}$

$y > x$

S13. Ans.(b)

Sol.

I. $8x^2 + 10x + 3 = 0$

$\Rightarrow 8x^2 + 4x + 6x + 3 = 0$

$\Rightarrow (2x + 1)(4x + 3) = 0$

$\Rightarrow x = -\frac{1}{2}, -\frac{3}{4}$

II. $5y^2 + 19y + 12 = 0$

$\Rightarrow 5y^2 + 15y + 4y + 12 = 0$

$\Rightarrow (y + 3)(5y + 4) = 0$

$\Rightarrow (y + 3)(5y + 4) = 0$

$\Rightarrow y = -3, -\frac{4}{5}$

$x > y$

S14. Ans.(c)

Sol.

I. $8x^2 + 6x - 5 = 0$

$\Rightarrow 8x^2 - 4x + 10x - 5 = 0$

$\Rightarrow (2x - 1)(4x + 5) = 0$

$\Rightarrow x = \frac{1}{2}, -\frac{5}{4}$

II. $6y^2 - 11y + 4 = 0$

$\Rightarrow 6y^2 - 3y - 8y + 4 = 0$

$\Rightarrow (2y - 1)(3y - 4) = 0$

$\Rightarrow y = \frac{1}{2}, \frac{4}{3}$

$y \geq x$

S15. Ans.(d)

Sol.

I. $9x^2 + 9x + 2 = 0$

$\Rightarrow 9x^2 + 3x + 6x + 2 = 0$

$\Rightarrow (3x + 1)(3x + 2) = 0$

$\Rightarrow x = -\frac{1}{3}, -\frac{2}{3}$

II. $12y^2 + 29y + 14 = 0$

$\Rightarrow 12y^2 + 21y + 8y + 14 = 0$

$\Rightarrow (4y + 7)(3y + 2) = 0$

$\Rightarrow y = -\frac{7}{4}, -\frac{2}{3}$

$x \geq y$