Quiz Date: 10th September 2020

Directions (1-10): In each of these questions two equations are given. You have to solve these equations and give answer.

Q1.
I. $x(x+7) = 30$
II. $y = \left(\frac{100}{9}\right)^{\frac{1}{2}}$
(a) if x < y
(b) if x > y
(c) if x = y
(d) if x ≥ y
(e) if x ≤ y

Q2.
I. $3x^2 - 16x + 21 = 0$
II. $6y^2 + 25y + 21 = 0$
(a) if x < y
(b) if x > y
(c) if x = y
(d) if x ≥ y
(e) if x ≤ y

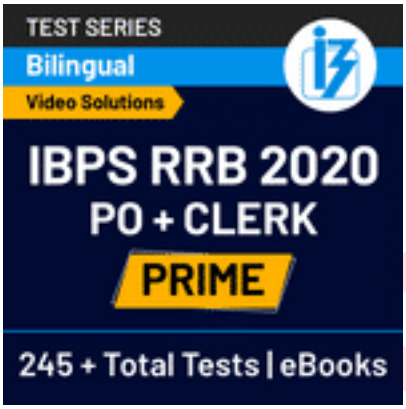
Q3.
I. $2x^5(x^{-2}) = 128$
II. $\frac{1}{3}y^9 = \frac{1}{24}y^{11}$
(a) if x < y
(b) if x > y
(c) if x = y
(d) if x ≥ y
(e) if x ≤ y

Q4.
I. $20x^2 - 108x + 144 = 0$
II. $25y^2 - 90y + 72 = 0$
(a) if x < y
(b) if x > y
(c) if x = y
(d) if x ≥ y
(e) if x ≤ y

Q5.
I. $2x^2 + 18x + 36 = 0$
II. $y^2 - 3y - 18 = 0$
(a) if x < y

(b) if x > y
(c) if x = y
(d) if x ≥ y
(e) if x ≤ y

Q6. I. $2x^2 - 15x + 27 = 0$
II. $2y^2 - 13y + 20 = 0$
(a) if x > y
(b) if x < y
(c) if x ≥ y
(d) if No relation can be established between x and y or x = y
(e) if x ≤ y



Q7. I. $9x^2 - 21x + 10 = 0$
II. $y^2 - 8y + 15 = 0$
(a) if x > y
(b) if x < y
(c) if x ≥ y
(d) if No relation can be established between x and y or x = y
(e) if x ≤ y

Q8. I. $2x^2 - 13x + 15 = 0$
II. $2y^2 - 11y + 12 = 0$
(a) if x > y
(b) if x < y
(c) if x ≥ y
(d) if No relation can be established between x and y or x = y
(e) if x ≤ y

Q9. I. $2x^2 + 7x + 6 = 0$
II. $2y^2 + 17y + 30 = 0$
(a) if x > y
(b) if x < y
(c) if x ≥ y

(d) if No relation can be established between x and y or x = y
(e) if x ≤ y

Q10. I. $x^2 - 2x - \sqrt{5}x + 2\sqrt{5} = 0$
II. $y^2 - \sqrt{3}y - \sqrt{2}y + \sqrt{6} = 0$
(a) if x > y
(b) if x < y
(c) if x ≥ y
(d) if No relation can be established between x and y or x = y
(e) if x ≤ y

Directions (11-15): What approximate value should come in place of the question mark (?) in the following questions?
Q11. {(4444 + 333 + 22 + 1) - (2 × 3 × 4 × 5)} × 2.532 = ?
(a) 11700
(b) 12250
(c) 10800
(d) 12100
(e) 10500

Q12. 40.05% of 349.9+59.89% of 249.98=?
(a) 280
(b) 290
(c) 270
(d) 275
(e) 298

Q13. 17% of 760+57% of 78.99+77.77=?
(a) 238
(b) 242
(c) 245
(d) 251
(e) 256

Q14. $35.99\sqrt{?} + 32.0032\sqrt{?} = \frac{68}{10.998} \times (?)$
(a) 81
(b) 72
(c) 169
(d) 121
(e) 144

Q15. $(3.02)^2 + (9.98)^2 + (8.13)^2 + (4.04)^2 = ?$
(a) 190

(b) 230
(c) 150
(d) 210
(e) 160

Solutions

S1. Ans.(a)

Sol.
I. $(x+10)(x-3)=0$
$x=-10,3$
II. $y=\frac{10}{3}$
Hence, $x<y$

S2. Ans.(b)

Sol.
I. $(3x-7)(x-3)=0$
$x=\frac{7}{3},3$
II. $(6y+7)(y+3)=0$
$\therefore y=-3,-\frac{7}{6}$
Hence, $x>y$

S3. Ans.(b)

Sol.
I. $x^3=\frac{128}{2}$
$\therefore x=4$
II. $\frac{1}{y^2}=\frac{1}{8}$
$\therefore y=\pm 2\sqrt{2}$
Hence, $x>y$

S4. Ans.(d)

Sol.

I. $(5x-12)(x-3)=0$

$x=\frac{12}{5},3$

II. $(5y-6)(5y-12)=0$

$y=\frac{6}{5},\frac{12}{5}$

Hence, $x \geq y$

S5. Ans.(e)

Sol.

I. $(x+6)(x+3)=0$

$x=-6,-3$

II. $(y+3)(y-6)=0$

$y=6,-3$

Hence, $x \leq y$

S6. Ans.(d)

Sol.

I. $2x^2-15x+27=0$

$\Rightarrow 2x^2-6x-9x+27=0$

$\Rightarrow (x-3)(2x-9)=0$

$\Rightarrow x=3,\frac{9}{2}$

II. $2y^2-13y+20=0$

$\Rightarrow 2y^2-8y-5y+20=0$

$\Rightarrow (y-4)(2y-5)=0$

$\Rightarrow y=4,\frac{5}{2}$

No relation

S7. Ans.(b)

Sol.

I. $9x^2-21x+10=0$

$\Rightarrow 9x^2-6x-15x+10=0$

$\Rightarrow 3x(3x-2)-5(3x-2)=0$

$\Rightarrow x=\frac{2}{3},\frac{5}{3}$

II. $y^2-8y+15=0$

$\Rightarrow y^2-5y-3y+15=0$

$\Rightarrow (y-3)(y-5)=0$

$\Rightarrow y=3,5$

Y > x

S8. Ans.(d)

Sol.

I. $2x^2 - 13x + 15 = 0$

$\Rightarrow 2x^2 - 10x - 3x + 15 = 0$

$\Rightarrow (x - 5)(2x - 3) = 0$

$\Rightarrow x = 5, \frac{3}{2}$

II. $2y^2 - 11y + 12 = 0$

$\Rightarrow 2y^2 - 8y - 3y + 12 = 0$

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

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

No relation

S9. Ans.(a)

Sol.

I. $2x^2 + 7x + 6 = 0$

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

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

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

II. $2y^2 + 17y + 30 = 0$

$\Rightarrow 2y^2 + 12y + 5y + 30 = 0$

$\Rightarrow (y + 6)(2y + 5) = 0$

$\Rightarrow y = -6, -\frac{5}{2}$

x > y

S10. Ans.(a)

Sol.

I. $x^2 - 2x - \sqrt{5}x + 2\sqrt{5} = 0$

$\Rightarrow (x - 2)\left(x - \sqrt{5}\right) = 0$

$\Rightarrow x = 2, \sqrt{5}$

II. $y^2 - \sqrt{3}y - \sqrt{2}y + \sqrt{6} = 0$

$\Rightarrow \left(y - \sqrt{3}\right)\left(y - \sqrt{2}\right) = 0$

$\Rightarrow y = \sqrt{3}, \sqrt{2}$

x > y

S11. Ans.(a)

Sol.

$\approx [4800 - (120)] \times 2.5$

$= 11700$

S12. Ans.(b)

Sol.

? ≃ 4 × 35 + 6 × 25
≃ 290

S13. Ans.(d)
Sol.
≈129+ 45+ 77 ≈ 251

S14. Ans.(d)

Sol.

$36\sqrt{x} + 32\sqrt{x} = \frac{68}{11} \times x$

$68\sqrt{x} = \frac{68}{11} \times x$

$x^2 - 121x = 0$

$\Rightarrow \quad x = 0, 121$

S15. Ans.(a)
Sol.
≈ 9 +100 + 64 + 16 ≈ 190

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