

**Quiz Date: 7<sup>th</sup> May 2020**

Directions (1-15): In each of the following questions two equations are given. You have to solve the equations and

- I.  $3x^2 + 10x + 8 = 0$   
II.  $3y^2 + 7y + 4 = 0$
- Q1.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $2x^2 + 21x + 10 = 0$   
II.  $3y^2 + 13y + 14 = 0$
- Q2.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $x^2 + x - 12 = 0$   
II.  $y^2 + 2y - 8 = 0$
- Q3.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $4x^2 - 13x + 9 = 0$   
II.  $3y^2 - 14y + 16 = 0$
- Q4.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $8x^2 + 18x + 9 = 0$   
II.  $4y^2 + 19y + 21 = 0$
- Q5.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$

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(e) if  $x > y$

I.  $3x^2 + 16x + 21 = 0$

Q6. II.  $6y^2 + 17y + 12 = 0$

(a) if  $x < y$

(b) if  $x \leq y$

(c) relationship between  $x$  and  $y$  cannot be determined

(d) if  $x \geq y$

(e) if  $x > y$

I.  $16x^2 + 20x + 6 = 0$

Q7. II.  $10y^2 + 38y + 24 = 0$

(a) if  $x < y$

(b) if  $x \leq y$

(c) relationship between  $x$  and  $y$  cannot be determined

(d) if  $x \geq y$

(e) if  $x > y$



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

Q8. II.  $12y^2 - 22y + 8 = 0$

(a) if  $x < y$

(b) if  $x \leq y$

(c) relationship between  $x$  and  $y$  cannot be determined

(d) if  $x \geq y$

(e) if  $x > y$

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

Q9. II.  $13y^2 = 32y - 12$

(a) if  $x < y$

(b) if  $x \leq y$

(c) relationship between  $x$  and  $y$  cannot be determined

(d) if  $x \geq y$

(e) if  $x > y$

- I.  $8x^2 + 26x + 15 = 0$   
II.  $4y^2 + 24y + 35 = 0$
- Q10.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $6x^2 + 19x + 15 = 0$   
II.  $24y^2 + 11y + 1 = 0$
- Q11.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $2x^2 + 11x + 15 = 0$   
II.  $4y^2 + 22y + 24 = 0$
- Q12.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $2x^2 + 9x + 9 = 0$   
II.  $2y^2 + 17y + 36 = 0$
- Q13.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $5x^2 + 29x + 20 = 0$   
II.  $25y^2 + 25y + 6 = 0$
- Q14.
- (a) if  $x < y$
  - (b) if  $x \leq y$
  - (c) relationship between  $x$  and  $y$  cannot be determined
  - (d) if  $x \geq y$
  - (e) if  $x > y$

- I.  $3x^2 - 16x + 21 = 0$   
II.  $3y^2 - 28y + 65 = 0$
- Q15.

A pink rectangular box containing the word "BANKERS" in white, bold, uppercase letters.The logo for "adda247" in a grey, lowercase, sans-serif font. The "247" is larger and more prominent than "adda".

- (a) if  $x < y$
- (b) if  $x \leq y$
- (c) relationship between  $x$  and  $y$  cannot be determined
- (d) if  $x \geq y$
- (e) if  $x > y$

### Solutions

S1. Ans.(b)

Sol.

$$\text{I. } 3x^2 + 10x + 8 = 0$$

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

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

$$\Rightarrow x = -2, -4/3$$

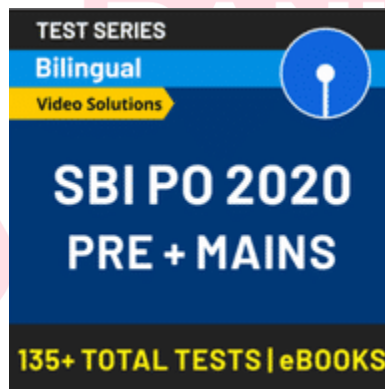
$$\text{II. } 3y^2 + 7y + 4 = 0$$

$$\Rightarrow 3y^2 + 3y + 4y + 4 = 0$$

$$\Rightarrow (y + 1)(3y + 4) = 0$$

$$\Rightarrow y = -1, -4/3$$

$y \geq x$



S2. Ans.(c)

Sol.

$$\text{I. } 2x^2 + 21x + 10 = 0$$

$$\Rightarrow 2x^2 + 20x + x + 10 = 0$$

$$\Rightarrow (x + 10)(2x + 1) = 0$$

$$\Rightarrow x = -10, -1/2$$

$$\text{II. } 3y^2 + 13y + 14 = 0$$

$$\Rightarrow 3y^2 + 6y + 7y + 14 = 0$$

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

$$\Rightarrow y = -2, -7/3$$

No relation

S3. Ans.(c)

Sol.

$$\begin{aligned} \text{I. } x^2 + x - 12 &= 0 \\ \Rightarrow x^2 + 4x - 3x - 12 &= 0 \\ \Rightarrow (x + 4)(x - 3) &= 0 \\ \Rightarrow x &= 3, -4 \end{aligned}$$

$$\begin{aligned} \text{II. } y^2 + 2y - 8 &= 0 \\ \Rightarrow y^2 + 4y - 2y - 8 &= 0 \\ \Rightarrow (y + 4)(y - 2) &= 0 \\ \Rightarrow y &= -4, 2 \end{aligned}$$

No relation

S4. Ans.(c)

Sol.

$$\begin{aligned} \text{I. } 4x^2 - 13x + 9 &= 0 \\ \Rightarrow 4x^2 - 4x - 9x + 9 &= 0 \\ \Rightarrow (x - 1)(4x - 9) &= 0 \\ \Rightarrow x &= 1, 9/4 \end{aligned}$$

$$\begin{aligned} \text{II. } 3y^2 - 14y + 16 &= 0 \\ \Rightarrow 3y^2 - 6y - 8y + 16 &= 0 \\ \Rightarrow (y - 2)(3y - 8) &= 0 \\ \Rightarrow y &= 2, 8/3 \end{aligned}$$

No relation

S5. Ans.(e)

Sol.

$$\begin{aligned} \text{I. } 8x^2 + 18x + 9 &= 0 \\ \Rightarrow 8x^2 + 12x + 6x + 9 &= 0 \\ \Rightarrow (2x + 3)(4x + 3) &= 0 \\ \Rightarrow x &= -3/2, -3/4 \end{aligned}$$

$$\begin{aligned} \text{II. } 4y^2 + 19y + 21 &= 0 \\ \Rightarrow 4y^2 + 12y + 7y + 21 &= 0 \\ \Rightarrow (y + 3)(4y + 7) &= 0 \\ \Rightarrow y &= -3, -7/4 \end{aligned}$$

Sol.  $x > y$

S6. Ans.(a)

$$\begin{aligned} \text{I. } 3x^2 + 16x + 21 &= 0 \\ \Rightarrow 3x^2 + 9x + 7x + 21 &= 0 \\ \Rightarrow (x + 3)(3x + 7) &= 0 \\ \Rightarrow x &= -3, -7/3 \end{aligned}$$

$$\begin{aligned} \text{II. } 6y^2 + 17y + 12 &= 0 \\ \Rightarrow 6y^2 + 9y + 8y + 12 &= 0 \\ \Rightarrow 3y(2y + 3) + 4(2y + 3) &= 0 \\ \Rightarrow y &= -3/2, -4/3 \end{aligned}$$

$y > x$

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S7. Ans.(e)

Sol.

I.  $16x^2 + 20x + 6 = 0$

$$\Rightarrow 8x^2 + 10x + 3 = 0$$

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

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

$$\Rightarrow x = -1/2, -3/4$$

II.  $10y^2 + 38y + 24 = 0$

$$\Rightarrow 5y^2 + 19y + 12 = 0$$

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

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

$$y = -3, -4/5$$

$$x > y$$

S8. Ans.(b)

Sol.

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

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

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

$$\Rightarrow x = 1/2, -5/4$$

II.  $12y^2 - 22y + 8 = 0$

$$\Rightarrow 6y^2 - 11y + 4 = 0$$

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

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

$$\Rightarrow y = 1/2, 4/3$$

$$y \geq x$$

S9. Ans.(a)

Sol.

I.  $17x^2 + 48x - 9 = 0$

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

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

$$\Rightarrow x = 3/17, -3$$

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

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

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

$$\Rightarrow y = 2, 6/13$$

$$y > x$$

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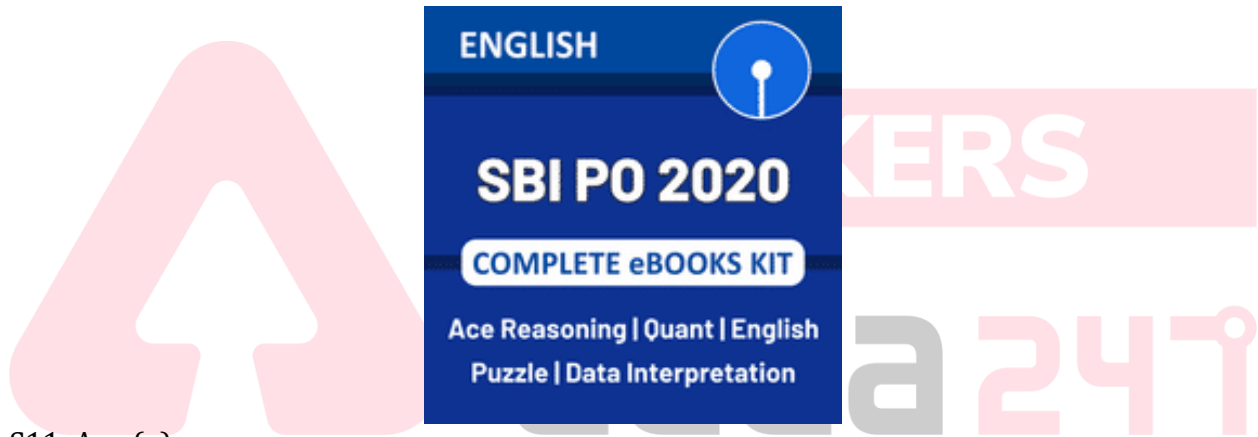
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S10. Ans.(d)

Sol.

$$\begin{aligned} \text{I. } 8x^2 + 26x + 15 &= 0 \\ \Rightarrow 8x^2 + 20x + 6x + 15 &= 0 \\ \Rightarrow 4x(2x + 5) + 3(2x + 5) &= 0 \\ \Rightarrow (2x + 5)(4x + 3) &= 0 \\ \Rightarrow x &= -5/2, -3/4 \end{aligned}$$

$$\begin{aligned} \text{II. } 4y^2 + 24y + 35 &= 0 \\ \Rightarrow 4y^2 + 10y + 14y + 35 &= 0 \\ \Rightarrow 2y(2y + 5) + 7(2y + 5) &= 0 \\ \Rightarrow (2y + 5)(2y + 7) &= 0 \\ \Rightarrow y &= -5/2, -7/2 \end{aligned}$$

 $x \geq y$ 

S11. Ans.(a)

Sol.

$$\begin{aligned} \text{I. } 6x^2 + 19x + 15 &= 0 \\ \Rightarrow 6x^2 + 9x + 10x + 15 &= 0 \\ \Rightarrow (2x + 3)(3x + 5) &= 0 \\ \Rightarrow x &= -3/2, -5/3 \end{aligned}$$

$$\begin{aligned} \text{II. } 24y^2 + 11y + 1 &= 0 \\ \Rightarrow 24y^2 + 8y + 3y + 1 &= 0 \\ \Rightarrow (3y + 1)(8y + 1) &= 0 \\ \Rightarrow y &= -1/3, -1/8 \end{aligned}$$

 $y > x$ 

S12. Ans.(c)

Sol.

$$\begin{aligned} \text{I. } 2x^2 + 11x + 15 &= 0 \\ \Rightarrow 2x^2 + 6x + 5x + 15 &= 0 \\ \Rightarrow (x + 3)(2x + 5) &= 0 \\ \Rightarrow x &= -3, -5/2 \end{aligned}$$

$$\begin{aligned} \text{II. } 4y^2 + 22y + 24 &= 0 \\ \Rightarrow 2y^2 + 11y + 12 &= 0 \\ \Rightarrow 2y^2 + 8y + 3y + 12 &= 0 \\ \Rightarrow (y + 4)(2y + 3) &= 0 \\ \Rightarrow y &= -4, -3/2 \end{aligned}$$

No relation

S13. Ans.(e)

Sol.

$$\begin{aligned} \text{I. } 2x^2 + 9x + 9 &= 0 \\ \Rightarrow 2x^2 + 6x + 3x + 9 &= 0 \\ \Rightarrow (x + 3)(2x + 3) &= 0 \\ \Rightarrow x &= -3, -3/2 \end{aligned}$$

$$\begin{aligned} \text{II. } 2y^2 + 17y + 36 &= 0 \\ \Rightarrow 2y^2 + 8y + 9y + 36 &= 0 \\ \Rightarrow (y + 4)(2y + 9) &= 0 \\ y &= -4, -9/2 \end{aligned}$$

$x > y$

S14. Ans.(a)

Sol.

$$\begin{aligned} \text{I. } 5x^2 + 29 + 20 &= 0 \\ \Rightarrow 5x^2 + 25x + 4x + 20 &= 0 \\ \Rightarrow (x + 5)(5x + 4) &= 0 \\ \Rightarrow x &= -5, -4/5 \end{aligned}$$

$$\begin{aligned} \text{II. } 25y^2 + 25y + 6 &= 0 \\ \Rightarrow 25y^2 + 15y + 10y + 6 &= 0 \\ \Rightarrow (5y + 3)(5y + 2) &= 0 \\ \Rightarrow y &= -3/5, -2/5 \end{aligned}$$

$y > x$

S15. Ans.(a)

Sol.

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$$\begin{aligned}\text{I. } 3x^2 - 16x + 21 &= 0 \\ \Rightarrow 3x^2 - 9x - 7x + 21 &= 0 \\ \Rightarrow (x - 3)(3x - 7) &= 0 \\ \Rightarrow x &= 3, 7/3\end{aligned}$$

$$\begin{aligned}\text{II. } 3y^2 - 28y + 65 &= 0 \\ \Rightarrow 3y^2 - 15y - 13y + 65 &= 0 \\ \Rightarrow (y - 5)(3y - 13) &= 0 \\ \Rightarrow y &= 5, 13/3 \\ y &> x\end{aligned}$$

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