Quiz Date: 25th September 2020

Q1. The area of a rectangle is equal to the area of a circle whose radius is 14 cm. If the breadth of the rectangle is 22 cm, what is its length?
(a) 24 cm
(b) 28 cm
(c) 26 cm
(d) Cannot be determined
(e) None of these

Q2. If the digits of a two-digit number are interchanged, the number formed is greater than the original number by 45. If the difference between the digits is 5, what is the original number?
(a) 16
(b) 27
(c) 38
(d) 49
(e) All of the above

Q3. P, Q and R invested Rs. 45,000, Rs. 70,000 and Rs. 90,000 respectively to start a business. At the end of two years, they earned a profit of Rs. 1,64,000. What will be Q's share in the profit?
(a) Rs. 56,000
(b) Rs. 35,000
(c) Rs. 72,000
(d) Rs. 64,000
(e) None of these

Q4. What will be the compound interest accrued on an amount of Rs. 10,000 @ 20 p.c.p.a. in two years if the interest is compounded half-yearly?
(a) Rs. 4,400
(b) Rs. 4,600
(c) Rs. 4,641
(d) Rs. 4,680
(e) Rs. 6,441

Q5. Out of 5 women and 4 men, a committee of three members is to be formed in such a way that at least one member is a woman. In how many different ways can this be done?
(a) 80
(b) 84
(c) 76
(d) 96
(e) 72

Directions (6-10): Simplify the following questions.
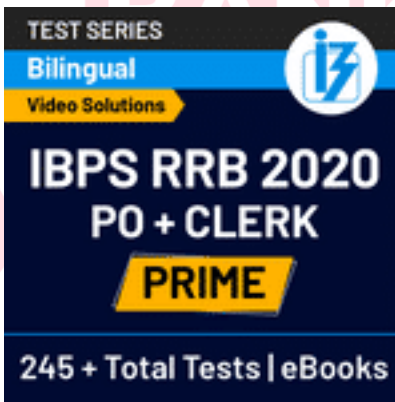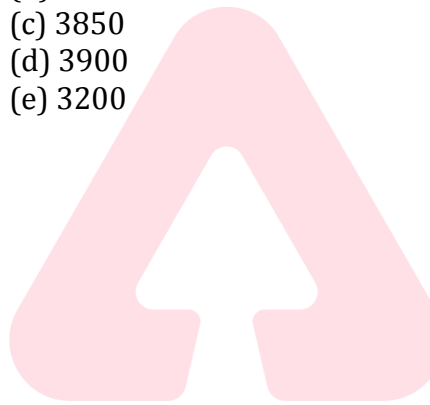
Q6. $(35)^2 \div \sqrt[3]{125} + (25)^2 \div 125 = ?$
(a) 200
(b) 250
(c) 150
(d) 100
(e) 140

Q7. $(?)^2 \times (12)^2 \div (48)^2 = 81$
(a) 36
(b) 32
(c) 9
(d) 15
(e) 48

Q8. 64% of ? ÷ 14 = 176
(a) 3800
(b) 3950
(c) 3850
(d) 3900
(e) 3200

Q9. 45% of 224 × ? % of 120 = 8104.32
(a) 67
(b) 62
(c) 59
(d) 71
(e) 57

Q10. 16% of 450 × ? % of 880 = 3168
(a) 6
(b) 2
(c) 5
(d) 8
(e) 10

Directions (11-15): Two equations I and II are given below in each question. You have to solve these equations and give answer

Q11.
I. $x^2 = 49$
II. $y^2 - 4y - 21 = 0$
(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

Q12.
I. $3x^2 - 13x - 10 = 0$
II. $3y^2 + 10y - 8 = 0$
(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

Q13.
I. $x^2 - 5x + 6 = 0$
II. $y^2 + 7y + 10 = 0$
(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. $x^2 - 6x = 7$
II. $2y^2 + 13y + 15 = 0$
(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

Q15.
I. $x^2 + 4x + 4 = 0$
II. $y^2 - 8y + 16 = 0$
(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

**Solutions**

S1. Ans.(b)
Sol.

$$Length \times 22 = \frac{22}{7} \times 14 \times 14$$

Or, Length $= \frac{22}{7} \times \frac{14 \times 14}{22}$ =28 cm

S2. Ans.(e)
Sol.

Let the original number be $10x + y$
Then, $10x + y - (10x + y) = 45$
Or, $y - x = 5$
So, there are four numbers which satisfies this equation
These number are 16, 27, 38, 49
So, option (E) is our correct answer

S3. Ans.(a)
Sol. Profit is distributed in the ratio 45 : 70 : 90 = 9 : 14 : 18

$\therefore$ Required share $= \frac{14}{41} \times 164000 = 56000$

S4. Ans.(c)
Sol.

$CI = 10000 \left[\left(1 + \frac{10}{100}\right)^4 - 1\right]$
$= 10000 \times 0.4641$
$= Rs.\,4641$

S5. Ans.(a)
Sol.

No. of ways $= {}^5C_1 \times {}^4C_2 + {}^5C_2 \times {}^4C_1 + {}^5C_3$
$= 5 \times 6 + 10 \times 4 + 10$
$= 80$

S6. Ans.(b)

Sol.

$? = \frac{1225}{5} + \frac{625}{125}$
$= 250$

S7. Ans.(a)

Sol.
$$(?)^2 \times (12)^2 \div 48^2 = 81$$
$$\Rightarrow (?)^2 = 1296$$
$$\Rightarrow ? = \pm 36$$

S8. Ans.(c)

Sol.
$$\frac{64}{100} \times ? = 176 \times 14$$
$$\Rightarrow ? = 3{,}850$$

S9. Ans.(a)

Sol.
$$\frac{45}{100} \times 224 \times \frac{?}{100} \times 120 = 8104.32$$
$$\Rightarrow ? = 67$$

S10. Ans.(c)

Sol.
$$\frac{16}{100} \times 450 \times \frac{?}{100} \times 880 = 3168$$
$$\Rightarrow ? = 5$$

S11. Ans.(e)

Sol.
I. $x^2 = 49$
$x = \pm 7$
II. $y^2 - 4y - 21 = 0$
$y^2 - 7y + 3y - 21 = 0$
$y(y - 7) + 3(y - 7) = 0$
$(y - 7)(y + 3) = 0$
$y = 7 \text{ or} - 3$
No relation

S12. Ans.(e)

Sol.

I. $3x^2 - 13x - 10 = 0$

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

$3x(x - 5) + 2(x - 5) = 0$

$(x - 5)(3x + 2) = 0$

$x = 5 \text{ or } \dfrac{-2}{3}$

II. $3y^2 + 10y - 8 = 0$

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

$3y(y + 4) - 2(y + 4) = 0$

$(y + 4)(3y - 2) = 0$

$y = -4 \text{ or } \dfrac{2}{3}$

No relation



S13. Ans.(b)

Sol.

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

$\Rightarrow x = 3, 2$

II. $y^2 + 7y + 10 = 0$

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

$\Rightarrow y = -2, -5$

$x > y$

S14. Ans.(b)

Sol.

$x^2 - 6x - 7 = 0$

$\Rightarrow x^2 - 7x + x - 7 = 0$

$\Rightarrow x(x - 7) + 1(x - 7) = 0$

$\Rightarrow (x + 1)(x - 7) = 0$

$\Rightarrow x = -1$ or $7$

II. $2y^2 + 13y + 15 = 0$

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

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

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

$\Rightarrow y = -5$ or $-\dfrac{3}{2}$

$\therefore x > y$

S15. Ans.(a)

Sol.

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

$(x + 2)^2 = 0 \Rightarrow x = -2$

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

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

$\therefore y > x$

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