**Quiz Date: 1st March 2020**

**Directions (1-5):** Find the wrong term in the following number series.

Q1.   2, 5, 14, 41, 125, 365
(a) 5
(b) 14
(c) 41
(d) 125
(e) 365

Q2.   1, 3, 8, 19, 42, 91
(a) 42
(b) 91
(c) 19
(d) 8
(e) 3

Q3.   23, 30, 21, 32, 19, 35
(a) 23
(b) 30
(c) 35
(d) 19
(e) 32

Q4.   10, 17, 26, 37, 50, 64, 82
(a) 17
(b) 37
(c) 50
(d) 82
(e) 64

Q5.   16, 4, 8, 2, 6, 1
(a) 6
(b) 4
(c) 8
(d) 2
(e) 16

Q6. Simple interest on a certain sum at the rate of 7 p.c.p.a for 4 years is Rs. 3584. What will be the compound interest on the same principal at 4 p.c.p.a. in two years?
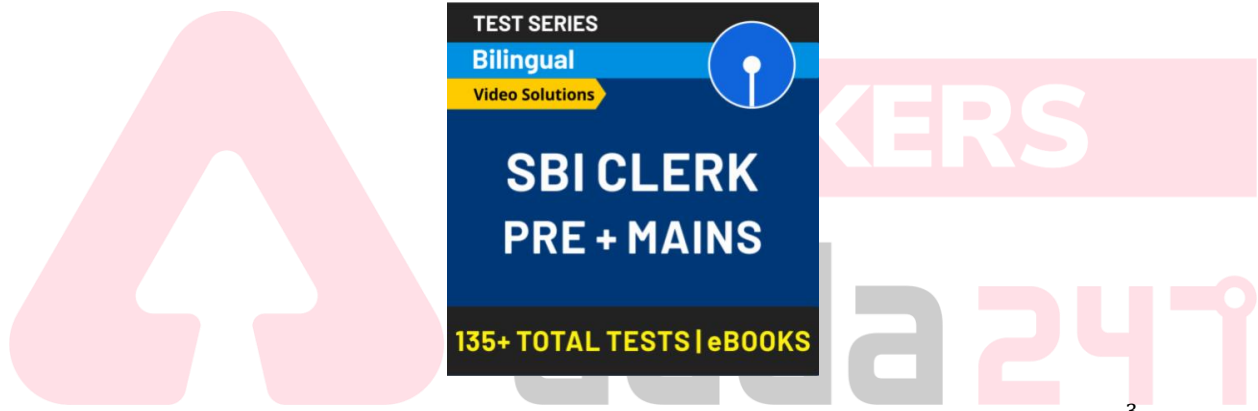
(a) Rs. 1054.48

(b) Rs. 1044.48

(c) Rs. 938

(d) Rs. 1064.84

(e) None of these

Q7. The cost of pure milk is Rs. 16 per litre. On adding water, the mixture is sold at Rs. 15 per litre. In this way, the milkman earns 20% profit. What is the ratio of milk and water in the mixture? (note – water is free of cost)

(a) 25 : 1

(b) 7 : 25

(c) 15 : 1

(d) 1 : 15

(e) None of these



Q8. Four persons–M, N, O and P – distributed a sum of Rs. 44352 among themselves. M got $\frac{3}{8}$th of total amount. N got $\frac{1}{6}$th part of the remaining amount. Therefore, the remaining amount was divided between O and P in the ratio 3 : 2. The amount received by P is

(a) Rs. 8280

(b) Rs. 9240

(c) Rs. 8184

(d) Rs. 6184

(e) None of these

Q9. Three persons A, B and C start a business with Rs. 12800, Rs. 16800 and Rs. 9600 respectively. At the end of the year, B received Rs. 13125 as share in total profit. What is the share of C in the profit?

(a) Rs. 7850

(b) Rs. 7550

(c) Rs. 7500

(d) Rs. 8500

(e) None of these

Q10. A shopkeeper has goods of worth Rs. 6000. He sold half of the goods at a gain of 12%. At what profit per cent should he sell the remaining half of the stock so that he gets 18% profit on the whole?

(a) 25%

(b) 24%

(c) 18%

(d) 8%

(e) None of these

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

(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

Q11. I. $2x^2 + 11x + 14 = 0$

II. $4y^2 + 12y + 9 = 0$

Q12. I. $x^2 - 4 = 0$

II. $y^2 + 6y + 9 = 0$

Q13. I. $x^2 - 7x + 12 = 0$

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

Q14. I. $x^2 = 729$

II. $y = \sqrt{529}$

Q15. I. $x^2 - 423 = -398$

II. $y^2 + 321 = 346$

## Solutions

S1. Ans. (d)

Sol.

Series is × 3 –1, × 3–1, ×3–1…

∴ Wrong term = 125

S2. Ans. (b)

Sol.

Series is × 2+1, × 2+2, × 2+3, × 2+4…

∴ Wrong term =42 × 2 +5 = 89 ≠ $\boxed{91}$

S3. Ans. (c)

Sol.

Series is 7, – 9 + 11, – 13 + 15, – 17…

∴ Wrong term = 35

S4. Ans. (e)

Sol.

Series is

$3^2 + 1 = 10$

$4^2 + 1 = 17$

$5^2 + 1 = 26$

$6^2 + 1 = 37$

$7^2 + 1 = 50$

$8^2 + 1 = \boxed{65}$

$9^2 + 1 = 82$

∴ Wrong term = 64

S5. Ans. (a)

Sol.

Series is ÷ 4, × 2, ÷ 4, × 2 …

∴ Wrong term = 6

S6. Ans.(b)

Sol.

$$P = \frac{SI \times 100}{Time \times Rate} = \frac{3584 \times 100}{4 \times 7}$$

= Rs. 12800

CI = $P\left[\left(1 + \frac{R}{100}\right)^n - 1\right]$

= $12800 \left[\left(1 + \frac{4}{100}\right)^2 - 1\right]$

$12800\left[\left(\frac{26}{25}\right)^2 - 1\right]$

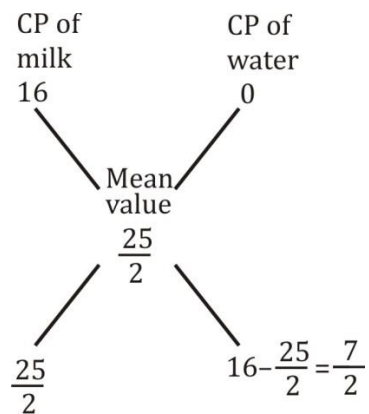= $12800\left(\frac{676}{625} - 1\right)$

= $12800 \times \frac{51}{625} = Rs.\,1044.48$

S7. Ans.(e)

Sol.

SP of 1 litre of mixture = Rs. 15,

Gain = 20%

$$\therefore CP = \frac{100}{120} \times 15 = Rs. \frac{25}{2}$$

CP of milk 16

CP of water 0

Mean value $\frac{25}{2}$

$\frac{25}{2}$          $16 - \frac{25}{2} = \frac{7}{2}$

$\therefore$ Required ratio = 25: 7

S8. Ans.(b)

Sol.

M's share

$$= Rs. \left(\frac{3}{8} \times 44352\right) = Rs. 16632$$

Remaining amount = Rs. (44352 – 16632) = Rs. 27720

N's share = Rs. $\left(\frac{1}{6} \times 27720\right) = Rs. 4620$

$\therefore$ P's share

= Rs. $\left(\frac{2}{5} \times (27720 - 4620)\right) = Rs. 9240$

S9. Ans.(c)

Sol.

Ratio of their respective capitals = A: B: C

= 12800: 16800: 9600

= 16: 21: 12

Let the total profit be Rs. x.

$$\therefore B's\ share = Rs.\frac{21x}{49}$$

$$\therefore \frac{21x}{49} = 13125$$

x = $\frac{13125 \times 49}{21} = Rs.\ 30625$

$$\therefore C's\ share = \frac{12}{49} \times 30625 = 7500$$


S10. Ans.(b)

Sol.

For 18% gain,

Total SP = $\frac{6000 \times 118}{100} = Rs.\ 7080$

SP of goods worth Rs. 3000 at 12% profit

= $\frac{3000 \times 112}{100} = Rs.\ 3360$

Expected SP of remaining goods

= Rs. (7080 – 3360) = Rs. 3720

Let the gain per cent be x%.

Now, according to the question,

$\frac{3000 \times (100+x)}{100} = 3720$

$\Rightarrow \frac{100+x}{100} = \frac{3720}{3000} = 1.24$

$\Rightarrow x = 124 - 100 = 24\%$


S11. Ans.(a)

Sol.

I. $2x^2 + 11x + 14 = 0$

$\Rightarrow 2x^2 + 7x + 4x + 14 = 0$

$\Rightarrow x(2x + 7) + 2(2x + 7) = 0$

$\Rightarrow (x + 2)(2x + 7) = 0$

$\Rightarrow x = -2, -\dfrac{7}{2}$

II.$4y^2 + 12y + 9 = 0$

$\Rightarrow 4y^2 + 6y + 6y + 9 = 0$

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

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

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

$\therefore x < y$


S12. Ans.(b)

Sol.

I.$x^2 - 4 = 0$

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

$\Rightarrow x = 2, -2$

II.$y^2 + 6y + 9 = 0$

$\Rightarrow y^2 + 3y + 3y + 9 = 0$

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

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

$\Rightarrow y = -3$

$\therefore x > y$


S13. Ans.(d)

Sol.

I.$x^2 - 7x + 12 = 0$

$\Rightarrow x^2 - 4x - 3x + 12 = 0$

$\Rightarrow x(x - 4) - 3(x - 4) = 0$

$\Rightarrow (x - 3)(x - 4) = 0$

$\Rightarrow x = 3, 4$

II. $y^2 + y - 12 = 0$
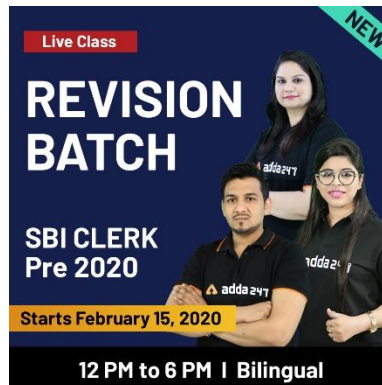
$\Rightarrow y^2 + 4y - 3y - 12 = 0$

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

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

$\Rightarrow y = 3, -4$

$\therefore x \geq y$

S14. Ans.(e)

Sol.

I. $x^2 = 729$

$\Rightarrow x^2 - 729 = 0$

$\Rightarrow (x - 27)(x + 27) = 0$

$\Rightarrow x = 27, -27$

II. y = $\sqrt{529}$

y = 23

$\therefore$ No relation can be established between x and y.

S15. Ans.(e)

Sol.

I. $x^2 = 25$

Or, x = $\pm$ 5

II. $y^2 = 25$

Or, y = $\pm 5$

$\therefore$ x = y

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