

SEBI Grade A Quantitative Aptitude (Solutions)

S1. Ans.(d)

Sol. Difference between simple interest and compound interest for 3 years

$$= P \left[\left(\frac{r}{100} \right)^2 \times \left(3 + \frac{r}{100} \right) \right]$$

$$272 = 2125 \left[\left(\frac{r}{100} \right)^2 \times \left(3 + \frac{r}{100} \right) \right]$$

$$r^2 \left(\frac{300 + r}{100} \right) = 128000$$

So, $r = 20\%$ (alternatively, check using options)

S2. Ans.(b)

Sol. $A : B = 3 : 1$ and $A : C = 9 : 1$

So, $A : B : C = 9 : 3 : 1$

Let efficiency of A, B and C are $9x$, $3x$ and x units/day respectively

ATQ,

Let C alone can complete the same work in t days.

$$(9x + 3x) \times 17 = x \times t \text{ days}$$

So, $t = 204$ days.

S3. Ans.(e)

Sol. Let height of cylinder = $2x$ cm

Then radius of cylinder = $\frac{1}{2} \times 2x = x$ cm

Base area of cylinder = $\pi r^2 \text{ cm}^2$

$$154 = \frac{22}{7} r^2 \Rightarrow r = 7 \text{ cm}$$

so, height = $2 \times 7 = 14$ cm

volume of cylinder = $\pi r^2 h$

$$= \frac{22}{7} \times 7 \times 7 \times 14 = 2156 \text{ cu.cm}$$



S4. Ans.(c)

Sol. Let present age of veer = x years

And present age of raj = y years

ATQ,

$$\frac{x - 15}{y - 15} = \frac{2}{1}$$

$$x - 2y = -15$$

Since their age difference will be same

$$\text{So, } x - y = 10$$

On solving both equation $x - 2y = -15$ and $x - y = 10$

$x = 35$ years and $y = 25$ years

15 years hence ages of veer and raj will be 50 years and 40 years respectively.

So, required ratio = 5:4

TEST SERIES

Bilingual

Video Solutions



SBI CLERK MAINS

25+ TOTAL TESTS | eBOOKS

S5. Ans.(c)**Sol.** Let total goods be $35x$ (LCM of 5 & 7)Let CP of each good be Rs y Total CP = Rs $35xy$

ATQ,

SP (15x goods) = $15x \times 1.2y = Rs\ 18xy$ SP (14x goods) = $14x \times 0.9y = Rs\ 12.6xy$ SP (6 goods) = $6x \times 1.25y = Rs\ 7.5xy$ Total SP = $18xy + 12.6xy + 7.5xy = Rs\ 38.1xy$ Profit % = $\frac{28.1xy - 35xy}{35xy} \times 100 = 8.96\% \approx 9\%$ **S6. Ans.(b)****Sol.**

$$\frac{65 \times 360}{100} - \frac{?}{100} \times 250 \approx 139$$

$$\Rightarrow 234 - \frac{25 \times ?}{10} = 139$$

$$\Rightarrow ? = \frac{95 \times 10}{25} = 38$$

S7. Ans.(a)**Sol.** $\sqrt{912 \div 24 + 184 - 53} \approx ?$

$$\Rightarrow ? = \sqrt{169} = 13$$

S8. Ans.(c)**Sol.** $(15)^2 - (5)^3 + \sqrt{1521} + 9 \times 13 \approx (?)^2$

$$\Rightarrow 225 - 125 + 39 + 117 = (?)^2$$

$$\Rightarrow ? = \sqrt{256} = 16$$

S9. Ans.(e)**Sol.** $(3750 - ?) \div 55 \approx 23$

$$\Rightarrow ? = 3750 - 55 \times 23$$

$$? = 2485$$

S10. Ans.(d)**Sol.** $(3416 \div 56) - (1134 \div ?) \approx 19$

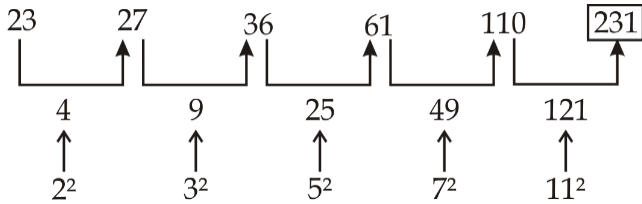
$$\Rightarrow 61 - \frac{1134}{?} = 19$$

$$\Rightarrow 42 = \frac{1134}{?}$$

$$\Rightarrow ? = 27$$

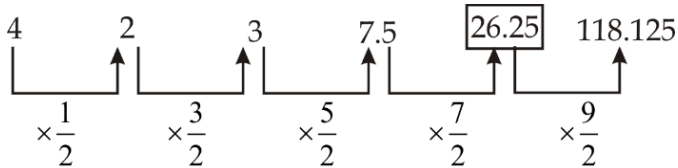
S11. Ans.(b)

Sol.



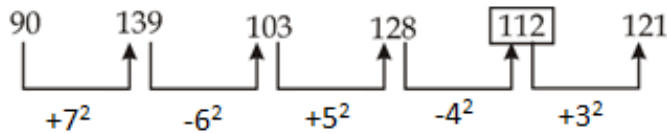
S12. Ans.(c)

Sol.



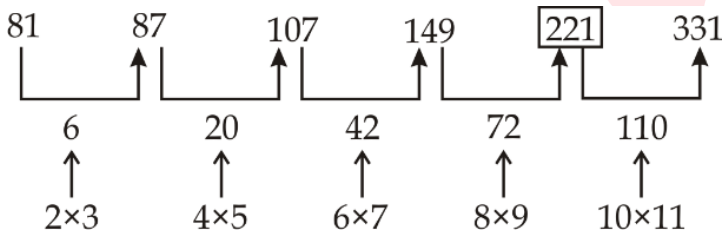
S13. Ans.(a)

Sol.



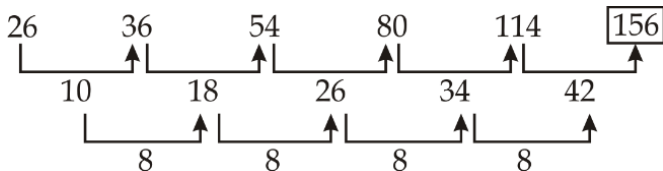
S14. Ans.(d)

Sol.



S15. Ans.(e)

Sol.



S16. Ans.(b)

Sol. Let another amount = Rs. x

ATQ,

$$\frac{5000 \times 4 \times 3}{100} + \frac{x \times 6 \times 3}{100} = 3300$$

$$600 + \frac{18x}{100} = 3300$$

$$x = \text{Rs. } 15000$$

TEST SERIES

Bilingual

Video Solutions



RBI ASSISTANT
MAINS

25 Total Tests | eBooks

S17. Ans.(d)

Sol. Let two number are x and $y(x > y)$

L.C.M of both number = $3x$

$$l.c.m \times h.c.f = x \times y$$

$$3x \times h.c.f = x \times y$$

$$y(\text{smallest number}) = 3 \times h.c.f$$

ATQ,

$$y - h.c.f = 12$$

$$3 \times h.c.f - h.c.f = 12$$

$$H.C.F=6$$

so, smallest number $y= H.C.F +12$

$$= 6 + 12 = 18$$

S18. Ans.(a)

Sol. Let first odd number = a

$$\text{Then average} = \frac{a + a + 2 + a + 4 + a + 6 + a + 8 + a + 10 + a + 12}{7}$$

$$13 = \frac{7a + 42}{7} \Rightarrow a = 7$$

odd number = 7, 9, 11, 13, 15, 17, 19

second largest number = 17

S19. Ans.(e)

Sol. The ratio of speed of boat in upstream to downstream = $100 : 128\frac{4}{7} = 7 : 9$

Let speed of boat in downstream = $7a$ unit

And speed of boat in upstream = $9a$ unit

$$\text{So, the speed of boat in still water} = \frac{7a + 9a}{2} = 8a \text{ unit}$$

ATQ,

$$8a \times 7 = 7a \times t \text{ (where } t \text{ is time taken by boat to cover same distance in upstream)}$$

$$T = 8 \text{ hours}$$

S20. Ans.(c)

Sol. Sides of triangle in the ratio of 12:5:13 form a triplet.

So, it is right-angle triangle

Let Its base and height are $12x$ cm and $5x$ cm

$$\text{Area of triangle} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$270 = \frac{1}{2} \times 12x \times 5x$$

$$x^2 = 9$$

$$x = \pm 3$$

$$x = 3$$

So, its perimeter is $12x + 5x + 13x = 30x$ cm

$$= 30 \times 3 = 90 \text{ cm}$$

S21. Ans.(c)

Sol. Income $X_{92} = \text{Exp. } Y_{94} = 700000 \times \frac{100}{140} = 5 \text{ Lac}$

Expenditure $X_{92} = 500000 \times \frac{100}{125} = 4 \text{ lac}$

Profit = 5 Lac - 4 Lac = Rs. 1 lac

S22. Ans.(b)

Sol. Given Exp. $X_{1991} = \text{Rs. } 1 \text{ lac.}$

\therefore Avg. Expenditure of X in all these years = $\frac{1}{5} \left[1 \times \frac{130}{100} + 1.5 \left(\frac{125}{100} \right) + 2 \left(\frac{150}{100} \right) + 2.5 \left(\frac{140}{100} \right) + 3 \left(\frac{120}{100} \right) \right]$

= $\frac{1}{500} [130 + 187.5 + 300 + 350 + 360]$

= 2.655 Lacs

S23. Ans.(a)

Sol. Given, ratio of expenditures of X, Y and Z is 2: 3: 5 in 1995

Assume, Exp. Of X = 200

\therefore Income of X = $200 \left(\frac{120}{100} \right) = 240$, Profit = 40

Exp. Of Y = 300

\therefore Income of Y = $300 \left(\frac{180}{100} \right) = 540$, Profit = 240

Exp. Of Z = 500

\therefore Income of Z = $500 \left(\frac{140}{100} \right) = 700$, Profit = 200

\therefore Ratio of their profit = 40: 240: 200 = 1: 6: 5

S24. Ans.(e)

Sol. Income $X_{93} = 4,00,000$

\therefore Exp. $Z_{93} = 400000 \left[\frac{100}{80} \right] = 5,00,000$

Profit $Z_{93} = 5,00,000 \left[\frac{20}{100} \right] = 1,00,000$

Profit $X_{93} = 4,00,000 \times \frac{100}{150} \times \frac{50}{100} = 1,33,333.33$

Profit $X_{93} = 1,33,333.33 - 1,00,000 = \text{Rs. } 33,333$

S25. Ans.(b)

Sol. Clearly from the graph;

In 1991, Avg of 30+40+60 = $\frac{130}{3}$

In 1992, Avg of 25 + 30 + 30 = $\frac{85}{3}$

1993, Avg of 50 + 30 + 20 = $\frac{100}{3}$

1994, Avg of 40 + 40 + 20 = $\frac{100}{3}$

1995, Avg of 20 + 80 + 40 = $\frac{140}{3}$

adda247

12 Months Subscription



BANK

Useful for Bank & Insurance Exams

TEST PACK

S26. Ans.(e)

Sol. I. $3x^2 - 17x + 20 = 0$

$3x^2 - 12x - 5x + 20 = 0$

$3x(x - 4) - 5(x - 4) = 0$

$x = 4, 5/3$

II. $5y^2 - 28y + 15 = 0$

$5y^2 - 25y - 3y + 15 = 0$

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

$y = 5, 3/5$

∴ No relation

S27. Ans.(a)

Sol. I. $2(x^2 - 6x + 9) = x - 3$

$2x^2 - 12x + 18 - x + 3 = 0$

$2x^2 - 13x + 21 = 0$

$2x^2 - 6x - 7x + 21 = 0$

$2x(x - 3) - 7(x - 3) = 0$

$x = 3, \frac{7}{2}$

II. $5y^2 + 6y + 1 = 0$

$5y^2 + 5y + y + 1 = 0$

$5y(y + 1) + 1(y + 1) = 0$

$y = -1, -\frac{1}{5}$

$x > y$

**S28. Ans.(e)**

Sol. I. $7x^2 + 61x + 40 = 0$

$7x^2 + 56x + 5x + 40 = 0$

$7x(x + 8) + 5(x + 8) = 0$

$x = -8, -\frac{5}{7}$

II. $5y^2 - 13y - 28 = 0$

$5y^2 - 20y + 7y - 28 = 0$

$5y(y - 4) + 7(y - 4) = 0$

$y = 4, -\frac{7}{5}$

∴ No relation

S29. Ans.(d)

Sol. I. $3x^2 - 4x - 32 = 0$

$\Rightarrow 3x^2 - 12x + 8x - 32 = 0$

$\Rightarrow 3x(x - 4) + 8(x - 4) = 0$

$\Rightarrow (x - 4)(3x + 8) = 0$

$\Rightarrow x = 4, -8/3$

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

S30. Ans.(c)

$$\begin{aligned} \text{Sol. I. } & x^2 - 4x - 60 = 0 \\ \Rightarrow & x^2 - 10x + 6x - 60 = 0 \\ \Rightarrow & x(x - 10) + 6(x - 10) = 0 \\ \Rightarrow & (x - 10)(x + 6) = 0 \\ \Rightarrow & x = 10, -6 \end{aligned}$$

$$\begin{aligned} \text{II. } & y^2 - 26y + 165 = 0 \\ & y^2 - 15y - 11y + 165 = 0 \\ \Rightarrow & y(y - 15) - 11(y - 15) = 0 \\ & (y - 15)(y - 11) = 0 \\ & y = 15, 11 \\ & y > x \end{aligned}$$



TEST SERIES

Bilingual



**SBI PO 2020
PRE + MAINS**

**Complete Topic-Wise
Test Series**

2500+ Questions

BOOKS



Visit: publications.adda247.com & store.adda247.com
 For any information, mail us at publications@adda247.com