SEBI Grade A Quantitative Aptitude (Solutions)

S1. Ans (c)

Sol. 4.8% of $6000 + 3.3\%$ of $5000 - 2.1\%$ of $? = 432$

$\frac{4.8}{100} \times 6000 + \frac{3.3}{100} \times 5000 - \frac{2.1}{100} \times ? = 432$

$? = \frac{(288+165-432)}{2.1} \times 100$

$?=1000$

S2. Ans (d)

Sol.

$\sqrt{\sqrt{1156} + \sqrt{7569}} = ?$

$\sqrt{34 + 87} = ?$

$?=\sqrt{121} = 11$

S3. Ans (a)

Sol. $\sqrt{47089} + \sqrt{470.89} + \sqrt{4.7089} = ?$

$217+21.7+2.17 = ?$

$240.87 = ?$

S4. Ans (e)

Sol. 12.5% of $512 + \frac{100}{6}\% \; of \; 432 - ?^2 = 100$

$\frac{1}{8} \times 512 + \frac{1}{6} \times 432 - ?^2 = 100$

$64+72-?^2 = 100$

$?^2 = 36$

$?=\pm 6$

So, $? = 6$

S5. Ans (b)

Sol. $1\frac{10}{13} \times 3\frac{3}{23} \times 5\frac{6}{17} \times \frac{17}{36} = ?$

$\frac{23}{13} \times \frac{72}{23} \times \frac{91}{17} \times \frac{17}{36} = ?$

$?=14$

S6. Ans (c)

Sol. Let cost price of the article be Rs $100x$.

ATQ

$100x \times \frac{140}{100} \times \frac{85}{100} - 100x = 304$

$19x = 304$

$x = 16$

So, selling price of the article $=100x \times \frac{140}{100} \times \frac{85}{100} = 119x = $ Rs 1904

S7. Ans (d)

Sol. Let present age of Deepak, Sanjay and Harish be x, y and z years respectively.

ATQ,

$\Rightarrow \frac{x-4}{y-4} = \frac{3}{4}$

$4x - 3y = 4 \quad \ldots\ldots(i)$

$\Rightarrow \quad x + y + z = 26 \times 3 = 78 \quad \ldots\ldots(ii)$

$\Rightarrow \quad z = y - 11 \quad \ldots\ldots(iii)$

From (i), (ii) and (iii)

$x = 25, y = 32, z = 21$

So, present age of Sanjay $= y = 32\ years$

S8. Ans (d)

Sol. Required no. $= \frac{5! \times 2!}{2!} = 5!$

$= 120$

S9. Ans (a)

Sol. Quantity of sugar in mixture initially $= 700 \times \frac{60}{100} = 420\ gram$

Let sugar added in the solution be x gram.

ATQ

$\frac{420+x}{700+x} = \frac{80}{100}$

$2100 + 5x = 2800 + 4x$

$x = 700\ gram$

S10. Ans.(e)

Sol. Ratio of profit share of Hemant and Manoj

= 8000 × 8 : 5000 × 12

= 64 : 60

= 16 : 15

Let profit share of Manoj is 15x

Total profit = $\frac{2700}{15x} \times 31x \times \frac{100}{90}$

= Rs. 6200

S11. Ans(b)

Sol. Let total no. of article manufactured by company C and E are m and 2m respectively

Required ratio = $\frac{\left(2m \times \frac{13.6}{100}\right)}{m \times \frac{6.8}{100}} = 4:1$

S12. Ans(b)

Sol. Let total article manufactured in each company = 100m

Non-defective article manufactured in company D = $100m \times \frac{96}{100} = 96m$

Non-defective article manufactured in company B = $100m \times \frac{88}{100} = 88m$

Required percentage = $\frac{96m-88m}{88m} \times 100 = 9\frac{1}{11}\%$

S13. Ans(b)

Sol. Total no. of article manufactured by company A = $\frac{96}{8} \times 100 = 1200$

S14. Ans(c)

Sol. Let total no. of article manufactured by company C and company D are c and d respectively.

ATQ

$\frac{6.8\% \times c}{4\% \times d} = \frac{2}{3}$

$\frac{c}{d} = \frac{2}{3} \times \frac{40}{68}$

c : d = 20 : 51

S15. Ans(a)

Sol. Non-defective article manufactured by company A = $\frac{200}{7-6} \times 7 \times \frac{92}{100} = 1288$

S16. Ans.(e)

Sol. I. $5x^2 + 13x - 6 = 0$

$5x^2 + 15x - 2x - 6 = 0$

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

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

II. $2y^2 + 13y - 7 = 0$

$2y^2 + 14y - y - 7 = 0$

$2y (y + 7) - 1 (y + 7) = 0$

$y = -7, \frac{1}{2}$

No relation

S17. Ans.(c)

Sol. I. $4x + 3y = 4$ ...(i)

II. $6x + 5y = 8$ ...(ii)

Multiplying (i) by 5 and (ii) by 3 & subtracting (ii) from (i), we get

x = –2

put x=-2 in (i), we get

y = 4

y > x

S18. Ans.(a)

Sol.

I. $x^2 - 19x + 88 = 0$

$x^2 - 11x - 8x + 88 = 0$

$x(x - 11) - 8(x - 11) = 0$

$x = 8, 11$

II. $y^2 + y - 56 = 0$

$y^2 + 8y - 7y - 56 = 0$

$y(y + 8) - 7(y + 8) = 0$

$y = 7, -8$

$x > y$

S19. Ans(b)

Sol.

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

$x^2 + 3x - 2x - 6 = 0$

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

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

$x = -3, 2$

II. $y^2 + 7y + 12 = 0$

$y^2 + 4y + 3y + 12 = 0$

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

$y = -3, -4$

So, $x \geq y$

S20. Ans(a)

Sol.

I. $2x^2 - 17x + 35 = 0$

$2x^2 - 10x - 7x + 35 = 0$

$2x(x - 5) - 7(x - 5) = 0$

$(2x - 7)(x - 5) = 0$

$x = \frac{7}{2}, 5$

II. $4y^2 - 19y + 21 = 0$

$4y^2 - 12y - 7y + 21 = 0$

$4y(y - 3) - 7(y - 3) = 0$

$(4y - 7)(y - 3) = 0$

$y = \frac{7}{4}, 3$

So, $x > y$

S21. Ans.(d)

Sol. The wrong no. is 221

The series is $3 + 2^2 = 7$

$7 + 4^2 = 23$

$23 + 6^2 = 59$

$59 + 8^2 = 123$

$123 + 10^2 = 223$

$223 + 12^2 = 367$

So, there should be 223 instead of 221.

S22. Ans.(e)

Sol. The wrong no. is 10532.

The series is $8 \times 0.5 + 1 = 5$

$5 \times 1 + 2 = 7$

$7 \times 2 + 4 = 18$

$18 \times 4 + 8 = 80$

$80 \times 8 + 16 = 656$

$656 \times 16 + 32 = 10528$

So, there should be 10528 instead of 10532.

S23. Ans.(b)

Sol. Wrong number = 96

Pattern of series –

$56 + 14 = 70$

$70 + 28 = 98$

$98 + 56 = 154$

$154 + 112 = 266$

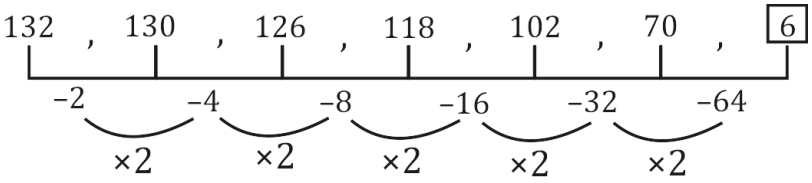
$266 + 224 = 490$

$490 + 448 = 938$

So, there should be 98 in place of 96.

S24. Ans.(c)

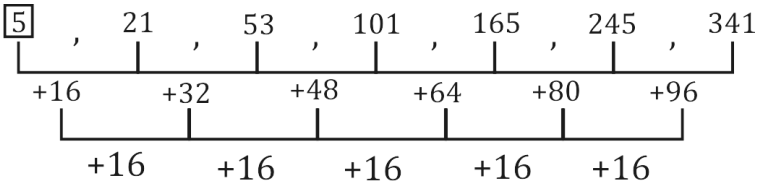
Sol. The wrong no. is 8.



So, there should be 6 instead of 8.

S25. Ans.(b)

Sol. The wrong no. is 7.



So, there should be 5 instead of 7.

S26. Ans.(d)

Sol. Let present age of Anshu and her mother be x & y years respectively.

$\therefore \frac{x}{y} = \frac{1}{2}$

and $\frac{x+6}{y+6} = \frac{11}{20}$

on solving, $x = 27$ and $y = 54$

$\therefore$ Required ratio $= \frac{18}{45} = \frac{2}{5}$

S27. Ans.(b)

Sol. Required number of words $= \frac{4! \times 7!}{2} = 60480$

S28. Ans.(c)

Sol. Principal $= \frac{\text{SI} \times 100}{\text{Time} \times \text{Rate}}$

$\therefore \frac{240 \times 100}{5 \times 6} = \text{Rs } 800$

S29. Ans.(e)

Sol. Speed of a boat in still water $= \frac{1}{2}(9 + 3) = 6$ km/h

S30. Ans.(b)

Sol. Let the distance travelled on foot be x km.

Then, $\frac{x}{3} + \frac{(30-x)}{5} = 8$

Or, $5x + 3(30 - x) = 120$

$\therefore x = 15$ km

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