

**IBPS PO PRE (quantitative aptitude) Memory Based paper by**
**(Solutions)**

S36. Ans.(b)

Sol.

Required ratio

$$\begin{aligned}
 &= \frac{\frac{10}{100} \times 400 + \frac{10}{100} \times 250}{\frac{8}{100} \times 500 + \frac{10}{100} \times 360} \\
 &= 65 : 76
 \end{aligned}$$

S37. Ans.(a)

Sol.

Required average

$$\begin{aligned}
 &= \frac{\frac{8}{100} \times 500 + \frac{6}{100} \times 400 + \frac{10}{100} \times 360 + \frac{12}{100} \times 250}{4} \\
 &= \frac{130}{4} = \frac{65}{2} = 32\frac{1}{2}
 \end{aligned}$$

S38. Ans.(c)

Sol.

Students participating in dance from Class VII

$$= \frac{60}{100} \times 400 = 40$$

Students participating in play from class IX

$$= \frac{12}{100} \times 250 = 30$$

Required percentage

$$= \frac{10}{30} \times 100 = \frac{100}{3} \% = 33\frac{1}{3} \%$$

S39. Ans.(d)

Sol.

Students who don't participate in dance and play from class VI

$$= 500 - (15\% + 8\%) \text{ of } 500$$

$$= 500 - \frac{23}{100} \times 500$$

$$= 500 - 115$$

$$= 385$$

Students who do not participate in dance and play in class IX

$$= 250 - (10\% + 12\%) \times 250$$

$$= 250 - 55$$

$$= 195$$

Required sum = 195 + 385

$$= 580$$

S40. Ans.(a)

Sol.

Students who participate only in dance from class VI

$$= \frac{15}{100} \times 500 - \frac{20}{100} \times \frac{15}{100} \times 500$$

$$= 75 - \frac{1}{5} \times 75$$

$$= 60$$

Students who participate only in play from class VI

$$= \frac{8}{100} \times 500 - 15$$

$$= 40 - 15$$

$$= 25$$

Required ratio = 60 : 25

$$= 12 : 5$$

S41. Ans.(d)

Sol.

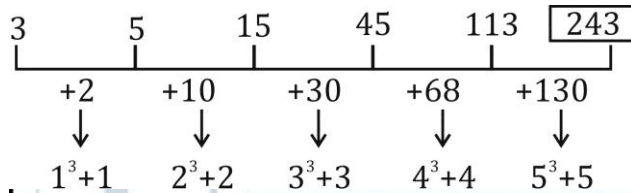
Required ratio

$$= \frac{\frac{10}{100} \times 400}{\frac{12}{100} \times 250} \times 100$$

$$= \frac{10 \times 400}{12 \times 250} \times 100 = 133\frac{1}{3}\%$$

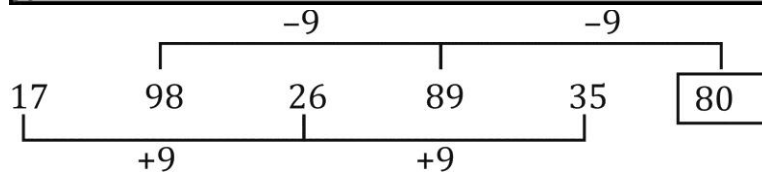
S42. Ans.(d)

Sol.



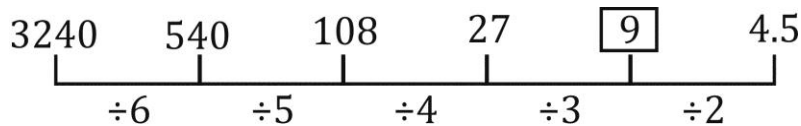
S43. Ans.(c)

Sol.



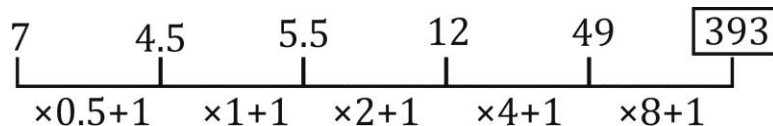
S44. Ans.(c)

Sol.



S45. Ans.(a)

Sol.



S46. Ans.(d)

Sol.

|              |              |              |              |              |      |
|--------------|--------------|--------------|--------------|--------------|------|
| 2            | 17           | 89           | 359          | 1079         | 2159 |
|              |              |              |              |              |      |
| $\times 6+5$ | $\times 5+4$ | $\times 4+3$ | $\times 3+2$ | $\times 2+1$ |      |

S42. Ans.(b)

Sol.

(i)  $x^2 - 3x - 2x + 6 = 0$

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

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

$$x = 2, 3$$

(ii)  $3y^2 + 3y - 18 = 0$

$$3y^2 + 9y - 6y - 18 = 0$$

$$3y(y + 3) - 6(y + 3) = 0$$

$$y = -3, 2$$

$x \geq y$

S43. Ans.(a)

Sol.

(i)  $x^2 - 11x + 30 = 0$

$$x^2 - 6x - 5x + 30 = 0$$

$$x(x - 6) - 5(x - 6) = 0$$

$$(x - 6)(x - 5) = 0$$

$$x = 6, 5$$

(ii)  $y^2 + y - 20 = 0$

$$y^2 + 5y - 4y - 20 = 0$$

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

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

$$y = +4, -5 ; x > y$$

S44. Ans.(d)

Sol.

$$(i) 2x^2 + 2x - 4 = 0$$

$$2x^2 + 4x - 2x - 4 = 0$$

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

$$x = -2, 1$$

$$(ii) y^2 - 5y + 4 = 0$$

$$y^2 - 4y - y + 4 = 0$$

$$y(y - 4) - 1(y - 4) = 0$$

$$y = 4, 1$$

$$x \leq y$$

S45. Ans.(e)

Sol.

$$(i) x^2 + 6x - 16 = 0$$

$$x^2 + 8x - 2x - 16 = 0$$

$$x(x + 8) - 2(x + 8) = 0$$

$$(x - 2)(x + 8) = 0$$

$$x = 2, -8$$

$$(ii) y^2 - 6y + 5 = 0$$

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

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

$$y = 5, 1$$

No relation can be established

S46. Ans.(c)

Sol.

$$(i) x^2 - 4 = 0$$

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

$$x = +2, -2$$

$$(ii) y^2 - 9y + 20 = 0$$

$$y^2 - 5y - 4y + 20 = 0$$

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

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

$$y = 4, 5$$

$$y > x$$

S47. Ans.(b)

Sol.

$$\approx (9 - 5) \times (11 + 4) = ?$$

$$\approx ? = 60$$

S48. Ans.(a)

Sol.

$$\approx 55 - \frac{345}{23} = 2 \times ?$$

$$\approx ? = 20$$

S49. Ans.(b)

Sol.

$$\approx \sqrt{\frac{3100}{62}} + 14$$

$$\approx \sqrt{50 + 14}$$

$$\approx 8$$

S50. Ans.(d)

Sol.

$$\approx (112 \times 5) \div 14 = 11 + ?$$

$$\approx 40 - 11 = ?$$

$$\approx ? = 29$$

S51. Ans.(a)

Sol.

$$\approx \frac{25}{100} \times \frac{84}{7} = ?$$

$$\approx ? = 3$$

S52. Ans.(d)

Sol.

$$\approx \left(184 - \frac{29}{5}\right) \times 30 = ?$$

$$\approx \left(\frac{184 \times 5 - 29}{5}\right) \times 30 = ?$$

$$\approx \frac{891}{5} \times 30$$

$$\approx ? = 5346$$

$$\approx 5340$$

S53. Ans.(c)

Sol.

At present sum of age = 76

After 7 years sum of age will be

$$7x + 6x + 5x + 8x = 76 + 7 \times 4$$

$$26x = 76 + 28$$

$$x = \frac{104}{26}$$

$$x = 4$$

$$C's \text{ present age} = 5x - 7$$

$$= 20 - 7$$

$$= 13$$

S54. Ans.(b)

Sol.

Sum of length of train = 660

$$l_1 + l_2 = 660$$

$$S_A : S_B = 5 : 8$$

Let speed be  $5x$  and  $8x$

And time taken to cross pole be  $4y, 3y$

So,

$$5x \times 4y + 8x \times 3y = 660$$

$$44xy = 660$$

$$xy = 15$$

$$l_1 - l_2 = 24xy - 20xy$$

$$= 4xy$$

$$\Rightarrow 60$$

S55. Ans.(a)

Sol.

$$40\% \text{ of new mixture} = 20L$$

$$100\% \text{ of new mixture} = \frac{20}{40} \times 100$$

$$= 50L$$

$$28 + x + 8 + x = 50$$

$$2x = 50 - 36$$

$$x = 7L$$

S56. Ans.(d)

sol.

Time taken by A in completing  $\frac{1}{3}$  of work

$$= 24 \times \frac{1}{3} = 8 \text{ days}$$

8 day = time taken by B in completing  $\frac{1}{2}$  of work

B alone will complete the work = 16 days

Required time

$$= \frac{16 \times 24}{40} = \frac{48}{5} \text{ days}$$

S57. Ans.(e)

Sol.

$$MP = 1600 + CP \quad \dots(i)$$

$$MP - 500 = \frac{125}{100} \times CP$$

$$MP = \frac{5}{4} CP + 500$$

$$4MP = 5CP + 2000 \quad \dots(ii)$$

Solving (i) and (ii)

$$CP = 4400$$

$$\text{Required selling price} = \frac{130}{100} \times 4400$$

$$= 5720$$

S58. Ans.(a)

Sol.

Let  $d=4x$  and  $h = 3x$

Total surface area of right circular cylinder is  $2\pi r(r+h)$

[Where  $r \rightarrow$  radius]  
 $h \rightarrow$  height]

$$\therefore 2\pi \left[ 2x(2x + 3x) - \frac{3x}{2} \left( \frac{3x}{2} + 3x \right) \right] = 318.5\pi$$

$$2 [10x^2 - 6.75x^2] = 318.5$$

$$6.5x^2 = 318.5$$

$$x^2 = 49$$

$$x = \pm 7$$

$$\therefore \text{radius } (r) = 14$$

$$\text{height } (h) = 21$$

$\therefore$  Circumference of base of cylinder

$$= 2\pi r$$

$$= 28\pi \text{ cm}^2$$

S59. Ans.(b)

Sol.

Let digit be xyz

So,

According to question

$$y = 3$$

$$(100z - 10y - x) - (100x - 10y - z) = 396x$$

$$99z - 99x = 396$$

$$z - x = 4$$

And it is given that

$$z + x = 14 \quad \dots(ii)$$

Solving (i) & (ii)

$$z = 9$$

$$x = 5$$

so, number is = 539

S60. Ans.(b)

Sol.

Let 4 consecutive even number is

$x, x+2, x+4, x+6$

$$\frac{1}{x} + \frac{1}{x+2} = \frac{11}{60}$$

$$\frac{x+2+x}{x(x+2)} = \frac{11}{60}$$

$$\frac{2(x+1)}{x^2+2x} = \frac{11}{60}$$

$$120x + 120 = 11x^2 + 22x$$

$$11x^2 - 98x - 120 = 0$$

$$x = \frac{-24}{22}, 10$$

$$= -\frac{12}{11}, 10$$

∴ third number is 14 and **reciprocal** 3<sup>rd</sup> highest no. is  $\frac{1}{14}$ .

S61. Ans.(d)

Sol.

Profit will be shared in ratio

$$= 12 \times 6 : 8 \times \left(\frac{9}{8} \times 8\right) : 9 \times 12$$

$$= 12 \times 6 : 8 \times 9 : 9 \times 12$$

$$= 2 : 2 : 3$$

$$C's \text{ profit} = \frac{16750}{2} \times 3 = 25125$$

S62. Ans.(a)

Sol.

$$\text{Downstream speed} = \frac{18}{3} = 6 \text{ km/hr}$$

or  $x + y = 6$  (when  $x \rightarrow$  speed of boat in Still water,  $y \rightarrow$  speed of current)

$$\text{speed of current} = \frac{1}{3} \times 6 = 2 \text{ km/hr}$$

Speed of boat in still water = 4 km/hr

$$\text{Required time} = \frac{100}{(4 - 2)} = 50 \text{ hour}$$

S63. Ans.(b)

Sol

Let M.P. =  $x$

And cost price and selling price be  $5y$  and  $6y$

So,

$$80\%x = 6y$$

$$x = \frac{30y}{4}$$

$$x = 7.5y$$

$$\text{Required percentage} = \frac{7.5y - 5y}{5y} \times 100$$

$$= \frac{2.5y}{5y} \times 100$$

$$= 50\%$$

S64. Ans.(d)

Sol.

Total expenditure = 80% of salary

Expenditure excluding clothing

$$= 80\% - \frac{25}{100} \times 80\%$$

$$= 60\% \text{ of savings}$$

$$\text{Ramesh savings} = \frac{3600}{60} \times 20 = 1200 \text{ Rs}$$

S65. Ans.(d)

Sol

Total no. of hats sold on Wednesday

$$= 64 + 48 = 112$$

Total no. of hats sold on Tuesday



$$= 60 + 36 = 96$$

$$\text{Desired Percentage} = \frac{112-96}{96} \times 100$$

$$= 16\frac{2}{3}\%$$

S66. Ans.(b)

Sol.

$$\text{No. of hats sold on Friday by A after increase} = 56 \times \frac{8}{7}$$

$$= 64$$

Average no. of hats sold on Monday, Wednesday and Friday by A

$$= \frac{46 + 64 + 64}{3}$$

$$= \frac{174}{3} = 58$$

S67. Ans.(e)

Sol.

No. of hats sold on Saturday

$$= 112 \times \frac{15}{14} = 120$$

S68. Ans.(c)

Sol.

No. of hats sold on Monday & Wednesday by B

$$= 34 + 48 = 82$$

No. of hats sold on Friday by A and B together

$$= 56 + 40 = 96$$

$$\text{Desired Difference} = 96 - 82 = 14$$

S69. Ans.(a)

Sol.

Hats sold on Thursday that are not defected

$$= \frac{20}{100} \times 60 + \frac{25}{100} \times 52$$

$$12 + 13 = 25$$

S70. Ans.(b)

Sol.

No. of hats sold on Tuesday & Friday by A

$$= 36 + 56 = 92$$

No. of hats sold on Tuesday & Friday by B

$$= 60 + 40 = 100$$

$$\text{Desired Ratio} = 92 : 100 = 23 : 25$$