

RRB PO PRE MEMORY BASED HELD ON 09/09/2017 QUANTITATIVE APTITUDE (Solutions)

S41. Ans.(c)

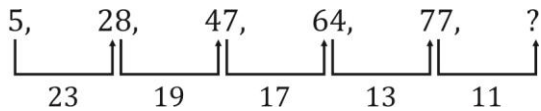
Sol.

Series is $\div 2-1, \div 2-1$

$$(22 \div 2) - 1 = 10$$

S42. Ans.(d)

Sol.



Adding prime No.

$$77 + 11 = 88$$

S43. Ans.(a)

Sol.

$$(7+1) \times 0.5 = 4$$

$$(4+1) \times 1 = 5$$

$$(5+1) \times 2 = 12$$

$$(12+1) \times 4 = 52$$

$$(52+1) \times 8 = 424$$

S44. Ans.(c)

Sol.

$$(6 \times 1) - 2 = 4$$

$$(4 \times 2) - 3 = 5$$

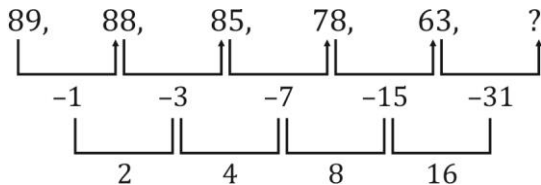
$$(5 \times 3) - 4 = 11$$

$$(11 \times 4) - 5 = 39$$

$$(39 \times 5) - 6 = 189$$

S45. Ans.(d)

Sol.



$$63 - 31 = 32$$

S46. Ans.(a)

Sol.

Let a consecutive odd numbers = $x - 2, x$ and $x + 2$

and consecutive even numbers = $y - 2, y, y + 2$

$$\text{So, } y - 2 = 9 + x + 2$$

$$y - x = 13 \quad \dots(i)$$

and

$$(x)^2 + 507 = (y)^2$$

$$y^2 - x^2 = 507$$

$$(x + y)(y - x) = 507$$

$$(x + y) = \frac{507}{13} \Rightarrow x + y = 39 \dots (i)$$

Solving (i) and (ii) $y = 26$ and $x = 13$

so smallest odd numbers = $x - 2$

$$= 13 - 2 = 11$$

S47. Ans.(c)

Sol.

A complete work in 15 days.

B will complete work in 10 days.

They together will complete whole work

$$= \frac{15 \times 10}{25} = 6 \text{ days}$$

A and B together worked for = $6 \times \frac{2}{3} = 4$ days

S48. Ans.(d)

Sol.

$$\text{Speed of downstream} = \frac{9.6}{36} \text{ km/min} = 16 \text{ km/hr}$$

Speed of current = 1.6 km/hr

Let speed of man in still water = x

$$\text{So, } x = 16 - 1.6 = 14.4 \text{ km/hr}$$

$$\text{Required time in upstream} = \frac{19.2}{14.4 - 1.6} = 1.5 \text{ hours}$$

S49. Ans.(b)

Sol.

Ratio of profit of A and B = 1200 : 750

$$= 24 : 15 = 8 : 5$$

So,

$$\frac{1200 \times 12}{1500 \times y} = \frac{8}{5}$$

$$y = 6 \text{ months}$$

$$x = 6 \text{ month}$$

S50. Ans.(d)

Sol.

$$\frac{2\pi rh}{2\pi r(r + h)} = \frac{3}{5}$$

$$5h = 3r + 3h$$

$$2h = 3r$$

and

$$2\pi rh = 1848$$

$$2 \times \frac{22}{7} \times \frac{2}{3} h \times h = 1848$$

$$h = 21$$

S51. Ans.(c)

Sol.

Let male who purchased book from Store E = x

Then

$$x + x + 21 = \frac{22}{100} \times 550$$

$$x = 50$$

$$\text{Required number of females} = 50 + 21 = 71$$

S52. Ans.(b)

Sol.

$$\frac{18}{5} = \frac{x}{32}$$

$$x = \frac{18 \times 32}{5}$$

$$= 18 \times 6.4$$

$$= 115.2$$

S53. Ans.(e)

Sol.

$$\text{Total books of store XYZ} = \frac{120}{100} \times 550 = 660$$

Total books sold by store A and B

$$= (18\% + 12\%) \text{ of } 660$$

$$= 198$$

S54. Ans.(a)

Sol.

$$\text{Required ratio} = (18\% + 16\%) : (32\% + 22\%)$$

$$= 34 : 54$$

$$= 17 : 27$$

S55. Ans.(c)

Sol.

Required difference

$$= \frac{1}{2} [(32\% + 16\%) - (18\% + 22\%)] 550$$

$$= \frac{1}{2} \times 8\% \text{ of } 550$$

$$= 4\% \text{ of } 550$$

$$= 22$$

S56. Ans.(d)

Sol.

$$\text{I. } x^2 + 5x + 4x + 20 = 0$$

$$x(x + 5) + 4(x + 5) = 0$$

$$(x + 4)(x + 5) = 0$$

$$x = -4, -5$$

$$\text{II. } y^2 = 16$$

$$y = \pm 4$$

$$\therefore x \leq y$$

Short trick

$$x^2 + 9x + 20 = 0$$

$$5 \times 4 \Rightarrow 5 + 4 = 9$$

S57. Ans.(a)

Sol.

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

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

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

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

$x = 3, 4$

II. $3y^2 - 11y + 10 = 0$

$3y^2 - 6y - 5y + 10 = 0$

$3y(y - 2) - 5(y - 2) = 0$

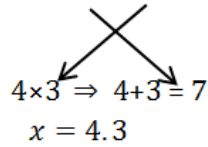
$(3y - 5)(y - 2) = 0$

$y = 2, \frac{5}{3}$

$\therefore x > y$

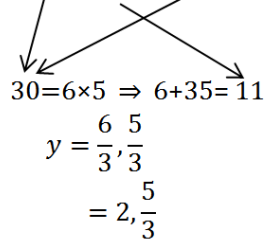
Short trick

$x^2 + 7x + 12 = 0$



Short trick

$3y^2 - 11y + 10 = 0$



S58. Ans.(c)

Sol.

I. $x^2 - 8x + 15 = 0$

$x^2 - 3x - 5x + 15 = 0$

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

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

$x = 3, 5$

II. $y^2 - 12y + 36 = 0$

$y^2 - 6y - 6y + 36 = 0$

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

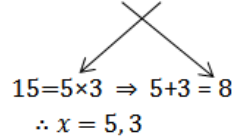
$(y - 6)(y - 6) = 0$

$y = 6$

$\therefore x < y$

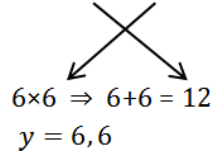
Short trick

$x^2 - 8x + 15$



Short trick

$y^2 - 12y + 36 = 0$



S59. Ans.(e)

Sol.

I. $2x^2 + 9x + 7 = 0$

$2x^2 + 7x + 2x + 7 = 0$

$x(2x + 7) + 1(2x + 7) = 0$

$(x + 1)(2x + 7) = 0$

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

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

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

$y(y + 2) + 2(y + 2) = 0$

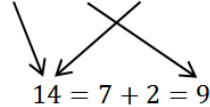
$(y + 2)(y + 2) = 0$

$y = -2, -2$

\therefore No relation.

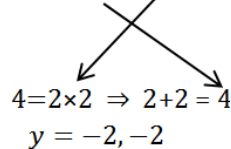
Short trick

$2x^2 + 9x + 7 = 0$



Short trick

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



S60. Ans.(d)

Sol.

I. $2x^2 + 15x + 28 = 0$

$2x^2 + 8x + 7x + 28 = 0$

$2x(x + 4) + 7(x + 4) = 0$

$$(2x + 7)(x + 4) = 0$$

$$x = \left(-\frac{7}{2}\right), -4$$

$$\text{II. } 2y^2 + 13y + 21 = 0$$

$$2y^2 + 7y + 6y + 21 = 0$$

$$y(2y + 7) + 3(2y + 7) = 0$$

$$(y + 3)(2y + 7) = 0$$

$$y = -3, \frac{-7}{2}$$

$$x \leq y$$

S61. Ans.(d)

Sol.

In 16 second distance covered by both

$$= 16 \times 25 = 400 \text{ m}$$

So length of A = 400 - 205

$$= 195$$

Required difference = 10 m

S62. Ans.(c)

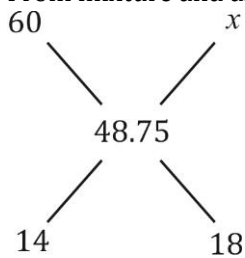
Sol.

Let cost price of mixture = y

$$\text{So, } \frac{4}{3}y = 65$$

$$y = 48.75$$

From mixture and allegation



$$\frac{7}{9} = \frac{x - 48.75}{48.75 - 60}$$

$$341.25 - 420 = 9x - 438.75$$

$$360 = 9x$$

$$x = 40 \text{ Rs./kg}$$

S63. Ans.(a)

Sol.

Let B's age = x

So A's age = $x - 3$

$$\frac{x - 5}{x + 1} = \frac{3}{4}$$

$$x = 23$$

A's age = 23 - 3 = 20 years

S64. Ans.(d)

Sol.

Probability that no ball is green

$$\frac{{}^{10}C_1 \times {}^9C_1}{15 \times 14} = \frac{90}{15 \times 14} = \frac{3}{7}$$

$$\text{Required probability} = 1 - \frac{4}{7} = \frac{3}{7}$$

S65. Ans.(a)

Sol.

Let C.P. of A = x

So C.P. of B = $200 + x$

According to question

$$\frac{\frac{110}{100}(x + 200)}{\frac{60}{100}x} = \frac{11}{4} \Rightarrow \frac{x + 200}{6x} = \frac{1}{4}$$

$$x = 400$$

If it is sold at 20% loss then selling price

$$= \frac{80}{100} \times 400 = 320$$

S66. Ans.(b)

Sol.

No. of students failed in Economics in year 2002

$$= \frac{(100 - 45)}{100} \times 3800 = 2090$$

No. of students failed in Economics in year 2003

$$= \frac{(100 - 60)}{100} \times 2600 = 1040$$

$$\text{Required average} = \frac{2090 + 1040}{2} = 1565$$

$$\text{Short trick} = \frac{55 \times 38 + 40 \times 26}{2} = 1565$$

S67. Ans.(c)

Sol.

No. of students failed in Statistics in year 2003

$$= \frac{100 - 35}{100} \times 2500 = 1625$$

No. of students failed in Economics in year 2003

$$= \frac{100 - 60}{100} \times 2600 = 1040$$

$$\text{Required \%} = \frac{1625}{1040} \times 100 = 156.25\%$$

$$\text{Short trick} = \frac{65 \times 25}{40 \times 26} \times 100 = 156.25\%$$

S68. Ans.(d)

Sol.

Total no. of students appeared in Economics from 2002 to 2004

$$= 3800 + 2600 + 4800 = 11200$$

Total no. of students appeared in Statistics from 2003 to 2005

$$= 2500 + 3200 + 4800 = 10500$$

Required ratio = 11,200 : 10,500

$$= 16 : 15$$

S69. Ans. (b)

Sol.

Total no. of students passed in Statistics in year 2002

$$= \frac{55}{100} \times 2700$$

$$= 1485$$

Total no. of students failed in Economics in year 2005

$$= \frac{50}{100} \times 2200$$

$$= 1100$$

Required difference = 1485 - 1100

$$= 385$$

$$\text{Short trick} = 55 \times 27 - 50 \times 22 = 385$$

S70. Ans.(e)

Sol.

Average no. of students appeared in Economics from year 2001 to 2004 together

$$= \frac{4200 + 3800 + 2600 + 4800}{4}$$

$$= \frac{15400}{4} = 3850$$

S71. Ans.(e)

Sol.

$$\frac{?}{100} \times 750 = 450$$

$$? \approx 60$$

S72. Ans.(e)

Sol.

$$\frac{(1042+?)}{3.02} = 454$$

$$? = 320$$

S73. Ans.(a)

Sol.

$$\frac{310}{14} = \frac{625}{?}$$

$$? \approx 28$$

S74. Ans.(b)

Sol.

$$?^2 = 170$$

$$? \approx 13$$

S75. Ans.(c)

Sol.

$$\approx 64 \times 16 - 58$$

$$\approx 966$$

S76. Ans.(a)

Sol.

Total no. of males visited on Tuesday and Thursday = 140 + 150 = 290

Total no. of females visited on Monday and Friday = 170 + 130 = 300

Required ratio = 290: 300

= 29:30

S77. Ans.(a)

Sol.

Total no. of males and females together on Tuesday = $140 + 190 = 330$

Total no. of males and females together on Thursday = $150 + 110 = 260$

$$\text{Required \%} = \frac{330 - 260}{260} \times 100 = 26\frac{12}{13}\%$$

S78. Ans.(d)

Sol.

Total no. of females visited from Monday to Wednesday = $170 + 190 + 140 = 500$

Total no. of males visited from Wednesday to Friday = $180 + 150 + 120 = 450$

Required difference = $500 - 450 = 50$

S79. Ans.(b)

Sol.

On Saturday —

Total no. of males visited the place

$$= \frac{125}{100} \times 120 = 150$$

Total no. of females visited the place

$$= \frac{120}{100} \times 130 = 156$$

Required males and females = $150 + 156 = 306$

S80. Ans.(c)

Sol.

Total males and females visited the place on Monday and Tuesday together

$$= 160 + 140 + 170 + 190 = 660$$

Total males and females visited the place on Thursday and Friday together

$$= 150 + 120 + 110 + 130 = 510$$

Required no. of persons = $660 - 510 = 150$