

Quantitative Aptitude for RRB Group-D (Solutions)

S1. Ans.(c)

Sol.

Let C = 100

$$B = 100 \times \frac{25}{100} = 25$$

$$A = 25 \times \frac{20}{100} = 5$$

$$\text{Required \%} = \frac{5}{100} \times 100 \\ = 5\%$$

S2. Ans.(d)

Sol.

Let Price = 100

After 10% decrease

$$= 100 \times \frac{90}{100} = 90$$

Required %

$$= \frac{10}{90} \times 100$$

$$= 11\frac{1}{9}\%$$

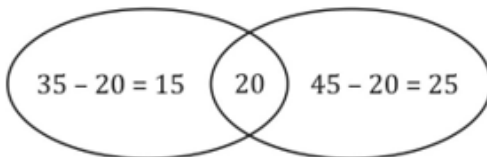


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S3. Ans.(d)

Sol.



$$\% \text{ passed} = 100 - (25 + 20 + 15) \\ = 100 - 60 = 40\%$$

S4. Ans.(c)

Sol.

Let B's salary = 100

$$A's \text{ salary} = 100 \times \frac{150}{100}$$

$$= 150$$

$$\text{Required \%} = \frac{50}{150} \times 100$$

$$= \frac{100}{3}$$

$$= 33\frac{1}{3}\%$$



S5. Ans.(c)

Sol.

Let he ate = x apples

No. of Apples he sold

$$= x + x \times \frac{40}{100}$$

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

$$\frac{7}{5}x = 70$$

$$x = 50$$

S6. Ans.(b)

Sol.

$$0.6\% = \frac{0.6}{100}$$

$$= 0.006$$

$$0.6 - 0.006 = 0.594$$

S7. Ans.(a)

Sol.

Let A's salary $\rightarrow 100$

Salary after 50% reduction

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

$$= 50$$

$$50\% \uparrow = 50 \times \frac{150}{100}$$

$$= 75$$

$$\text{Required \%} = \frac{25}{100} \times 100$$

$$= 25\%$$

S8. Ans.(b)

Sol.

Students $\rightarrow 720$

$$\text{Boys} = 720 \times \frac{7}{12}$$

$$= 420$$

$$\text{Girls} = 720 - 420 = 300$$

$$\frac{420}{300 + x} = \frac{1}{1}$$

$$420 = 300 + x$$

$$x = 120$$

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S9. Ans.(d)

Sol.

Mango's = 300

Distributed = 75

Left = 300 - 75

= 225

Required % = $\frac{225}{300} \times 100$

= 75%

S10. Ans.(b)

Sol.

$$\frac{35}{100} \times A = \frac{25}{100} \times B$$

$$7A = 5B$$

$$A : B = 5 : 7$$

S11. Ans.(c)

Sol.

Speed ratio $\rightarrow 45 : 60 \Rightarrow 3 : 4$

Time ratio $\Rightarrow 4 : 3$ [$S \propto \frac{1}{\text{time}}$ when distance is same]

(4 - 3) ratio $\rightarrow \frac{11}{2}$ hours

1 ratio $\rightarrow \frac{11}{2}$ hours

time taken by bus travelling at 45 km/hr

$$= 4 \times \frac{11}{2} = 22 \text{ hours}$$

$$\text{Distance} = 45 \times 22 = 990 \text{ km}$$

S12. Ans.(b)

Sol.

Let the speed of car be x km/hr

$$(x - 4) \times \frac{3}{60} = \frac{130}{1000}$$

$$30x - 120 = 78$$

$$30x = 198$$

$$x = 6.6 \text{ km/hr}$$

S13. Ans.(c)

Sol.

ATQ,

$$\text{Distance} = 80 \times 7$$

$$= 560 \text{ m}$$

S14. Ans.(c)

Sol.

$$\text{Distance} = 60 \times 15 = 900 \text{ km}$$

$$\text{Speed} = \frac{900}{12} = 75 \text{ km/hr}$$

S15. Ans.(c)

Sol.

$$\text{Distance} = 10 \times 42 = 420$$

$$\text{Speed} = 420/7 = 60 \text{ km/hr}$$

$$\text{Increase in speed} = 60 - 42 = 18 \text{ km/hr}$$

S16. Ans.(a)

Sol.

Train Car

$$240 \quad 210 = 8 \text{ h } 40 \text{ min.}$$

$$180 \quad 270 = 9 \text{ h}$$

To travel extra 60 km by car increase in time = 20 min

So, travel extra 240 km by car increase in time = 80 min

$$\therefore 450 \text{ km by car in} = 8 \text{ h } 40 \text{ min} + 80 \text{ min} = 10 \text{ h}$$

$$\text{Speed of car} = 450/10 = 45 \text{ km/h}$$

S17. Ans.(b)

Sol.

$$B \rightarrow 100 \text{ km/hr}$$

$$\text{Distance} = 150 + 250 = 400 \text{ m}$$

$$\frac{2}{60} = \frac{\frac{400}{1000}}{100 - x}$$

$$\frac{1}{3} = \frac{4}{100 - x}$$

$$100 - x = 12$$

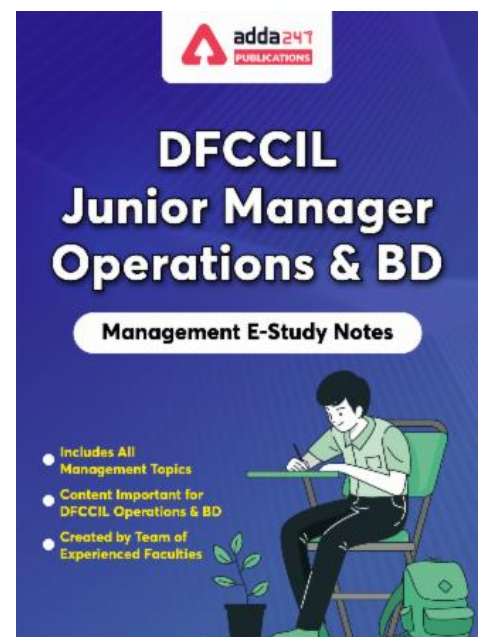
$$x = 88 \text{ km/hr}$$

S18. Ans.(b)

Sol.

ATQ,

$$\begin{aligned} \text{time} &= \frac{400}{5} \\ &= 80 \text{ seconds} \end{aligned}$$



S19. Ans.(a)

Sol.

Ratio of speed $\rightarrow 3 : 4$

Ratio of time $\rightarrow 4 : 3$

$(4 - 3)r \rightarrow 10$ minutes

$1r \rightarrow 10$ minutes

4 ratio $\rightarrow 40$ minutes

Distance of the multiplex

$$= 3 \times \frac{40}{60} = 2 \text{ km}$$

S20. Ans.(d)

Sol.

$$\frac{x}{12} + \frac{x}{9} = 2 \frac{20}{60}$$

$$\frac{x}{12} + \frac{x}{9} = \frac{7}{3}$$

$$\frac{3x + 4x}{36} = \frac{7}{3}$$

$$x = 12 \text{ km}$$

S21. Ans.(b)

Sol.

Price of 10 kg wheat $= 8 \times 10$

$\Rightarrow 80$ Rs.

Price of 15 kg wheat $= 10 \times 15$

$=$ Rs. 150

Price 25 kg wheat $= 80 + 150$

$\Rightarrow 230$

Average Price per kg

$$= \frac{230}{25} = 9.2 \text{ Rs.}$$

S22. Ans.(d)

Sol.

Mixture $\rightarrow 40$ liter

M:W $\rightarrow 90:10$

9:1

$$\text{Milk} = 40 \times \frac{9}{10} = 36 \text{ liters}$$

$$\text{Water} = 40 - 36 = 4 \text{ liters}$$

New Milk : Water $= 80 : 20$

$= 4 : 1$

$$\frac{36}{4+x} = \frac{4}{1}$$

$$36 = 16 + 4x$$

$$20 = 4x$$

$$x = 5 \text{ liters}$$

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S23. Ans.(b)

Sol.

Solution $\rightarrow$ 3 liters

Sugar = 60%, Water = 40%

$$\text{Sugar} = 3 \times \frac{60}{100} = 1.8 \text{ liters}$$

$$\text{Water} = 3 \times \frac{40}{100} = 1.2 \text{ liters}$$

New 1 liters of water is added.

Quantity of sugar in New solution = 1.8 liters

Total quantity of solution

$$= 3 + 1$$

$$= 4 \text{ liters}$$

$$\% \text{ of sugar} = \frac{1.8}{4} \times 100$$

$$= 45\%$$

S24. Ans.(a)

Sol.

$$\text{S.P of Mixture} = 68.20/\text{kg}$$

$$\text{C.P of Mixture} = 68.20 \times \frac{100}{110}$$

$$= 62 \text{ Rs./kg}$$

Using Alligation

$$\begin{array}{r} 60 \qquad 65 \\ \hline 62 \end{array}$$

$$\text{Ratio} \rightarrow 3 : 2$$



S25. Ans.(b)

Sol.

Wine : Water

$$3 : 1$$

Let Wine $\rightarrow$ 3

Water $\rightarrow$ 1

Let x quantity of Mixture is taken ratio of Wine & Water in the mixture taken out $\rightarrow$ 3 : 1

Wine in x quantity taken out

$$= x \times \frac{3}{4}$$

$$= \frac{3x}{4}$$

Water in x quantity of mixture taken out

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

Wine in new mixture

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

Water in new mixture

$$\Rightarrow 1 - \frac{1x}{4} + x$$

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

$$\frac{12 - 3x}{4 - x + 4x} = \frac{1}{1}$$

$$\frac{12 - 3x}{4 - x + 4x} = \frac{1}{1}$$

$$12 - 3x = 4 + 3x$$

$$6x = 8$$

$$x = \frac{4}{3}$$

Quantity taken out = $\frac{4}{3}$

$$\text{Fraction} = \frac{\frac{4}{3}}{\frac{4}{3}} = \frac{4}{3 \times 4}$$

$$= \frac{1}{3}$$

S26. Ans.(d)

Sol.

Using Alligation

Boys Girls

50 70

60

10 : 10

1 : 1

No. of Boys & Girls are equal

$$\text{Number of girls} = \frac{12500}{2}$$

$$= 6250$$

S27. Ans.(d)

Sol.

Original quantity = 81 liters

$$\text{Quantity taken out} = \frac{81}{3}$$

= 27 liters

Using formula

Final quantity

$$= \text{Original quantity} \left(1 - \frac{\text{Quantity taken out}}{\text{Original quantity}} \right)$$

n = number of times process repeated

Final quantity

$$= 81 \left(1 - \frac{27}{81} \right)^2$$



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GROUP D**

40 TOTAL TESTS

$$= 81 \times \left(\frac{2}{3}\right)^2$$

$$= 81 \times \frac{4}{9} = 36 \text{ liters}$$

In 81 liters

Quantity of Milk = 36 liters

Quantity of Water = 81 - 36

= 45 liters

Ratio of Milk & Water in New Mixture

⇒ 36 : 45

⇒ 4 : 5

S28. Ans.(d)

Sol.

Milk : Water

Original → 7 : 3 × 2

After adding water → 2 : 1 × 7

Ratio of Milk will remain same.

Milk : Water

⇒ 14 : 6

⇒ 14 : 7

(14 + 6) r = 80 liters

20r → 80 liters

1r → 4 liters

Ratio of water Added = (7 - 6)

= 1r

Water Added = 1 × 4

⇒ 4 liters

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S29. Ans.(c)

Sol.

Quantity of Milk in vessel A = 4/9

Quantity of Milk in vessel B = 5/6

Quantity of Milk in mixture = 5/9

Using Alligation

$$\frac{4}{9} \quad \frac{5}{6}$$

$$\frac{5}{9}$$

$$\frac{5}{6} - \frac{5}{9} : \frac{5}{9} - \frac{4}{9}$$

$$\frac{15-10}{18} : \frac{1}{9}$$

$$\frac{5}{18} : \frac{1}{9}$$

⇒ 5 : 2

S30. Ans.(b)

Sol.

Milk : Water

7 : 5

7 : 8

$(8 - 5)r \rightarrow 15$ liters

$3r \rightarrow 15$ liters

$1r \rightarrow 5$ liters

$8r \rightarrow 5 \times 8 = 40$ liters

Quantity of water = 40 liters

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