

Quantitative Aptitude for RRB NTPC (Solutions)

S1. Ans.(c)

Sol. Only 173 is a prime number

S2. Ans.(b)

Sol.

Atq,

$$4 + 2(2) = 8$$

$$\text{Now, } 8 + 2(3) = 14$$

S3. Ans.(a)

Sol.

$$\frac{48}{15} = 3 \text{ Remainder}$$

S4. Ans.(b)

Sol.

$$\text{Percentage of oxygen} = \frac{9.4}{20} \times 100\%$$

$$= 47\%$$

$$\text{Percentage of carbon} = 100 - (40 + 47)$$

$$= 13\%$$

S5. Ans.(c)

Sol.

$$\text{Required percentage} = \frac{50}{950} \times 100\%$$

$$= 5\frac{5}{19}\%$$

S6. Ans.(d)

Sol.

$$\frac{\ell+4}{b+4} = \frac{4}{3}$$

$$\Rightarrow 3\ell - 4b = 4 \quad \dots(i)$$

Also,

$$\frac{\ell-4}{b-4} = \frac{2}{1}$$

$$\Rightarrow \ell - 2b = -4 \quad \dots(ii)$$

From (i) and (ii)

$$\ell = 12 \text{ and } b = 8$$

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S7. Ans.(b)

Sol.

$$\text{Average charge} = \frac{2 \times 150 + 5 \times 75 + 9 \times 25}{16}$$
$$= \text{Rs } 56.25$$

S8. Ans.(c)

Sol.

$$\text{remaining days} = 66 - 14 = 52$$

Atq,

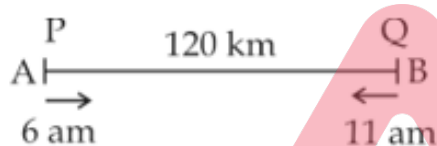
$$M_1 D_1 = M_2 D_2$$

$$\Rightarrow 2000 \times 52 = (2000 + x) \times 20$$

$$\Rightarrow x = 3200$$

S9. Ans.(d)

Sol.



$$\text{B's speed} = x$$

$$\text{Then A's speed} = \frac{3}{2}x$$

They cross at 8 p.m.

So, A travelled for 14 hours

And B travelled for 9 hours

Total distance = 120

$$\text{so, } 14 \times \frac{3x}{2} + 9 \times x = 120$$

$$\Rightarrow x = 4$$

A's speed = 6 kmph

B's speed = 4 kmph

$$\text{Now, time taken by A to cover 120 km} = \frac{120}{6} = 20 \text{ hr}$$

i.e. 6 am + 20 hr $\Rightarrow$ 2 am the next day

S10. Ans.(a)

Sol.

Time Taken by B to cover 120 km

$$\Rightarrow \frac{120}{4} = 30 \text{ hr}$$

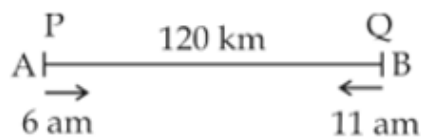
$$\text{Difference} = 30 - 20 = 10 \text{ hr}$$

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S11. Ans.(b)

Sol.



B's speed = x

Then A's speed = $\frac{3}{2}x$

They cross at 8 p.m.

So, A travelled for 14 hours

And B travelled for 9 hours

Total distance = 120

$$\text{so, } 14 \times \frac{3x}{2} + 9 \times x = 120$$

$$\Rightarrow x = 4$$

A's speed = 6 kmph

S12. Ans.(a)

Sol.

$$\text{SI for 1 yr} = 854 - 815$$

$$= 39$$

$$\text{Principle amount} = 815 - 3(39)$$

$$= \text{Rs } 698$$

S13. Ans.(c)

Sol.

$$\text{SI} = \frac{PR \times 2}{100} = \frac{2PR}{100}$$

$$\text{CI} = P \left(1 + \frac{R}{100} \right)^2 - P$$

$$= \frac{PR^2}{100^2} + \frac{2PR}{100}$$

$$\text{Difference} = \frac{PR^2}{100^2}$$

S14. Ans.(a)

Sol.

$$\sqrt{2}a = 20 \text{ cm}$$

$$a = 10\sqrt{2} \text{ cm}$$

$$\text{perimeter} = 4a = 40\sqrt{2}$$



S15. Ans.(b)

Sol.

Speed of train = 45 kmph

$$\text{Or, } 45 \times \frac{5}{18} = \frac{25}{2} \text{ m/s}$$

$$\text{Distance covered in 60 seconds} = \frac{25}{2} \times 60 = 750 \text{ m}$$

$$\text{Length of train} = 750 - 100 = 650 \text{ m}$$

S16. Ans.(c)

Sol.

Let the number be 'x' and 'y'

Atq,

$$\frac{80}{100} \times x = \frac{4}{5}y$$

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

S17. Ans.(d)

Sol.

$$\text{First part} = \frac{4}{7} \times 455 = 260$$

$$\text{Second part} = \frac{3}{7} \times 455 = 195$$

$$\text{Difference} = 260 - 195 = 65$$

S18. Ans.(b)

Sol.

Profit is divided in ratio of their investment

$$\text{Ram : Sheela} = 35000 \times 8 : 42000 \times 10$$

$$= 2 : 3$$

$$\text{Ram's share} = \frac{2}{5} \times 31570$$

$$= \text{Rs } 12628$$

S19. Ans.(c)

Sol.

$$49 \times 6\frac{1}{2} \times 8 = 196 \times 5 \times x$$

$$x = \frac{13}{5} \text{ or } 2\frac{3}{5}$$

S20. Ans.(a)

Sol.

$$\text{Circumference} = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 35 = 220 \text{ cm}$$

$$\text{Speed} = \frac{220 \times 10}{5 \times 100} = 4.4 \text{ m/s}$$

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S21. Ans.(b)

Sol.

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$9 = \frac{9+x}{\frac{9}{6}+1.5}$$

$$x = 18 \text{ km}$$

$$\text{Speed} = \frac{18}{1.5} = 12 \text{ kmph}$$

S22. Ans.(d)

Sol.

$$\begin{aligned} \text{Atq,} \\ \frac{26}{10+x} &= \frac{14}{10-x} \\ x &= 3 \text{ km/hr} \end{aligned}$$

S23. Ans.(a)

Sol.

$$\text{Train} \rightarrow \frac{12}{20}$$

$$\text{Car} \rightarrow \frac{7}{20}$$

$$\begin{aligned} \text{Remaining} &= 20 - (12 + 7) \\ &= 1 \text{ unit} \end{aligned}$$

$$\therefore 1 \text{ unit} \rightarrow 13 \text{ km}$$

$$\therefore 20 \text{ units} \rightarrow 13 \times 20 = 260 \text{ km}$$



S24. Ans.(c)

Sol.

Let MP be $200x$

SP after deducing commission = $180x$

$$\text{CP} = \frac{180x}{120} \times 100 = 150x$$

SP after 15% commission = $170x$

$$\text{Gain \%} = \frac{20x}{150x} \times 100\%$$

$$= 13\frac{1}{3}\%$$

S25. Ans.(b)

Sol.

Let number be x

$$\frac{35x}{100} = 280$$

$$\text{Required ratio} = \frac{800}{280} = \frac{20}{7}$$

S26. Ans.(c)

Sol.

$$\begin{aligned}\sqrt{3 + \sqrt{5}} &= \sqrt{3 + 2\sqrt{\frac{5}{4}}} \\ &= \sqrt{\left(\sqrt{\frac{5}{2}}\right)^2 + \left(\sqrt{\frac{1}{2}}\right)^2 + 2\sqrt{\frac{5}{2}}\sqrt{\frac{1}{2}}} \\ &= \sqrt{\frac{5}{2}} + \sqrt{\frac{1}{2}}\end{aligned}$$

S27. Ans.(b)

Sol.

$$\begin{aligned}2^x &= 2^{\frac{5}{3}} \\ \Rightarrow x &= \frac{5}{3}\end{aligned}$$

S28. Ans.(a)

Sol.

$$\begin{aligned}a + b &= 33 \\ a - b &= 15 \\ b &= \frac{33-15}{2} = 9\end{aligned}$$

S29. Ans.(d)

Sol.

Let no.s be $3x$ and $4x$

Atq,

$$3 \times 4 \times x = 120$$

$$x = 10$$

Numbers are 30 and 40

$$\text{Sum} = 30 + 40 = 70$$

S30. Ans.(b)

Sol.

$$\begin{aligned}8 \times 4 - 16 + 3 \\ = 32 - 16 + 3 = 19\end{aligned}$$



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