

Quant Mega Quiz for RRB NTPC (Solutions)

S1. Ans.(c)

Sol. $\sin \theta = \frac{8}{17}$ So, $\sqrt{\frac{1-\sin \theta}{1+\sin \theta}} = \frac{3}{5}$

S2. Ans.(b)

Sol. Req. Ans. = $540 - 120 = 420$

S3. Ans.(c)

Sol. Avg. production of table fan = $\frac{1800}{6} = 300$

S4. Ans.(c)

Sol. Req. ratio = $\frac{1160}{640} = \frac{29}{16}$

S5. Ans.(b)

Sol. Avg. Production of Monday & Tuesday
 $= \frac{540+260}{2} = 400$

so, difference = $400 - 300 = 100$ fans

S6. Ans.(d)

Sol. Unit's digit in $3 \times 38 \times 537 \times 1256$
 $=$ unit digit in $3 \times 8 \times 7 \times 6 = 4 \times 2 = 8$

S7. Ans.(c)

Sol. Third proportion = $\frac{18 \times 18}{12} = 27$

S8. Ans.(c)

Sol. A:B:C = 2:5:4

sum of ratios = $2+5+4 = 11$

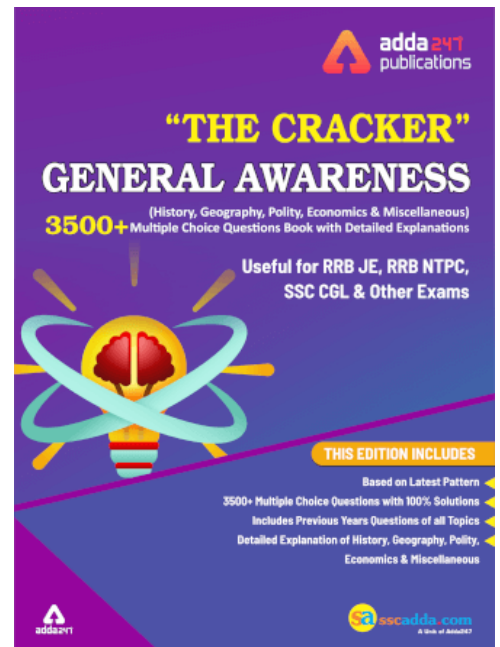
Difference = $(\frac{5}{11} - \frac{2}{11}) \times 126.50 = \text{Rs.}34.50$

S9. Ans.(d)

Sol. Let $x+y = 20$ and $x-y = 8$

So $(x+y)(x-y) = 20 \times 8$

$\Rightarrow x^2 - y^2 = 160$



S10. Ans.(a)**Sol.** Ratio $\rightarrow 2 : 3$ Numbers $\rightarrow 2x, 3x$

$$\frac{2x - 2}{3x + 2} = \frac{1}{2}$$

$$4x - 4 = 3x + 2$$

$$x = 6$$

Numbers $\rightarrow 12, 18$

Sum = 30

S11. Ans.(b)**Sol.** Area of circle = πr^2

ATQ,

$$\pi r^2 = 441\pi$$

$$r = 21$$

as we know that longest cord is only the diameter of the circle = $2r = 2 \times 21 = 42$ **S12. Ans.(c)****Sol.** Total of 13 numbers = $13 \times 9 = 117$ Total of first 7 numbers = $7 \times 7.5 = 52.5$ Total of last 7 number = $7 \times 10.8 = 75.6$ \therefore Middle number = $52.5 + 75.6 - 117 = 11.1$ **S13. Ans.(a)****Sol.** Total prime number between 1 and 30

= 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

Sum of the numbers = 129

Required average = $\frac{129}{10} = 12.9$ **S14. Ans.(c)****Sol.**

$$x : y = \frac{2}{7} : \frac{9}{14} = 4 : 9$$

$$y : z = \frac{2}{3} : \frac{5}{2} = 4 : 15$$

$$x : y : z = 4 : 9$$

$$4 : 15$$

$$16 : 36 : 135$$

$$x : z = 16 : 135$$

S15. Ans.(c)**Sol.** Let numbers = $8x$ & $9x$

ATQ,

$$8x \times \frac{20}{100} = 40$$

$$x = 25$$

Second number = $9 \times 25 = 225$ 10% of second number = $225 \times \frac{10}{100} = 22.5$

S16. Ans.(b)**Sol.**

$$22\frac{2}{9}\% \text{ of } 171 = \frac{2}{9} \text{ of } 171 = 38$$

$$\text{Required number} = 38 - 30 = 8$$

S17. Ans.(c)**Sol.** Let selling price = 100

$$\text{Profit} = 100 \times \frac{15}{100} = 15$$

∴ profit is on selling price then cost price is $100 - 15 = 85$

$$\text{Real profit percent} = \frac{15}{85} \times 100 = 17\frac{11}{17}\%$$

S18. Ans.(a)**Sol.** Given successive discounts 20%, 15% and 5%

Single discount for 20% and 15%

$$= 20 + 15 - \frac{20 \times 15}{100} = 32\%$$

Single discount for 32% and 5%

$$= 32 + 5 - \frac{32 \times 5}{100} = 35.4\%$$

S19. Ans.(a)**Sol.** Let the rate of CI be R% per annum

ATQ,

$$CI = P \left[\left(1 + \frac{R}{100} \right)^T - 1 \right]$$

$$504.4 = 3200 \left[\left(1 + \frac{R}{4 \times 100} \right)^3 - 1 \right]$$

(∵ Interest is compounded quarterly)

$$\frac{5044}{32000} = \left(1 + \frac{R}{400} \right)^3 - 1$$

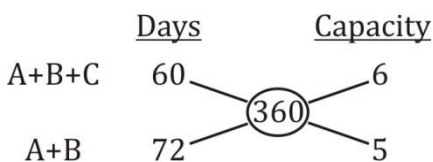
$$\frac{5044}{32000} + 1 = \left(1 + \frac{R}{400} \right)^3$$

$$\frac{37044}{32000} = \left(1 + \frac{R}{400} \right)^3$$

$$\frac{9261}{8000} = \left(1 + \frac{R}{400} \right)^3$$

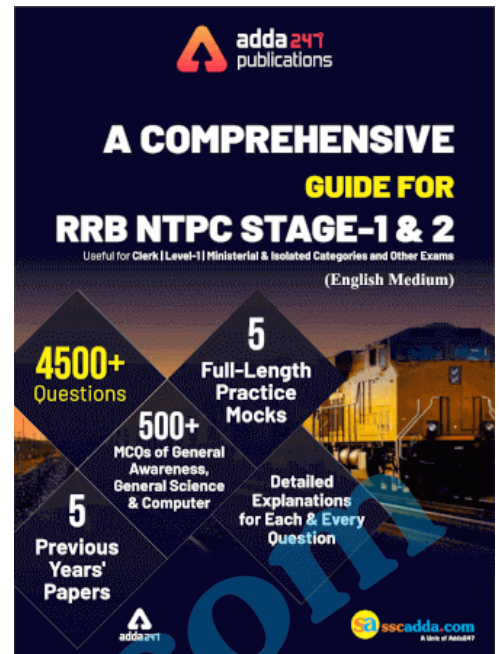
$$1 + \frac{R}{400} = \frac{21}{20}$$

$$R = 20\%$$

S20. Ans.(b)**Sol.**

$$C's \text{ capacity} = 6 - 5 = 1$$

$$\text{Required days to complete half of work} = \frac{360}{1} = 180 \text{ days.}$$



S21. Ans.(b)

Sol. Value of $(90\% - 83\%)x = 175$, 7% of $x = 175$, $100\% = 2500$
 99% of $2500 = 2475$

S22. Ans.(a)

Sol. Ratio of volume

$$= \frac{\frac{1}{3}\pi r_1^2 h_1}{\frac{1}{3}\pi r_2^2 h_2} = \frac{9}{1} \times \frac{1}{3} = 3 : 1$$

S23. Ans.(d)

Sol. Ratio of profit be

$$2 \times 6 : 3 \times 4 : 4 \times 3 = 12 : 12 : 12 = 1 : 1 : 1$$

S24. Ans.(a)

Sol.

$$\frac{n_1 - 1}{16} = \frac{n_2 - 1}{t_2}$$

$$\frac{2}{16} = \frac{4}{t_2}$$

$$t_2 = 32 \text{ years}$$

Q25. Ans.(a)

Sol. Amount = Rs. $(30000 + 4347) = \text{Rs. } 34347$.

Let the time be n years.

$$\text{Then, } 30000 (1 + 7/100)^n = 34347$$

$$(107/100)^n = 34347/30000 = 11449/10000 = (107/100)^2$$

So, the period is 2 year.

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