

Quantitative Aptitude for RRB NTPC (Solutions)

S1. Ans.(b)

Sol.

$$\text{For } (x - 7)^2 + (y + 10)^2 + (z - 6)^2 = 0$$

$$x = 7, y = -10, z = 6$$

$$\therefore x + y + z = 7 - 10 + 6 = 13 - 10 = 3$$

S2. Ans.(b)

Sol.

$$\frac{12x^3}{9ax^2} = \frac{8a^3x}{M}$$

$$M = \frac{8a^3x \cdot 9ax^2}{12x^3} = 6a^4$$

S3. Ans.(c)

Sol.

$$\begin{array}{ccc} X & : & Y \\ 6.5 \times 800 \times \frac{10}{100} \times \frac{5}{8} & : & 11.5 \times 1000 \times \frac{16}{100} \times \frac{3}{8} \\ 65 & : & 138 \end{array}$$

S4. Ans.(a)

Sol.

Total amount earned =

$$\begin{aligned} & \left[\left\{ (2.5 + 3 + 4) \times 800 \times \frac{10}{100} \right\} + \left\{ (4 + 5 + 6) \times 1000 \times \frac{16}{100} \right\} \right] \times 100 \\ &= [760 + 2400] \times 100 \\ &= 31,6,000 \text{ Rs.} \end{aligned}$$

S5. Ans.(d)

$$\begin{aligned} \text{Sol. } & 100(2.5 + 3 + 3.5 + 5) \\ &= 1400 \end{aligned}$$

S6. Ans.(a)

Sol.

$$1 \xrightarrow{9} 3 \xrightarrow{9} 9 \xrightarrow{9} 27 \xrightarrow{9} 81 \xrightarrow{9} 243$$

$9 \times 5 = 45 \text{ years}$

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120 TOTAL TESTS

S7. Ans.(d)

Sol.

$$\frac{m+m+1+m+2+m+3+m+4}{5} = n$$
$$M+2=n$$
$$M=n-2$$
$$\frac{m+2+m+3+m+4+m+5+m+6+m+7}{6} = \frac{2m+9}{2} = \frac{2(n-2)+9}{2} = \frac{2n+5}{2}$$

S8. Ans.(c)

Sol.

$$(A+B) \times 48 = 5 \times 120$$
$$\frac{A+B}{A} = \frac{60}{48} = \frac{5}{2}$$
$$T. W = 5 \times 48 = 240$$

Efficiency -



10
240 2400

S9. Ans.(d)

Sol.

$$A \times 48 = B \times 36$$

$$\frac{A}{B} = \frac{3}{4}$$

$$T. W = 144$$

$$\text{Work done by B} = 4 \times 25 + 2 = 102$$

$$\text{Work left} = 42$$

$$\text{Work done by A} = \frac{42}{3} = 14 \text{ min}$$

S10. Ans.(c)

Sol.

Ram	Rohit	Sam	Rohan	Ravi
x-25	x	x-45	75	
85	110	65		119

+34

$$M.M = 169$$

$$\frac{119}{169} \times 100 = 70\%$$

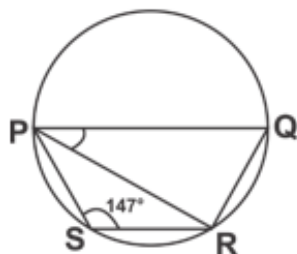
S11. Ans.(d)

Sol.

$$\begin{aligned}\text{let no. of people} &= n \\ np &= 13q + (n - 13)r \\ np - nr &= 13(q - r) \\ n &= \frac{13(q - r)}{p - r}\end{aligned}$$

S12. Ans.(b)

Sol.

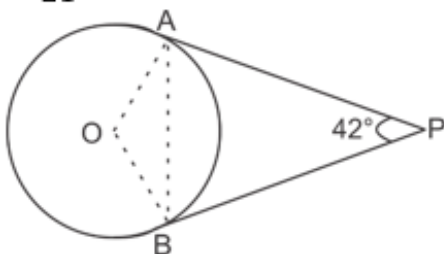


$$\begin{aligned}\angle PQR &= 180^\circ - \angle PSR = 180^\circ - 147^\circ \\ &= 33^\circ \\ \angle PRQ &= 90^\circ \text{ (Angle on semicircle)} \\ \angle QPR &= 90^\circ - 33^\circ \\ &= 57^\circ\end{aligned}$$

S13. Ans.(b)

Sol.

$$\begin{aligned}\angle AOB &= 180^\circ - \angle APB \\ &= 180^\circ - 42^\circ \\ &= 138^\circ \\ \text{in } \triangle AOB, OA &= OB \text{ (Radius)} \\ \angle OAB &= \frac{1}{2}(180^\circ - 138^\circ) \\ &= 21^\circ\end{aligned}$$



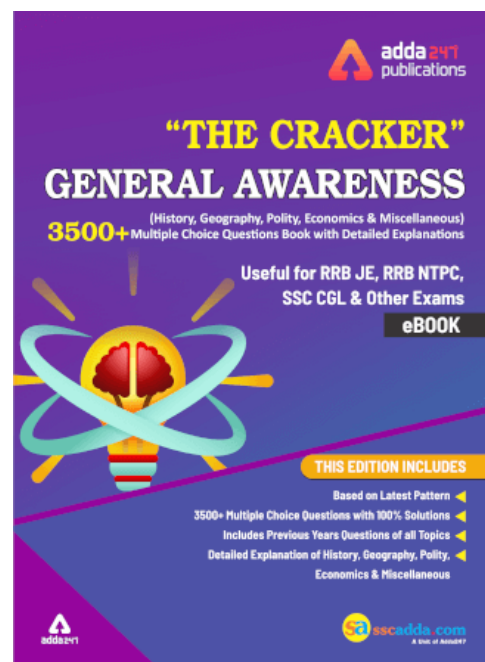
S14. Ans.(a)

Sol.

$$\begin{aligned}x^2 + x^{-2} &= (x + x^{-1})^2 - 2 \\ &= 169 - 2 = 167\end{aligned}$$

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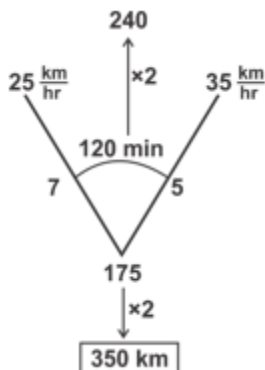
S15. Ans.(d)

Sol.

$$a^3 - b^3 = (a - b)(a^2 + b^2 + ab)$$
$$\Rightarrow \frac{1.50}{100} = 0.015$$

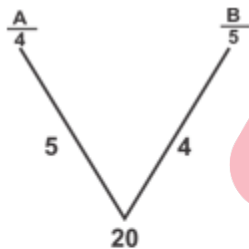
S16. Ans.(c)

Sol.



S17. Ans.(b)

Sol.



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A is opened for 3 hours = 15 unit

Remaining part = $\frac{5}{4} = 1\frac{1}{4}$ hours

By B

S18. Ans.(d)

Sol.

$$\tan \theta + \frac{1}{\tan \theta} = \pi$$

$$\tan^2 \theta + \frac{1}{\tan^2 \theta} = \pi^2 - 2$$

$$\sec^2 \theta + \operatorname{cosec}^2 \theta = 2 + \pi^2 - 2 = \pi^2$$

S19. Ans.(c)

Sol.

$$\frac{4}{3}\pi R^3 = n \times \frac{4}{3}\pi r^3$$

$$n = \frac{1331}{27} = 49$$

S20. Ans.(b)

Sol.

$$\frac{\frac{1}{4} \times \frac{1}{2} + 2 \times \frac{1}{3} - 4}{3 + 16 - 96} = \frac{\frac{1}{8} + \frac{2}{3} - 4}{-77} = \frac{-77}{24}$$

S21. Ans.(c)

Sol. 1+6+6+6+0+0.....0
= 9

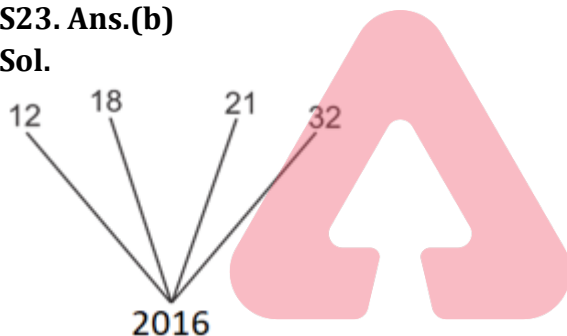
S22. Ans.(d)

Sol.

$$\frac{19}{43} + \frac{1}{2 + \frac{1}{2 + \frac{1}{3 + \frac{1}{5}}}} = \frac{19}{43} + \frac{1}{2 + \frac{5}{19}}$$
$$\frac{19}{43} + \frac{19}{43} = \frac{38}{43}$$

S23. Ans.(b)

Sol.



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2016 X 11=22176 is the highest no. of five digit between 22000 and 23000 which is exactly divided by 12, 18, 21, 32

Number is 22176

S24. Ans.(c)

Sol.

$$p = 2k, q = k, r = 2k, s = 2k$$

$$\text{Req. value} \Rightarrow \frac{8k}{8k} = 1$$

S25. Ans.(b)

Sol.

R	:	T	
7	:	5	
12	:	11	
84	:	55	
		↓	×250
		13750	

139	
↓	×250
34750	

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S26. Ans.(a)

Sol.

After addition of 70 ml H_2O

$$\begin{array}{ccc} H_2SO_4 & : & H_2O \\ 5 & : & 4 = 9 \\ & \downarrow \times 30 & \downarrow \times 30 \\ & 120 & 270 \end{array}$$

H_2O before addition = $120 - 70 = 50$ ml

Remaining is $H_2SO_4 = 200 - 50 = 150$ ml

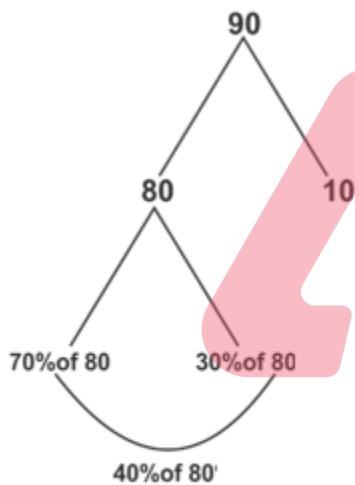
Ratio of H_2SO_4 and $H_2O = 150 : 50$
 $3 : 1$

$$x = 1$$

S27. Ans.(c)

Sol.

let voters = 90



40% of 80 $\rightarrow 3200$

100% of 80 $\rightarrow \frac{3200}{40} \times 100 = 8000$

80 $\rightarrow 8000$

90 $\rightarrow 9000$

S28. Ans.(b)

Sol.

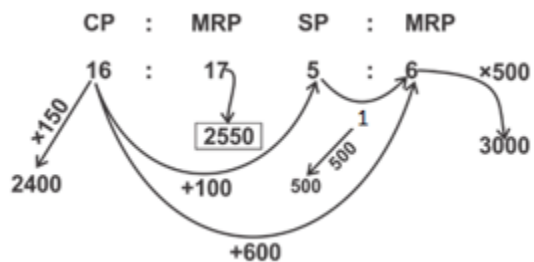
$$7\frac{9}{13}\% = \frac{1}{13} \text{ \& } 6\frac{2}{3}\% = \frac{1}{15}$$

$$\begin{array}{ccc} 13 & : & 14 : 15 \\ & \downarrow & \\ & 2 & \end{array}$$

$$\text{Req. Percentage} = \frac{2}{15} \times 100 = 13.33\%$$

S29. Ans.(b)

Sol.



S30. Ans.(b)

Sol.

