

## Quantitative Aptitude Mega Quiz for Railway (Solutions)

**S1. Ans.(b)**

**Sol.**

$$0.008 \times 0.01 \times 0.072 \div (0.12 \times 0.0004)$$

$$\rightarrow 0.008 \times 0.01 \times 0.072 \div (0.000048)$$

$$\rightarrow 0.008 \times 0.01 \times \frac{0.072}{0.000048}$$

$$\rightarrow \frac{8 \times 1 \times 72 \times 1000000}{1000 \times 100 \times 1000 \times 48}$$

$$\rightarrow \frac{12}{100} = 0.12$$

**S2. Ans.(c)**

**Sol.**

$$\sqrt[3]{0.000729}$$

$$\rightarrow \sqrt[3]{0.09 \times 0.09 \times 0.09}$$

$$\rightarrow \sqrt[3]{0.09}$$

$$\rightarrow \sqrt{0.3 \times 0.3} = 0.3$$

**SSC**

**adda247**

**S3. Ans.(c)**

**Sol.**

$$\sqrt{5} = 2.24, \sqrt{3} = 1.73, \sqrt{6} = 2.45, \sqrt{2} = 1.41$$

$$\rightarrow \therefore \sqrt{5} + \sqrt{3} = 2.24 + 1.73 = 3.97$$

$$\rightarrow \sqrt{6} + \sqrt{2} = 2.45 + 1.41 = 3.86$$

Clearly,  $3.97 > 3.86$

$$\therefore \sqrt{5} + \sqrt{3} > \sqrt{6} + \sqrt{2}$$

**S4. Ans.(b)**

**Sol.**

$$3^{x-y} = 27, 3^{x+y} = 243$$

$$\rightarrow 3^{x-y} = 3^3, 3^{x+y} = 3^5$$

$$\rightarrow x - y = 3, x + y = 5$$

On solving we get,

$$x = 4, y = 1$$

$$\text{So, } xy = 4 \times 1 = 4$$

TEST SERIES

**Bilingual**



**DFCCIL**

**EXECUTIVE**

**OPERATIONS & BD**

**30 Total Tests**

**S5. Ans.(d)**

**Sol.**

$$(317)^2 + (283)^2$$

$$\rightarrow (300 + 17)^2 + (300 - 17)^2$$

$$\text{It is in the form of } (a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$$

$$\rightarrow 2(90000 + 289) = 180578$$

**S6. Ans.(c)**

**Sol.**

$$534.596 + 61.472 - 496.708 = ? + 27.271$$

$$596.068 - 496.708 = ? + 27.271$$

$$99.36 - 27.271 = ?$$

$$72.089 = ?$$

**S7. Ans.(b)**

**Sol.**

$$52000 \div 40 \div 65 * 30 = ? - \sqrt{2209}$$

$$\rightarrow 52000 * \frac{1}{40} * \frac{1}{65} * 30 = ? - 47$$

$$\rightarrow 600 = ? - 47$$

$$\rightarrow 647$$

**S8. Ans.(c)**

**Sol.**

$$69 \div 3 \times 0.95 + 19.5 - 11.8 = ?$$

$$\rightarrow \frac{69}{3} * \frac{95}{100} + 19.5 - 11.8 = ?$$

$$\rightarrow 21.85 + 19.5 - 11.8 = ?$$

$$\rightarrow 29.55$$

**S9. Ans.(d)**

**Sol.**

$$150\% \text{ of } 660 + 24\% \text{ of } 650 = ?$$

$$\rightarrow 990 + 156$$

$$= 1146$$

**S10. Ans.(b)**

**Sol.**

$$\text{Let } 0.41 = x \text{ and } 0.69 = y$$

$$\text{Expression} \rightarrow \frac{(x^3 + y^3)}{(x^2 - xy + y^2)} = \frac{(x + y)(x^2 - xy + y^2)}{(x^2 - xy + y^2)}$$

$$\rightarrow x + y = 0.41 + 0.69 = 1.10$$



S11. Ans.(c)

Sol.

$$\begin{aligned}\text{Given} &\Rightarrow \frac{1 - \frac{1}{0.1}}{\frac{8}{3} \times \frac{27}{8} + \left(\frac{-3}{1}\right)} \\ &= \frac{-9}{9-3} = \frac{-9}{6} = \frac{-3}{2}\end{aligned}$$

S12. Ans.(d)

Sol.

Required

$$\Rightarrow 98769 + 34.678 - 96087.256$$

$$\Rightarrow 2716.422$$

S13. Ans.(b)

Sol.

$$\text{Given } (37.68)^2 \times 37.68 x^2 + (7.2)^2$$

$$x^2 = 2 \times 7.2 = 14.4$$

$$x = 1.2$$

S14. Ans.(d)

Sol.



SSC  
adda247

$$\text{Given} = \frac{6(5x+4)}{7(3x-2)} = \frac{16(5x+1) \times \frac{7}{2}}{\frac{35}{2}(18x-12)}$$

$$\Rightarrow \frac{6(5x-4)}{3x-2} = \frac{16(5x+1) \times \frac{7}{2}}{\frac{5 \times 6}{3}(3x-2)}$$

$$\Rightarrow 60(5x-4) = (80x+16) \times \frac{7}{2}$$

$$\Rightarrow 300x - 240 = 280x + 56$$

$$\Rightarrow 20x = 296$$

$$x = 14.8$$

S15. Ans.(c)

Sol.

According to BODMAS Rule.

$$\begin{aligned}\Rightarrow \frac{7 + \frac{64}{64} \times \frac{8}{8} \times 16}{\frac{1}{3} + 3 - \frac{2}{12}} &= \frac{24 \times 12}{37} \\ &= 7.78\end{aligned}$$

S16. Ans.(b)

Sol.

ATQ

$$22 + 11 - 33 + \frac{4}{9} + \frac{567-5}{990} - \frac{59}{99}$$
$$\Rightarrow \frac{440+562-590}{990} = \frac{412}{990}$$
$$= 0.41\bar{6}$$

S17. Ans.(c)

Sol.

$$\frac{\frac{4}{9} \times \frac{5}{7} \times \frac{3}{4} \times \frac{8}{14} \times \frac{9}{5}}{\frac{5}{7} + \frac{3}{8} \times \frac{15}{7} \times \frac{161}{95} \times \frac{19}{23}} = \frac{\frac{12}{49}}{\frac{5}{7} + \frac{9}{8}} = \frac{12 \times 56}{49 \times 103}$$
$$= \frac{672}{5047} = 0.133$$

S18. Ans.(d)

Sol.

Given

$$\Rightarrow \frac{\left[1 \times 1 \div 52 \text{ of } \frac{23}{78} + \frac{864}{23}\right] \times 46}{\frac{220}{8} \times 4 + 224}$$
$$\Rightarrow \frac{\left[\frac{1 \times 3}{46} + \frac{864}{23}\right] \times 46}{334} = \frac{1731}{334} = 5.182$$



S19. Ans.(b)

Sol.

$$x = 13456.145 - 15494.945 - 8625.241$$
$$= -10664.041$$

S20. Ans.(d)

Sol.

$$\text{Required} = \frac{\frac{5}{3} + \frac{5}{9} + \frac{7}{8} \times \frac{1}{3} \times \frac{4}{5}}{\frac{2}{25} + \frac{1}{4} + \frac{58}{35}}$$
$$\Rightarrow \frac{\frac{20}{9} + \frac{7}{30}}{56+175+1160} \Rightarrow \frac{\frac{200+21}{90}}{\frac{1391}{700}}$$
$$\Rightarrow \frac{221 \times 700}{90 \times 1391} = 1.23$$



Bilingual

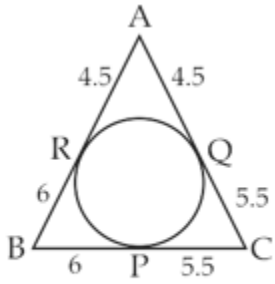
**RRB NTPC**  
**CBT I**

Memory Based Package

- Based on Papers of (15th Feb - 3rd March) 2021
- 10 Full Length Mocks

S21. Ans.(c)

Sol.



$$2(4.5 + 5.5 + 6) \\ = 32 \text{ cm}$$

S22. Ans.(b)

Sol.

$$\text{Required central angle} = \frac{42}{(20+42+40+35+43)} \times 360 \\ = 84^\circ$$

S23. Ans.(c)

Sol.

let the original speed be  $x$  km/h

$\therefore$  ATQ,

$$\frac{384}{x} + 2 = \frac{384}{x-16} \\ \Rightarrow \frac{x+192}{x} = \frac{192}{x-16}$$

$$\Rightarrow (x-16)(x+192) = 192x$$

$$\Rightarrow x^2 - 16x - 192 \times 16 = 0$$

$$\Rightarrow x = 64, -48$$

$\therefore$  75% of its original speed

$$= \frac{75}{100} \times 64 = 48 \text{ km/h}$$

S24. Ans.(a)

Sol.

Let present age of A and B be  $x$  &  $y$  years respectively.

$\therefore$  ATQ,

$$\frac{x-4}{y-4} = \frac{4}{5} \quad \& \quad \frac{x+8}{y+8} = \frac{11}{13}$$

$$\Rightarrow 5x - 4y = 4 \quad \dots(i)$$

&

$$13x - 11y = -16 \quad \dots(ii)$$

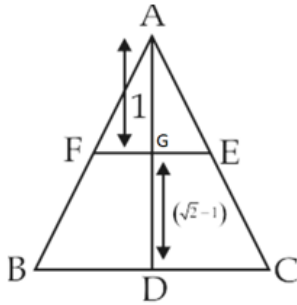
Solving (i) & (ii) we get

$$x = 36 \text{ yrs} \quad \& \quad y = 44 \text{ yrs}$$

$$\therefore (x + y) = 80 \text{ yrs}$$

S25. Ans.(b)

Sol.



Let area of  $\triangle AFE = 1$

then area of  $\square BCEF = 1$

$$\frac{\text{Area of } \triangle AFE}{\text{Area of } \triangle ABC} = \frac{1}{2} = \frac{AG^2}{AD^2}$$

$$\frac{AG}{AD} = \frac{1}{\sqrt{2}}$$

$$\frac{GD}{AG} = \frac{\sqrt{2}-1}{1}$$

S26. Ans.(b)

Sol.

$$4 - 2 \sin^2 \theta - 5 \cos \theta = 0$$

$$\Rightarrow 4 - 2(1 - \cos^2 \theta) - 5 \cos \theta = 0$$

$$\Rightarrow 4 - 2 + 2 \cos^2 \theta - 5 \cos \theta = 0$$

$$\Rightarrow 2 \cos^2 \theta - 5 \cos \theta + 2 = 0$$

$$\Rightarrow 2 \cos^2 \theta - \cos \theta - 4 \cos \theta + 2 = 0$$

$$\Rightarrow \cos \theta (2 \cos \theta - 1) - 2 (2 \cos \theta - 1) = 0$$

$$\Rightarrow (\cos \theta - 2) (2 \cos \theta - 1) = 0$$

$$\Rightarrow \cos \theta = \frac{1}{2} \text{ or } 2 \text{ (not possible)}$$

$$\therefore \theta = 60^\circ$$

$$\text{now, } \sin \theta + \tan \theta$$

$$= \sin 60^\circ + \tan 60^\circ$$

$$= \frac{\sqrt{3}}{2} + \sqrt{3} = \frac{3\sqrt{3}}{2}$$

S27. Ans.(a)

Sol.

$$48 + 36 : 56 + 35$$

$$84 : 91$$

$$12 : 13$$

SSC

adda247

S28. Ans.(c)

Sol.

$$120 - \frac{120x}{100} = 40 + \frac{40x}{100}$$

$$80 = \frac{4x}{10} + \frac{12x}{10}$$

$$800 = 16x$$

$$x = 50$$

ATQ,

50% of 210

$$= 105$$

70% of 180

$$= 126$$

$$= \frac{126-105}{126} \times 100 = \frac{21}{126} \times 100 = \frac{50}{3} = 16\frac{2}{3}\%$$

S29. Ans.(d)

Sol.

$$\frac{(\sqrt{5}x)^3 - (3\sqrt{3})^3}{\sqrt{5}x - 3\sqrt{3}} = (Ax^2 + By^2 + Cxy)$$

$$5x^2 + 27y^2 + 3\sqrt{15}xy = Ax^2 + By^2 + Cxy$$

$$A = 5$$

$$B = 27$$

$$C = 3\sqrt{15}$$

$$Ax^2 + By^2 + Cxy = 6 \times 5 + 27 - \sqrt{15} \times 3\sqrt{15}$$

$$= 57 - 45$$

$$= 12$$

S30. Ans.(b)

Sol.

985x3678y is divisible by 72 ( $9 \times 8$ )

if this number is divisible by 8 then last three

digit is also divisible by 8

$$= \frac{78y}{8} \text{ is divisible}$$

so, y must be 4

if 985x36784 is divisible by 9 then sum is also divisible

$$= \frac{50+x}{9} \text{ is divisible}$$

x must be 4

find,  $4x - 3y$

$$4 \times 4 - 3 \times 4$$

$$= 16 - 12$$

$$= 4$$

SSC

adda247

TEST SERIES

Bilingual



DFCCIL

JUNIOR EXECUTIVE

OPERATIONS & BD

30 Total Tests