



# R R CAMPUS



Ground Floor, Nath kuti, Musallapur Haat, Patna - 06 | : 9135000083/93 :: 8002169064 |

[ For :- CSAT, SSC, IBPS (PO & Clerk), RLYS, & Others Competitive Exam ]

1.  $x+y+z=?$

$$1 + \frac{3}{1 + \frac{4}{2 + \frac{1}{1 + \frac{2}{5}}}} = x \frac{y}{z}$$

$$\Rightarrow 1 + \frac{3}{1 + \frac{4}{2 + \frac{5}{7}}} = 1 + \frac{3}{1 + \frac{4 \times 7}{19}}$$

$$\Rightarrow 1 + \frac{19 \times 3}{47} = 1 + \frac{57}{47}$$

$$\Rightarrow 1 + 1 \frac{10}{47} = 2 \frac{10}{47} = x \frac{y}{z}$$

$\therefore x=2, y=10, z=47$   
 $x+y+z=59$  (B)

2.  $a + \frac{1}{b + \frac{1}{3c}} = \frac{25}{37}$   
 $a+b+c=?$

$$\Rightarrow \frac{1}{a + \frac{3c}{3bc+1}} = \frac{25}{37}$$

$$\Rightarrow \frac{3bc+1}{3abc+a+3c} = \frac{25}{37}$$

$$\Rightarrow a + \frac{1}{b + \frac{1}{3c}} = \frac{37}{25} = 1 \frac{12}{25}$$

$$\Rightarrow a + \frac{1}{b + \frac{1}{3c}} = 1 + \frac{12}{25}$$

$\therefore a=1$

$$\Rightarrow \frac{1}{b + \frac{1}{3c}} = \frac{12}{25}$$

$$\Rightarrow b + \frac{1}{3c} = \frac{25}{12} = 2 \frac{1}{12} = 2 + \frac{1}{12}$$

$\therefore b=2$  &  $3c=12$   
 $c=4$

Now,  $a+b+c=1+2+4=7$  (D)

3.  $\frac{5}{2^2 \times 3^2} + \frac{7}{3^2 \times 4^2} + \frac{9}{4^2 \times 5^2} +$

$$\frac{11}{5^2 \times 6^2} + \frac{13}{6^2 \times 7^2} + \frac{15}{7^2 \times 8^2} + \frac{17}{8^2 \times 9^2}$$

$$\Rightarrow \frac{5}{2^2 \times 3^2} = \frac{9-4}{2^2 \times 3^2} = \frac{1}{2^2} - \frac{1}{3^2}$$

$\Rightarrow$  इसी प्रकार

$$\frac{1}{2^2} - \frac{1}{3^2} + \frac{1}{3^2} - \frac{1}{4^2} + \frac{1}{4^2} - \frac{1}{5^2} + \frac{1}{5^2} - \frac{1}{6^2} + \frac{1}{6^2} - \frac{1}{7^2} + \frac{1}{7^2} - \frac{1}{8^2} + \frac{1}{8^2} - \frac{1}{9^2}$$

$$\Rightarrow \frac{1}{2^2} - \frac{1}{9^2} = \frac{1}{4} - \frac{1}{81}$$

$$\Rightarrow \frac{81-4}{324} = \frac{77}{324}$$
 (D)

$$4. \frac{1}{3 \times 7} + \frac{1}{7 \times 11} + \frac{1}{11 \times 15} + \frac{1}{15 \times 19} + \dots + \frac{1}{23 \times 27} = ?$$

$$\Rightarrow \frac{1}{4} \left( \frac{4}{3 \times 7} + \frac{4}{7 \times 11} + \frac{4}{11 \times 15} + \dots + \frac{4}{23 \times 27} \right)$$

$$\Rightarrow \frac{1}{4} \left( \frac{7-3}{7 \times 3} + \frac{11-7}{7 \times 11} + \frac{15-11}{11 \times 15} + \dots + \frac{27-23}{23 \times 27} \right)$$

$$\Rightarrow \frac{1}{4} \left( \frac{1}{3} - \frac{1}{7} + \frac{1}{7} - \frac{1}{11} + \frac{1}{11} - \frac{1}{15} + \dots + \frac{1}{23} - \frac{1}{27} \right)$$

$$\Rightarrow \frac{1}{4} \left( \frac{1}{3} - \frac{1}{27} \right) = \frac{1}{4} \left( \frac{9-1}{27} \right)$$

$$\Rightarrow \frac{1}{4} \times \frac{8}{27} = \frac{2}{27} \quad \text{(D)}$$

$$5. \frac{1}{2^2-1} + \frac{1}{4^2-1} + \frac{1}{6^2-1} + \dots + \frac{1}{20^2-1} = ?$$

$$a^2 - b^2 = (a+b)(a-b)$$

$$\frac{1}{1 \times 3} + \frac{1}{3 \times 5} + \frac{1}{5 \times 7} + \dots + \frac{1}{19 \times 21}$$

$$\Rightarrow \frac{1}{2} \left( \frac{2}{1 \times 3} + \frac{2}{3 \times 5} + \frac{2}{5 \times 7} + \dots + \frac{2}{19 \times 21} \right)$$

$$\Rightarrow \frac{1}{2} \left( \frac{3-1}{1 \times 3} + \frac{5-3}{3 \times 5} + \frac{7-5}{5 \times 7} + \dots + \frac{21-19}{19 \times 21} \right)$$

$$\Rightarrow \frac{1}{2} \left( 1 - \frac{1}{3} + \frac{1}{3} - \frac{1}{5} + \frac{1}{5} - \frac{1}{7} + \dots + \frac{1}{19} - \frac{1}{21} \right)$$

$$\Rightarrow \frac{1}{2} \left( 1 - \frac{1}{21} \right) = \frac{1}{2} \times \frac{20}{21} = \frac{10}{21} \quad \text{(B)}$$

$$6. 3\frac{2}{7} - 2\frac{1}{14} - 1\frac{1}{7} = ? + 2\frac{1}{14}$$

$$\Rightarrow 3\frac{2}{7} - 2\frac{1}{14} - 1\frac{1}{7} - 2\frac{1}{14} = ?$$

$$\Rightarrow 3 - 2 - 1 - 2 + \frac{2}{7} - \frac{1}{14} - \frac{1}{14} - \frac{1}{7}$$

$$\Rightarrow -2 + \frac{4-1-1-2}{14}$$

$$\Rightarrow -2 \quad \text{(D)}$$

$$7. 3\frac{1}{4} + 2\frac{1}{2} - 1\frac{5}{6} = \frac{(? )^2}{10} + 1\frac{5}{12}$$

$$\Rightarrow 3 + 2 - 1 - 1 + \frac{1}{4} + \frac{1}{2} - \frac{5}{6} - \frac{5}{12} = \frac{x^2}{10}$$

$$\Rightarrow 3 + \frac{3+6+10-5}{12} = \frac{x^2}{10}$$

$$\Rightarrow \frac{36-6}{12} = \frac{x^2}{10}$$

$$\Rightarrow x = \sqrt{\frac{300}{124}} = \frac{10}{2} = 5 \quad \text{(D)}$$

$$8. \sqrt{1024} + \sqrt{7921} \times 11 = ?$$

$$\Rightarrow \sqrt{32} + 89 \times 11$$

$$= \sqrt{121} \times 11 = 121 \quad \text{(B)}$$

$$9. \sqrt{?} \times \sqrt{3025} = 2695$$

$$\Rightarrow \sqrt{x} = \frac{2695 - 539}{55} = 49$$

$$\Rightarrow x = 49^2 = 2401 \quad \text{(A)}$$



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11.  $0.07\overline{07} = \frac{707-7}{9900}$   
 $= \frac{700}{9900} = \frac{7}{99}$  (A)

12.  $a+b+c=?$   
 $0.\overline{abcabcabc...} = \frac{17}{37}$   
 $\Rightarrow 37 \mid 170(0.459...)$

$$\begin{array}{r} 148 \\ 37 \overline{) 170} \\ \underline{115} \\ 550 \\ \underline{444} \\ 106 \end{array}$$

$0.\overline{abc...} = 0.459...$   
 $\therefore a+b+c = 4+5+9 = 18$  (C)

13.  $\frac{0.\overline{3555} \times 0.\overline{5555} \times 2.\overline{025}}{0.\overline{225} \times 1.\overline{7775} \times 0.\overline{2222}}$   
 $= \frac{9}{2} = 4.5$  (C)

10.  $(186 \times 260) \div 40 = ?$

$$\frac{186 \times 260}{40} = 1209$$
 (C)

14.  $\frac{\sqrt{(0.1)^2 + (0.01)^2 + (0.009)^2}}{\sqrt{(0.01)^2 + (0.001)^2 + (0.0009)^2}} \times 10$

$\Rightarrow$  ~~अंश~~ अंश तथा हर के सभी सं. समान हैं, लेकिन हर में दशमलव (.) एक अंक लॉए दटा है।  
 - Special Case

$\therefore \frac{(0.009)^2}{(0.0009)^2} \times 10$

$\Rightarrow \frac{9^2}{(1000)^2} \times 10 = \sqrt{10^2} \times 10$

$= 10 \times 10 = 100 = 10^2$  (A)

15. If  $\frac{1}{3.178} = 0.2689$   
 then  $\frac{1}{0.003178} = ?$

$\Rightarrow 268.9$  (B)

(Left side denominator में decimal 3 digit Left हुआ है  
 $\therefore$  Right side में decimal 3 digit Right जाएगा।)

16.  $\frac{2401}{x} \Rightarrow$  Perfect Square no.  
 $x = ?$

$\Rightarrow 2401 = 49 \times 49 \times 1$

$\therefore$  Answer is 1 (A)

17.  $x = ?$

$(63520 - x)$  is Perfect Square no.

$\Rightarrow$   $\begin{array}{r|l} 2 & 63520 \end{array}$  (252)

$\begin{array}{r|l} 2 & 4 \\ \hline 45 & 235 \\ \hline 5 & 225 \\ \hline & 1020 \\ 502 & 1004 \\ \hline 504 & 16 \end{array}$

(A)

18.  $x = ?$

$(32246 - x)$  is Perfect Square no.

$\Rightarrow$   $\begin{array}{r|l} 17 & 32246 \end{array}$  (179)

$\begin{array}{r|l} 17 & 289 \\ \hline 349 & 3346 \\ \hline 9 & 3141 \\ \hline 358 & 205 \end{array}$

(C)

19. कुल राशी = 3636 ₹

$\Rightarrow$  माना की खाहरी =  $x$

जमा राशी =  $x$  ₹  $x$  पैसे

=  $x + \frac{x}{100} = \frac{101x}{100}$  ₹

$\therefore x \times \frac{101x}{100} = 3636$

$x^2 = \frac{36 \times 3636 \times 100}{101}$

$x = \sqrt{3600} = 60$  (A)

20.

$(1, 0, -1)$  को छोड़कर सभी पूर्णांक संख्याओं के वर्गों के छोटा द्रोत है।

$\therefore$  If  $x > 1$

Then  $x^2 > x > \sqrt{x}$  ✓

(B)

21.

$65x5y3$  is a perfect cube and  $x - y = 8$ , then  $x + y = ?$

$\Rightarrow$   $65x5y3$  218 80-90 के बीच की संख्या का cube है और unit digit से

$\hookrightarrow 87^3 = 658503$

$\therefore x - y = 8$  (given) ✓

$\therefore x + y = 8 + 0 = 8$  (C)

22.

$\sqrt{0.01} + \sqrt{0.81} + \sqrt{1.21} + \sqrt{0.0009}$

$\Rightarrow \frac{1}{10} + \frac{9}{10} + \frac{11}{10} + \frac{03}{100}$

$\Rightarrow \frac{21}{10} + \frac{3}{100} = \frac{213}{100}$

= 2.13 (B)



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23.  $\sqrt{\frac{48.4}{0.289}} = \sqrt{\frac{484}{2.89}} = \frac{22}{1.7}$

$\Rightarrow \frac{220}{17} = 12 \frac{16}{17}$  (C)

24. I.f  $\sqrt{4096} = 64$   
 then

$\sqrt{40.96} + \sqrt{0.4096} + \sqrt{0.004096}$   
 $+ \sqrt{0.00004096}$

$\Rightarrow 6.4 + 0.64 + 0.064 + 0.0064$

$\Rightarrow 7.1104$  (C)

25.

$\sqrt{(\text{1111... 100 times}) - (\text{222... 50 times})}$

$\Rightarrow 3333... 50 \text{ times}$  ←

Pattern



$\sqrt{11 - 2} = \sqrt{9} = 3$

$\sqrt{1111 - 22} = \sqrt{1089} = 33$

$\sqrt{111111 - 222} = \sqrt{110889} = 333$

(C)