01. $(35)^2 \div \sqrt[3]{125} + (25)^2 \div 125 = ?$

Sol^n :-

$= (35 \times 35) \div \sqrt[3]{5 \times 5 \times 5} + (25 \times 25) \div 125$

$= 1225 \div 5 + 625 \div 125$

$= 245 + 5$

$= 250.$

ans → b.) 250.

02. The value of $\dfrac{1\frac{1}{4} \div 1\frac{1}{2}}{\left(\frac{1}{15} + 1 - \frac{9}{10}\right)}$ is.

Sol^n :-

$$\frac{\frac{5}{4} \div \frac{3}{2}}{\left(\frac{1}{15} + 1 - \frac{9}{10}\right)}$$

$$= \frac{\frac{5}{4} \times \frac{2}{3}}{\left(\frac{2+30-27}{30}\right)} \quad \left(\because \text{L.C.M of } 15, 10 \text{ is } 30\right)$$

$$= \frac{\frac{5}{6}}{\frac{5}{30}} = \frac{5}{6} \times \frac{6}{1} = 5.$$

ans → d.) 5.

03. यदि संक्रिया '*' को $a*b = a+b+ab$ से परिभाषित किया जाये, तो $3*7$ बराबर है।

Sol^n :- $a*b = a+b+ab$

$3*7 = 3+7+3\times7$

$= 10 + 21$

$= 31.$

ans → c.) 31.

04. यदि $(1.25)(1-6.4\times10^{-5}) = 1.2496 + a$ है, तो 'a' का मान किसके बराबर है,

Sol^n :-

$(1.25)(1-6.4\times10^{-5}) = 1.2496+a$

$\Rightarrow 1.25 - 1.25 \times 6.4 \times 10^{-5} = 1.2496 + a$

$\Rightarrow 1.25 - 8\times10^{-5} = 1.2496+a$

$\Rightarrow a = 1.25 - 1.2496 - 8\times10^{-5}$

$\Rightarrow a = 0.0004 - 0.00008$

$\Rightarrow a = 0.00032$

ans → d.) 0.00032.

05. 85% of $\frac{4}{7}$ of 6755 = ? + 1687

Sol^n :-

$\frac{85}{100}$ of $\frac{4}{7}$ of 6755 = ? + 1687

$\Rightarrow \frac{85}{25}$ of $\frac{1}{7}$ of $\overset{1351}{6755}$ = ? + 1687

$\Rightarrow 17$ of $\frac{1}{7}$ of $\overset{193}{1351}$ = ? + 1687

$\Rightarrow 17 \times 193 = ? + 1687$

$\Rightarrow ? = 3281 - 1687$

$\Rightarrow ? = 1594.$

ans → c.) 1594.

06. $\left(999\frac{999}{1000} \times 7\right)$ is equal to :-

Sol^n :-

$= \left(999 + \frac{999}{1000}\right) \times 7$

$= \left(1000 - 1 + \frac{999}{1000}\right) \times 7$

$= \left(1000 - \frac{1000 + 999}{1000}\right) \times 7$

$= \left(1000 - \frac{1}{1000}\right) \times 7$

$= \left(\frac{7000000 - 7}{1000}\right)$

$= \frac{6999993}{1000}$

$= 6999\frac{993}{1000}$

ans → d.) $6999\frac{993}{1000}$.

07. $999\frac{294}{297} \times 99 = ?$

Sol^n :-

$\left(999 + \frac{294}{297}\right) \times 99$

$= \left(1000 - 1 + \frac{294}{297}\right) \times 99$

$= \left(1000 - \frac{297 + 294}{297}\right) \times 99$

$= \left(1000 - \frac{3}{297}\right) \times 99$

$= \left(\frac{297000 - 3}{297}\right) \times 99$

$= \frac{296997}{3}$ 98999

$= 98999$

ans → a.) 98999.

08. $3\frac{1}{2} - \left[2\frac{1}{4} \div \left\{1\frac{1}{4} - \frac{1}{2}\left(1\frac{1}{2} - \frac{1}{3} - \frac{1}{6}\right)\right\}\right]$

Sol^{n} :-

$\because \frac{7}{2} - \left[\frac{9}{4} \div \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{3}{2} - \frac{1}{3} - \frac{1}{6}\right)\right\}\right]$

$= \frac{7}{2} - \left[\frac{9}{4} \div \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{9-2-1}{6}\right)\right\}\right]$

$= \frac{7}{2} - \left[\frac{9}{4} \div \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{9-3}{6}\right)\right\}\right]$

$= \frac{7}{2} - \left[\frac{9}{4} \div \left\{\frac{5}{4} - \frac{1}{2} \times \frac{6^{1}}{6}\right\}\right]$

$= \frac{7}{2} - \left[\frac{9}{4} \div \left\{\frac{5-2}{4}\right\}\right]$

$= \frac{7}{2} - \left[\frac{9}{4} \div \frac{3}{4}\right]$

$= \frac{7}{2} - \left[\frac{9^{3}}{4} \times \frac{4}{3}\right]$

$= \frac{7}{2} - \frac{3}{1}$

$= \frac{7-6}{2}$

$= \frac{1}{2}$

ans → a.) $\frac{1}{2}$

09. निम्नलिखित में से किसका मान 1 है?

a.) $\frac{0.323}{323 \times 0.1}$ b.) $\frac{0.323}{32.3 \times 0.1}$

c.) $\frac{0.323}{323 \times 1}$ d.) $\frac{3.23}{32.3 \times 0.1}$

Sol^{n} :- Solve from option.

a.) $\frac{0.323}{323 \times 0.1} = \frac{0.323}{323 \times 0.1 \times 1000} = 0.01$.

b.) $\frac{0.323}{32.3 \times 0.1} = \frac{0.323 \times 10 \times 10}{32.3 \times 0.1 \times 1000} = \frac{1}{10} = 0.1$

c.) $\frac{0.323}{323 \times 1} = \frac{0.323}{323 \times 1 \times 1000} = \frac{1}{1000} = 0.001$

d.) $\frac{3.23}{32.3 \times 0.1} = \frac{3.23 \times 10 \times 10}{32.3 \times 0.1 \times 100} = 1$

∴ ans → d.) $\frac{3.23}{32.3 \times 0.1}$.

10. यदि $a*b = \frac{a+2b}{3}$. तब $[(4*7)*8] - [4*(7*8)]$ का मान है।

Sol^{n}:- $a*b = \frac{a+2b}{3}$

$= [(4*7)*8] - [4*(7*8)]$

$= \left[\left(\frac{4+2\times7}{3}\right)*8\right] - \left[4*\left(\frac{7+2\times8}{3}\right)\right]$

$= \left[\left(\frac{4+14}{3}\right)*8\right] - \left[4*\left(\frac{7+16}{3}\right)\right]$

$= \left[\left(\frac{\overset{6}{\cancel{18}}}{\cancel{3}}\right)*8\right] - \left[4*\left(\frac{23}{3}\right)\right]$

$= [6*8] - \left[4*\frac{23}{3}\right]$

$= \left[\frac{6+2\times8}{3}\right] - \left[\frac{4+2\times\frac{23}{3}}{3}\right]$

$= \left[\frac{6+16}{3}\right] - \left[\frac{4+\frac{46}{3}}{3}\right]$

$= \left[\frac{22}{3}\right] - \left[\frac{\frac{12+46}{3}}{3}\right]$

$= \frac{22}{3} - \left[\frac{58}{3}\times\frac{1}{3}\right]$

$= \frac{22}{3} - \frac{58}{9}$

$= \frac{66-58}{9}$

$= \frac{8}{9}$

ans→ b) $\frac{8}{9}$.

(11) $99\frac{1}{7} + 99\frac{2}{7} + 99\frac{3}{7} + \cdots + 99\frac{14}{7}$

$(99 + 99 + 99 + \cdots + 99) + \left(\frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \cdots \frac{14}{7}\right)$

99 का 14 पद (term) है

$(99 \times 14) + \frac{n(n+1)}{2 \times 7}$

$(99 \times 14) + \frac{14 \times 15}{2 \times 7}$

$99 \times 14 + 15 = 1386 + 15$

$\Rightarrow \boxed{1401} \Rightarrow$ B Ans

(12) $\frac{1}{1\times3\times5} + \frac{1}{1\times4} + \frac{1}{3\times5\times7} + \frac{1}{4\times7} +$

$\frac{1}{5\times7\times9} + \frac{1}{7\times10} + \cdots$ up to 20 terms

Solve A) $\left(\frac{1}{1\times3\times5} + \frac{1}{3\times5\times7} + \frac{1}{5\times7\times9} + \cdots 10 \text{ terms}\right)$

B) $\left(\frac{1}{1\times4} + \frac{1}{4\times7} + \frac{1}{7\times10} + \cdots 10 \text{ terms}\right)$

$A = \frac{1}{1\times3\times5} + \frac{1}{3\times5\times7} + \cdots \frac{1}{19\times21\times23}$

$B = \frac{1}{1\times4} + \frac{1}{4\times7} + \cdots \frac{1}{28\times31}$

$A \Rightarrow \frac{1}{4}\left(\frac{1}{1\times3} - \frac{1}{21\times23}\right)$

$\Rightarrow \frac{1}{4}\left(\frac{161-1}{483}\right) \Rightarrow \frac{1}{4} \times \frac{160}{483} = \frac{40}{483}$

$B = \frac{1}{3}\left(\frac{1}{1} - \frac{1}{31}\right) \Rightarrow \frac{1}{3} \times \frac{30}{31} = \frac{10}{31}$

$\frac{40}{483} + \frac{10}{31} = \frac{1240 + 4830}{483 \times 31}$

$\Rightarrow \boxed{\frac{6070}{14973}}$ Ans

Ans → B

(13) $5 - \cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{2+\cfrac{1}{6}}}} = 5 - \cfrac{1}{1+\cfrac{1}{\frac{13}{6}}}$

$\Rightarrow 5 - \cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{\frac{13}{6}}}} \Rightarrow 5 - \cfrac{1}{1+\cfrac{1}{3+\frac{6}{13}}}$

$\Rightarrow 5 - \cfrac{1}{1+\cfrac{1}{\frac{45}{3}}} \Rightarrow 5 - \frac{1}{1+\frac{13}{45}} = 5 - \frac{1}{\frac{58}{45}}$

$\Rightarrow 5 - \frac{45}{58} \Rightarrow \frac{290-45}{58}$

$\Rightarrow \boxed{\frac{245}{58}}$ Ans ⇒ C

(14) $x-[y-\{z-(x-\overline{y-z}\}]=?$

Solve $\overline{y-z} = y-z$

$\Rightarrow x-[y-\{z-(x-(y-z)\}]$

$\Rightarrow x-[y-\{z-(x-y+z)\}]$

$= x-[y-\{z-x+y-z\}]$

$= x-[y+x-y]$

$\Rightarrow x-x=0$ Ans $\Rightarrow$ D

(15) $A=\frac{1}{1\times2}, B=\frac{1}{2\times3}, C=\frac{1}{3\times4}$ .... then $A+B+C+$ .... then $A+B+C+\ldots+Z=?$

Solve $\frac{1}{1\times2}+\frac{1}{2\times3}+\frac{1}{3\times4}+\ldots+\frac{1}{26\times27}$

$\Rightarrow \left(\frac{1}{1}-\frac{1}{27}\right) \Rightarrow \frac{26}{27}$ Ans $\Rightarrow$ B

(16) $9\cdot5-[5\cdot4-\{6\cdot1-(3\cdot2-\overline{2\cdot1-1})\}]=?$

$\Rightarrow 9\cdot5-[5\cdot4-\{6\cdot1-(3\cdot2-1\cdot1)\}]$

$\Rightarrow 9\cdot5-[5\cdot4-\{6\cdot1-2\cdot1\}]$

$\Rightarrow 9\cdot5-[5\cdot4-4]$

$\Rightarrow 9\cdot5-1\cdot4 \Rightarrow \boxed{8\cdot1}$ Ans = D

(17) $\left(1-\frac{1}{10^2}\right)\left(1-\frac{1}{11^2}\right)\left(1-\frac{1}{12^2}\right)\cdots\left(1-\frac{1}{100^2}\right)$

$\left[1^2-\left(\frac{1}{10}\right)^2\right]\left[1^2-\left(\frac{1}{11}\right)^2\right]\left[1^2-\left(\frac{1}{12}\right)^2\right]\cdots\left(1^2-\left(\frac{1}{100}\right)^2\right.$

$\left[\left(1-\frac{1}{10}\right)\left(1+\frac{1}{10}\right)\right]\left[\left(1-\frac{1}{11}\right)\left(1+\frac{1}{11}\right)\right]\left[\left(1-\frac{1}{12}\right)\left(1+\frac{1}{12}\right)\right]\cdots\left(1-\frac{1}{100}\right)\left(1+\right.$

$\frac{9}{10}\times\frac{11}{10}\times\frac{10}{11}\times\frac{12}{10}\times\frac{11}{12}\times\frac{13}{12}\cdots\frac{100}{99}\times\frac{99}{100}\times\frac{101}{100}$

$\Rightarrow \frac{9}{10}\times\frac{101}{100} \Rightarrow \boxed{\frac{909}{1000}}$ Ans $\Rightarrow$ D

(18) $1\frac{1}{2}+4\frac{1}{6}+7\frac{1}{12}+10\frac{1}{120}+\ldots$ up to 15 terms

Solve

$(1+4+7+10+\ldots$ up to 15 term$)+$

$\left(\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\ldots\right.$ up to 15 term$)$

$\Rightarrow\left(\frac{1}{1\times2}+\frac{1}{2\times3}+\frac{1}{3\times4}+\frac{1}{4\times5}+\ldots\frac{1}{15\times16}\right)$

$+(1+4+7+10+\ldots 43)$

$\therefore\left(\frac{43+1}{2}\right)\times\left(\frac{43-1}{3}+1\right)+\left(1-\frac{1}{16}\right)$

$\left(\frac{44\times22}{2}\times15\right)+\frac{15}{16}$

$\Rightarrow 22\times15+\frac{15}{16}$

$\Rightarrow \boxed{330\frac{15}{16}}$ Ans = A

(19) $999\frac{999}{1000} \times 7 = ?$

Solve $\frac{999 \times 1000 + 999}{1000} \times 7$

$\Rightarrow \frac{999000 + 999}{1000} \times 7$

$\Rightarrow \frac{999999}{1000} \times 7 \Rightarrow \frac{6999993}{1000}$

$\Rightarrow \boxed{6999\frac{993}{1000}}$ Ans

Ans - D

(20) $\frac{9 \div 2 \times 27 \div 9}{18 \div 7.5 \times 5 \div 4} = ?$

Solve $\frac{\frac{9}{2} \times \frac{27}{9}}{\frac{18}{7.5} \times \frac{5}{4}} \Rightarrow \frac{\frac{27}{2}}{\frac{18 \times 10 \times 2}{75} \times \frac{5}{4}}$

$\Rightarrow \frac{27}{2 \times 3} = \frac{27}{6}$

$\Rightarrow \boxed{4.5}$ Ans $\Rightarrow$ A

(21) $\left[\frac{1}{3.5} + \frac{1}{5.7} + \frac{1}{7.9} + \frac{1}{9.11} + \frac{1}{11.13}\right] = ?$

$= \frac{1}{2}\left[\frac{1}{3} - \frac{1}{13}\right]$

$\Rightarrow \frac{1}{2}\left[\frac{13-3}{39}\right] = \frac{1}{2} \times \frac{10}{39}$

$\Rightarrow \boxed{\frac{5}{39}}$ Ans $\Rightarrow$ D

(22) $185 \times 28 = 5180$ then $51.80 \div 18.5$

Solve $\frac{51.80}{18.5} \Rightarrow 2.8$ Ans $\Rightarrow$ A

(23) $\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\cdots\left(1-\frac{1}{99}\right)\left(1-\frac{1}{100}\right)$

Solve $\frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \cdots \times \frac{98}{99} \times \frac{99}{100}$

$\Rightarrow \frac{2}{100} = \boxed{\frac{1}{50}}$ Ans $\Rightarrow$ C

(24) $0.2 \times 0.003 \times 0.004 \times 0.005$

$\Rightarrow 0.2 \times 0.003 \times 0.004 \times 0.005$

$\Rightarrow \boxed{0.000000012}$ Ans $\Rightarrow$ A

(25) $$\frac{0.1 \times 0.1 \times 0.1 + 0.02 \times 0.02 \times 0.02}{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}$$

$x = 0.1, \quad y = 0.02$

$$\frac{x^3+y^3}{(2x)^3+(2y)^3} = \frac{x^3+y^3}{8x^3+8y^3}$$

$$\Rightarrow \frac{1}{8}\left(\frac{x^3+y^3}{x^3+y^3}\right)$$

$$= \frac{1}{8} \Rightarrow \boxed{0.125}$$

Ans

Ans $\Rightarrow$ B