1. $\left(2^3-\frac{2^8-2}{2^5}\right):\left(2-\frac{2^2-1}{2}\right)$

$\left(\frac{2^8-2^8+2}{2^5}\right):\left(\frac{2^2-2^2+1}{2}\right)$

$\frac{2}{2^5}:\frac{1}{2}$

$\frac{2}{2^5}.2=\frac{2^2}{2^5}=\frac{1}{2^3}=\frac{1}{8}$

Cevap: E

2. $\frac{(-1)^{40}.(-1)^{43}+(-1)^{49}}{(-1)^{100}.(-1)^{103}}=\frac{1.(-1)+(-1)}{1.(-1)}$

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

Cevap: A

3. $\left[\frac{3}{3^{-1}}+\left(\frac{1}{3^{-1}}\right)^{-1}\right].3$

$=\left(9+\frac{1}{3}\right).3$

$=\frac{28}{3}.3$

$=28$

Cevap: A

4. $\frac{3^0+3^1+3^3}{5^0+5^{-1}+5^{-2}}=\frac{1+3+27}{\underset{(25)}{\frac{1}{1}}+\underset{(5)}{\frac{1}{5}}+\frac{1}{25}}$

$=\frac{31}{\frac{25+5+1}{25}}$

$=\frac{31}{\frac{31}{25}}=\cancel{31}.\frac{25}{\cancel{31}}=25$

Cevap: D

5. $x=0,25=\frac{25}{100}=\frac{1}{4}$

$y=0,4=\frac{4}{10}=\frac{2}{5}$

$\Rightarrow \frac{x^{-1}+y^{-1}}{x+y}=\frac{\left(\frac{1}{4}\right)^{-1}+\left(\frac{2}{5}\right)^{-1}}{\underset{(5)}{\frac{1}{4}}-\underset{(4)}{\frac{2}{5}}}=\frac{4+\frac{5}{2}}{\frac{13}{20}}=\frac{\frac{13}{2}}{\frac{13}{20}}$

$=\frac{13}{2}.\frac{20}{13}$

$=10$ olur.

Cevap: C

6. $\frac{15^{-8}25^4}{9^{-6}}=\frac{(3.5)^{-8}.(5^2)^4}{(3^2)^{-6}}$

$=\frac{3^{-8}.5^{-8}.5^8}{3^{-12}}$

$=3^{-8}.3^{12}.5^{-8}.5^8$

$=3^{-8+12}.5^{-8+8}$

$=3^4.5^0$

$=81$

Cevap: B

7. $\left(\frac{5x}{y}\right)^5.\left(\frac{4y}{5z}\right)^5.\left(\frac{z}{2x}\right)^5$

$\left(\frac{\cancel{5}x}{\cancel{y}}.\frac{4\cancel{y}}{\cancel{5}z}.\frac{\cancel{z}}{2\cancel{x}}\right)^5=2^5=32$

Cevap: C

8. $(0{,}125)^{1000}.2^{2020}$

$= \left(\frac{125}{1000}\right)^{1000}.2^{2020}$

$= \left(\frac{1}{8}\right)^{1000}.2^{2020}$

$= \left(\frac{1}{2^3}\right)^{1000}.2^{2020}$

$= \frac{2^{2020}}{2^{3000}} = 2^{-980}$

Cevap: A

9. $\frac{4^{2017}+4^{2018}}{4^{2019}+4^{2020}}$

$\frac{4^{2017}(1+4)}{4^{2019}(1+4)} = 4^{2017-2019} = 4^{-2} = \frac{1}{16}$

Cevap: D

10. $\frac{10^{-2}+10^{-3}+10^{-4}}{10^2+10+1} = \frac{10^{-4}(10^2+10+1)}{10^2+10+1} = 10^{-4}$

Cevap: A

11. $\frac{25^{a+5}+25^{a+3}+25^{a+1}}{25^{a-3}+25^{a-1}+25^{a+1}}$

$= \frac{25^{a+1}.(25^4+25^2+1)}{25^{a-3}.(1+25^2+25^4)}$

$= 25^{a+1-a+3}$

$= 25^4$

$= 5^8$

Cevap: D

12. $\frac{3^n+3^{n+2}}{3^{n-1}} - \frac{2^n+2^{n+1}}{2^{n-2}}$

$= \frac{3^n(1+3^2)}{3^n.3^{-1}} - \frac{2^n(1+2)}{2^n.2^{-2}}$

$= \frac{10}{\frac{1}{3}} - \frac{3}{\frac{1}{4}}$

$= 30 - 12$

$= 18$

Cevap: E

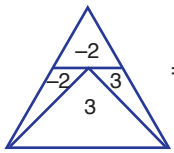
13. $(4^n+4^n+4^n+4^n).\frac{25}{100}$

$= (4.4^n).\frac{1}{4}$

$= 4^n$

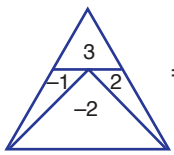
Cevap: B

14.



$= (-2)^3 - 3^{-2}$

$= -8 - \frac{1}{9} = -\frac{73}{9}$



$= 3^2 - (-2)^{-1}$

$= 9 - \left(-\frac{1}{2}\right)$

$= 9 + \frac{1}{2} = \frac{19}{2}$

$-\frac{73}{9} + \frac{19}{2} = \frac{-146+171}{18} = \frac{25}{18}$

(2) (9)

Cevap: C