

Ans 1. $4^3 \times 4^{-9}$
 $= 4^{-9+3} = 4^{-6}$

Ans 2. $\left\{ \frac{1}{2}^{-1} + \frac{1}{3}^{-1} + \frac{1}{4}^{-1} \right\}$
 $= \left(\frac{1}{2} + \frac{1}{3} + \frac{1}{4} \right)^{-1}$
 $= \left(\frac{6}{12} + \frac{4}{12} + \frac{3}{12} \right)^{-1}$
 $= \left(\frac{13}{12} \right)^{-1}$

Ans 3. $(2^{-1} \times 3^{-1})^{-1}$
 $= ((2 \times 3)^{-1})^{-1}$
 $= 6^1$

Ans 4. $\left(\frac{5}{7}\right)^{65} \div \left(\frac{5}{7}\right)^{32}$

$$= \left(\frac{5}{7}\right)^{65-32}$$

$$= \left(\frac{5}{7}\right)^{33}$$

Ans 5. $27^{\frac{4}{6}} \div 27^{\frac{1}{3}}$

$$= 27^{\frac{4}{6} - \frac{1}{3}}$$

$$= 27^{\frac{4}{6} - \frac{2}{6}}$$

$$= 27^{\frac{2}{6}}$$

Ans 6.

3	675	$675 = 3 \times 3 \times 3 \times 5 \times 5$ $675 = 3^3 \times 5^2$
3	225	
3	75	
5	25	
5	5	
	1	

$$\text{Ans 7. } \{5^{-1} \div 6^{-1}\}^3$$

$$= (5^{-3} \div 6^{-3})$$

$$= \left(\frac{1^3}{5} \div \frac{1^3}{6} \right)$$

$$= \frac{1}{125} \div \frac{1}{216}$$

$$= \frac{1}{125} \times 216$$

$$= \frac{216}{125}$$

$$\text{Ans 8. } \{3^{-1} \times 4^{-1}\}^{-1} \times 5^{-1}$$

$$= (3^1 \times 4^1) \times 5^{-1}$$

$$= 12 \times 5^{-1}$$

$$= 60^{-1}$$

$$= \frac{1}{60}$$

$$60$$

$$\text{Ans 9. } \left(\frac{-2}{5} \right)^5 \div \left(\frac{-2}{5} \right)^5$$

$$= \frac{-2^{5-5}}{5}$$

$$= \frac{-2^0}{5}$$

$$= 1$$

$$\text{Ans 10. } 3^3 + -2^{-2}$$

$$= 81 + 4$$

$$= 85$$

$$3^{-2} + -2^3$$

$$= (-9) + (-8)$$

$$= -17$$

$$\begin{aligned}
 \text{Ans 11.} \quad & \left\{ \left(\frac{1}{3} \right)^{-2} - \left(\frac{1}{2} \right)^{-3} \right\} \div \left(\frac{1}{4} \right)^{-2} \\
 &= (3^2 - 2^3) \div 4^2 \\
 &= (6 - 8) \div 16 \\
 &= -2 \div 16 \\
 &= \frac{-2}{16} \\
 &= \frac{-1}{8}
 \end{aligned}$$

$$ii. \left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-5}$$

$$= \left(\frac{8}{5}\right)^7 \times \left(\frac{8}{5}\right)^{-5}$$

$$= \frac{8}{5}^{7+(-5)}$$

$$= \frac{8^2}{5}$$

$$Ans 12i. (3^{-7} \div 3^{-10}) \times 3^{-5}$$

$$= 3^{(-7)-(-10)} \times 3^{-5}$$

$$= 3^3 \times 3^{-5}$$

$$= 3^{3+(-5)}$$

$$= 3^{-2}$$

$$\begin{aligned}
 \text{ii. } & (2^{-17} \div 2^{10}) \times (5^{10} \times 5^{-6}) \\
 &= 2^{-17 - (-10)} \times 5^{10 + (-6)} \\
 &= 2^{-7} \times 5^4 \\
 &= 10^{-7+4} \\
 &= 10^{-3} \\
 &= \frac{1}{10^3}
 \end{aligned}$$

$$\begin{aligned}
 \text{Ans 13 i. } & \left(\frac{2}{3}\right)^{-8} \times \left(\frac{3}{2}\right)^4 \\
 &= \left(\frac{3}{2}\right)^8 \times \left(\frac{3}{2}\right)^4 \\
 &= \left(\frac{3}{2}\right)^{8+4} \\
 &= \left(\frac{3}{2}\right)^{12}
 \end{aligned}$$