EXERCISE 12.1 - Question No. 1

Evaluate. (i) 3^{-2} (ii) $(-4)^{-2}$ (iii) $\left(\frac{1}{2}\right)^{-5}$

EXERCISE 12.1 - Question No. 2

Simplify and express the result in power notation with positive exponent. (i) $(-4)^5 \div (-4)^8$ (ii) $\left(\frac{1}{2^3}\right)^2$ (iii) $(-3)^4 \times \left(\frac{5}{3}\right)^4$ (iv) $\left(3^{-7} \div 3^{-10}\right) \times 3^{-5}$ (v) $2^{-3} \times (-7)^{-3}$

EXERCISE 12.1 - Question No. 3

Find the value of. (i) $\left(3^{+}4^{-1}\right) \times 2^{2}$ (ii) $\left(2^{-1} \times 4^{-1}\right) \div 2^{-1}$ (iii) $\left(\frac{1}{2}\right)^{-2}+\left(\frac{1}{3}\right)^{-2}+\left(\frac{1}{4}\right)^{-2}$ (iv) $\left(3^{-1}+4^{-1}+5^{-1}\right)^{0}$ (v) $\left\{\left(\frac{-2}{3}\right)^{-2}\right\}^{2}$

EXERCISE 12.1 - Question No. 4

Evaluate (i) $\frac{8^{-1} \times 5^{3}}{2^{-4}}$ (ii) $\left(5^{-1} \times 2^{-1}\right) \times 6^{-1}$

EXERCISE 12.1 - Question No. 5

Find the value of m for which $5^m \div 5^{-3} = 5^5$.

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EXERCISE 12.1 - Question No. 6

Evaluate $\left\{\left(\frac{1}{3}\right)^{-1} - \left(\frac{1}{4}\right)^{-1}\right\}^{-1}$ (ii) $\left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-4}$

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EXERCISE 12.1 - Question No. 7

Simplify. (i) $\frac{25 \times t^{-4}}{5^3 \times 10 \times t^{-8}} (t \neq 0)$ (ii) $\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$

EXERCISE 12.2 - Question No. 1

Express the following numbers in standard form. (i)

0.0000000000085 (ii) 0.00000000000942 (iii) 6020000000000000

(iv) 0.00000000837 (v) 31860000000

EXERCISE 12.2 - Question No. 2

Express the following numbers in usual form. (i) 3.02×10^{-6} (ii)

45×10^{4} (iii) $3 \times 10(-8)$ (iv) 10001×10^{9} (v) 58×10^{12} (vi)

361492×10^{6}

EXERCISE 12.2 - Question No. 3

Express the number appearing in the following statements in standard form. (i) 1 micron is equal to $\frac{1}{1000000}$

EXERCISE 12.2 - Question No. 4

In a stack there are 5 books each of thickness 20mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack.

SOLVED EXAMPLES - Question No. 1

Find the value of (i) 2^{-3} (ii) $\frac{1}{3^{-2}}$

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SOLVED EXAMPLES - Question No. 2

Simplify (i) $(-4)^5 \times (-4)^{-10}$ (ii) $2^5 \div 2^{-6}$

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SOLVED EXAMPLES - Question No. 3

Express 4^{-3} as a power with the base 2

SOLVED EXAMPLES - Question No. 4

Simplify and write the answer in the exponential form. (i)

$\left(2^{5} \div 2^{8}\right)^{5} \times 2^{-5}$ (ii) $(-4)^{-3} \times (5)^{-3} \times (-5)^{-3}$ (iii)

$\frac{1}{8} \times (3)^{-3}$ (iv) $(-3)64 \times \left(\frac{5}{3}\right)^{4}$

SOLVED EXAMPLES - Question No. 5

Find m so that $(-3)^{m+1} \times (-3)^{5} = (-3)^{7}$

SOLVED EXAMPLES - Question No. 6

Find the value of $\left(\frac{2}{3}\right)^{-2}$

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SOLVED EXAMPLES - Question No. 7

Simplify (i) $\left\{\left(\frac{1}{3}\right)^{-2}-\left(\frac{1}{2}\right)^{-3}\right\} \div\left(\frac{1}{4}\right)^{-2}$. (ii) $\left(\frac{5}{8}\right)^{-7} \times\left(\frac{8}{5}\right)^{-5}$.

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SOLVED EXAMPLES - Question No. 8

Express the following numbers in standard form. (i) 0.000035 (ii)

4050000

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SOLVED EXAMPLES - Question No. 9

Express the following numbers in usual form. (i) 3.52×10^{2} (ii)

7.54×10^{-4} (iii) 3×10^{05}

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