12. Exponents and Powers

Q 1

$$(-2)^5 \div (-2)^8$$

Mark (1)

Q 2 Simplify: $(-3)^2 \times (5/3)^2$

Mark (1)

Q 3 Find the value of $\left[\left(\dfrac{-2}{3} \right)^{-2} \right]^1$.

Mark (1)

Q 4 Express 3×10^{-7} in usual form.

Mark (1)

Q 5 Evaluate 6^{-2}.

Mark (1)

Q 6 Write 0.000021 in standard form.

Mark (1)

Q 7 Write 41860000000 in standard form.

Mark (1)

Q 8 Express 4.5×10^4 in usual form.

Mark (1)

Q 9 Evaluate: $(2^{-1} + 3^{-1} + 4^{-1})^0$

Mark (1)

Q 10 Find the value of $(4^{-1} \times 2^{-1}) \times 3^{-1}$.

Mark (1)

Q 11 Expand 1526.26 using exponents.

Marks (2)

Q 12 Expand 1026.13 using exponents.

Marks (2)

Q 13 Find x such that $(-2)^{x+1} \times (-2)^5 = (-2)^7$.

Marks (2)

Q 14 Express 8^{-3} as power with the base 2.

Marks (2)

Q 15 Simplify $(-2)^{-3}$ x $(-3)^{-3}$ x $(4)^{-3}$ and write the answer in exponential form.

Marks (2)

Q 16 Find the value of $(4^0 + 3^{-1})$ x 3^2.

Marks (2)

Q 17 Simplify: 2^3 x 2^{-5} x 2^6

Marks (2)

Q 18 Find the value of $\left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}$.

Marks (2)

Q 19 Find the value of $\left(\frac{5}{7}\right)^{-2}$.

Marks (2)

Q 20 Simplify: $(-3)^4 \times \left(\frac{1}{3}\right)^4$

Marks (2)

Q 21 Simplify $\left[\left(\frac{1}{3}\right)^{-2} - \left(\frac{1}{2}\right)^{-2}\right] \div \left(\frac{1}{4}\right)^{-2}$.

Marks (3)

Q 22 Evaluate $\left(\frac{5}{9}\right)^{-7} \times \left(\frac{9}{5}\right)^{-4}$.

Marks (3)

Q 23 In a stack there are 6 books each of thickness 20 mm and 5 sheets each of thickness 0.015 mm. Find the total thickness of the stack?

Marks (3)

Q 24 Find 'a' such that $(-5)^{a+2}$ x $(-5)^4 = (-5)^9$.

Marks (3)

Q 25 **Simplify** $\left(\dfrac{2}{3}\right)^{-7} \times \left(\dfrac{3}{2}\right)^{-5}$.

Marks (3)

Q 26

Simplify $\dfrac{25 \times a^{-4}}{5^{-3} \times 10 \times a^{-8}}$, Where a $\neq 0$

Marks (3)

Q 27 Compare the size of a red blood cell which is 0.000007 m to that of a plant cell which is 0.00001275 m.

Marks (5)

Q 28 **Simplify** $\dfrac{3^{-5} \times 10^{-5} \times 125}{6^{-5} \times 5^{-7}}$.

Marks (5)

Most Important Questions

Q 1 Find the value of

a) 2^2

b) 2^{-2}

Q 2 Find the value of $(1/2)^{-1}$.

Q 3 Calculate the value of $2^3 \times 2^4$

Q 4 What is the exponential notation of $(2^3)^5$

Q 5 Simplify and express in positive exponential form.

$(-3)^{-7} \times (-3)^{-8}$

Q 6 Simplify the following exponents

$(-2)^2 \times (-3)^2 \times (-5)^2$

Q 7 Find the value of n in the given expression:

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

Q 8 Find the value of p in the given expression

$(-3)^{p-3} (-3)^{-3p+1} = (-3)^5$

Q 9 Write the given expressions in expanded form.

     a)   3456.234

     b)   2016.123

Q 10 Express the following numbers in their standard form.

     a)   0.0000000000468

     b)   0.345

     c)   372400000000000

     d)   76100000000

Q 11 Express the following numbers in their usual form:

     a) 3.05×10^{-6}

     b) 4.5×10^4

     c) 3.1563×10^6