P 3

Integer exponent and scientific notation

1) The expression $\frac{(0.00002)(6.9\times10^{8})}{23}$ in scientific notation, is equal to

A) 6×10^{2}

B) 6×10

C) 3×10^{2}

D) 2×10^{2}

E) 6×10^{-2}

2) If $\frac{(12800)(2\times10^{6})}{0.0064} = m\times10^{n}$, then $m+n=$

A) 16

B) 13

C) 15

D) 14

E) 12

3) If $M = -2^{-2}.(-4)^{0}$ and $N = -\frac{2}{5}\div1.6$, then the distance between M and N is equal to

A) 0

B) $\frac{1}{4}$

C) $\frac{1}{2}$

D) $-\frac{84}{25}$

E) $-\frac{1}{2}$

4) If $x \neq 0$, $y \neq 0$, and $\dfrac{3(x^4 y^{-1})^{-1}(-2x^{-2})^{-2}}{(2^{-1}y^{-2})^2} = kx^a y^b$, then $k + a + b =$

A) 8

B) $\dfrac{16}{3}$

C) -43

D) 0

E) $-\dfrac{3}{16}$

5) The **decimal notation** of the expression $\dfrac{(1.6 \times 10^3)(5.1 \times 10^{-5})}{4.8 \times 10^2}$, is

A) 0.00017

B) 0.000017

C) 0.0014

D) 140000

E) 0.0017

6) Let $A = 0.0018$, $B = 400000$, and $C = 0.0002$. If $\dfrac{AB}{C}$ is written in **scientific notation**, then $\dfrac{AB}{C} =$

A) 3.6×10^6

B) 36×10^5

C) 3600000

D) 1.8×10^6

E) 18×10^5

7) If $\frac{(3x^{-2}y^{-3})^{-2}}{27xy} = \frac{x^m y^n}{3^k}$, then $n + m + k =$

A) 13

B) 6

C) 3

D) 5

E) 11

8) The number $(-2^{-2} + 3^{-1})^{-1}$ is equal to

A) 12

B) -12

C) 5

D) -5

E) $\frac{12}{7}$

9) 1. The number $\frac{(6.9\times10^{29})(7.5\times10^{-14})}{0.023\times10^{16}}$ written in scientific notation is given by

(a) 2.25×10^{2}

(b) 22.25×10^{6}

(c) 2.25×10^{-2}

(d) 0.225×10^{4}

(e) 2.25×10^{-5}

10) If $\left(\frac{x^{3n}y^{2n}}{x^{-2n}y^{3n+1}}\right) = x^{An+B}y^{Cn+D}$, then $A+B+D =$

(a) 4
(b) 2
(c) –4
(d) –3
(e) 7

11) The number $\frac{(6.9\times10^{29})(7.5\times10^{-14})}{0.023\times10^{16}}$ written in scientific notation is given by

(a) 2.25×10^{2}
(b) 22.25×10^{6}
(c) 2.25×10^{-2}
(d) 0.225×10^{4}
(e) 2.25×10^{-5}

12) If $2^{x-1} = y$, then $2^{3x-2} =$

(a) $2y^3$
(b) $4y^3$
(c) $y^3/8$
(d) $y^3/4$
(e) $y^3/2$

13) If $p \neq 0$, then which one of the following statements is FALSE

A) $-3p^0 = -1$

B) $3p^0 = 3$

C) $(-3p)^0 = 1$

D) $-(3p^0) = -3$

E) $(3p)^0 = 1$

14) If $p = 3$ and $q = 2$, then the value of $\frac{p^{-1} + q^{-1}}{1 - (pq)^{-1}}$ =

A) 1

B) $\frac{5}{7}$

C) $\frac{25}{36}$

D) $-\frac{1}{6}$

E) -1

15) $\frac{(-2x^3)^2 (xy)^{-3}}{(3x^{-5}y^2)^{-2}}$ =

A) $\frac{36y}{x^7}$

B) $\frac{36x}{y^7}$

C) $\frac{4y}{9x}$

D) $-\frac{9y}{4x}$

E) $36xy$