EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Exponents

Grade : SSC Grade VII

1. Simplify the expression $\left(\frac{-2}{7}\right)^{7} \times \left(\frac{-2}{7}\right)^{3}$

(i) $\left(\frac{-2}{7}\right)^{21}$ (ii) $\left(\frac{-2}{7}\right)^{23}$ (iii) $\left(\frac{-2}{9}\right)^{21}$ (iv) $\left(\frac{-2}{7}\right)^{18}$ (v) $\left(\frac{-2}{5}\right)^{21}$

2. $[3^{2}]^{4} =$

(i) 6^{8} (ii) 3^{5} (iii) 3^{8} (iv) 3^{9} (v) 3^{7}

3. Write the given number in usual form 2.729462×10^{-5}

(i) 0.0000002729462 (ii) 0.0002729462 (iii) 0.00002729462 (iv) 0.002729462 (v) 0.000002729462

4. $\frac{(-7)^{3}}{(-7)^{6}} =$

(i) $(-5)^{-3}$ (ii) $(-7)^{-3}$ (iii) $(-7)^{-2}$ (iv) $(-7)^{-4}$ (v) $(-10)^{-3}$

5. $\frac{\left(5^{(-3)}\right)^{6} \times \left(6^{(-2)}\right)^{4} \times \left(8^{5}\right)^{-5}}{\left(5^{5}\right)^{3} \times \left(6^{4}\right)^{4} \times \left(8^{(-2)}\right)^{4}} =$

(i) $5^{(-33)} \times 6^{(-23)} \times 8^{(-17)}$ (ii) $5^{(-33)} \times 6^{(-24)} \times 8^{(-17)}$ (iii) $5^{(-33)} \times 6^{(-24)} \times 8^{(-16)}$

(iv) $5^{(-32)} \times 6^{(-24)} \times 8^{(-17)}$

6. The exponent in the term 3^{5} is

(i) -3 (ii) $\frac{5}{1}$ (iii) 3 (iv) -5

7. $\frac{5^{9}}{5^{-6}} =$

(i) 5^{15} (ii) 5^{16} (iii) 8^{15} (iv) 5^{14} (v) 3^{15}

8. Simplify the expression $\left(\frac{5}{4}\right)^{7} \times \left(\frac{5}{4}\right)^{7}$

(i) $\left(\frac{7}{4}\right)^{14}$ (ii) $\left(\frac{5}{4}\right)^{15}$ (iii) $\left(\frac{5}{4}\right)^{14}$ (iv) $\left(\frac{5}{4}\right)^{13}$ (v) $\left(\frac{3}{4}\right)^{14}$

9. Simplify the expression $\left(\frac{9}{5}\right)_{(-3)} \times \left(\frac{9}{5}\right)_{(-3)} \times \left(\frac{9}{5}\right)_{(-9)}$

(i) $\left(\frac{9}{5}\right)_{(-81)}$ (ii) $\left(\frac{9}{7}\right)_{(-81)}$ (iii) $\left(\frac{9}{5}\right)_{(-78)}$ (iv) $(-81)^3$ (v) $\left(\frac{9}{5}\right)_{(-83)}$

10. Find the exponential notation of $\left(\frac{-3}{4}\right)$

(i) $\frac{-1\times3}{(-1)^2}$ (ii) $\frac{-1\times3^2}{2^2}$ (iii) $\frac{-1\times3}{5^2}$ (iv) $\frac{-2\times3}{2^2}$ (v) $\frac{-1\times3}{2^2}$

11. Which of the following statements are true?

a) $a^m . a^n = a^{mn}$

b) $\frac{x^m}{x^n} = x^{\frac{m}{n}}$

c) $a . x^m = a^m . x^m$

d) $\left(x^m\right)^n = x^{(m+n)}$

e) $\left(x^m\right)^n = \left(x^n\right)^m$

f) $a^0 = 1 \ (a \neq 0)$

(i) {e,f} (ii) {a,e} (iii) {c,d,e} (iv) {a,f,e} (v) {b,f}

12. The power in the term 5^6 is

(i) $\frac{6}{1}$ (ii) -5 (iii) 4 (iv) 5 (v) -6

Find the exponential notation of

13. $\left(\frac{-8}{3}\right) \times \left(\frac{-8}{3}\right) \times \left(\frac{-8}{3}\right)$

(i) $\left(\frac{-8}{3}\right)^2$ (ii) $\left(\frac{-8}{3}\right)^4$ (iii) $(-2)^3$ (iv) $\left(\frac{-10}{3}\right)^3$ (v) $\left(\frac{-8}{3}\right)^3$

14. Represent the given large number in standard form
-4281043×10^{6}

(i) -4.281043×10^{12} (ii) -4.281043×10^{14} (iii) -4.281043×10^{10} (iv) -4.281043×10^{11}

(v) -4.281043×10^{13}

15. $(-4)^{-7} =$

(i) $\left(\frac{-3}{4}\right)^{7}$ (ii) $\left(\frac{-1}{4}\right)^{7}$ (iii) $\left(\frac{-1}{4}\right)^{8}$ (iv) $\left(\frac{-1}{4}\right)^{6}$ (v) $\left(\frac{1}{4}\right)^{7}$

16. Find the exponential notation of
$-19 \times -19 \times -19 \times -19$

(i) $(-19)^{3}$ (ii) $(-19)^{5}$ (iii) $(-22)^{4}$ (iv) $(-16)^{4}$ (v) $(-19)^{4}$

17. Expand the following base power 3^{-4}

(i) $\frac{1}{27}$ (ii) $\frac{1}{81}$ (iii) $\frac{1}{625}$ (iv) 1 (v) $\frac{1}{243}$

18. The value of $\left(\frac{5}{3}\right)^{-3} \times \left(\frac{-5}{3}\right)^{-2}$

(i) $\frac{243}{3125}$ (ii) $\frac{241}{3125}$ (iii) $\frac{27}{347}$ (iv) $\frac{49}{625}$ (v) $\left(\frac{243}{3125}\right)^{2}$

19. Simplify the expression $2^{4} \times \left(\frac{6}{5}\right)^{4} \times \left(\frac{4}{3}\right)^{4}$

(i) $\left(\frac{16}{5}\right)^{5}$ (ii) $\left(\frac{14}{5}\right)^{4}$ (iii) $\left(\frac{16}{5}\right)^{4}$ (iv) $\left(\frac{16}{5}\right)^{3}$ (v) $\left(\frac{18}{5}\right)^{4}$

20. Simplify the expression $\left(\frac{7}{6}\right)^{(5/2)} \times \left(\frac{8}{3}\right)^{(5/2)}$

(i) $\left(\frac{28}{9}\right)^{(5/2)}$ (ii) $\left(\frac{28}{9}\right)^{5}$ (iii) $\left(\frac{10}{3}\right)^{(5/2)}$ (iv) $\left(\frac{28}{9}\right)^{(5/4)}$ (v) $\left(\frac{26}{9}\right)^{(5/2)}$

21. Simplify $\frac{(-4)^{-2} \times 2^{-2}}{(-2)^{-2} \times 4^{-2}}$

(i) 0 (ii) -2 (iii) 3 (iv) 2 (v) 1

22. Simplify the expression $\left(\frac{3}{2}\right)^{9} \times \left(\frac{3}{2}\right)^{9} \times \left(\frac{3}{2}\right)^{9}$

(i) $\left(\frac{1}{2}\right)^{27}$ (ii) $\left(\frac{3}{2}\right)^{26}$ (iii) $\left(\frac{3}{2}\right)^{28}$ (iv) $\left(\frac{3}{2}\right)^{27}$ (v) $\left(\frac{5}{2}\right)^{27}$

23. $\left(\left(\frac{-3}{8}\right) \times \frac{7}{6}\right)^{-5/8} =$

(i) $\left(\frac{-3}{8}\right)^{(-5/8)} \times \left(\frac{3}{2}\right)^{(-5/8)}$ (ii) $\left(\frac{-3}{8}\right)^{(-5/8)} \times \left(\frac{7}{6}\right)^{(-5/8)}$ (iii) $\left(\frac{-3}{8}\right)^{(-5/8)} \times \left(\frac{7}{6}\right)^{(-1/2)}$ (iv) $\left(\frac{-3}{8}\right)^{(-5/8)} \times \left(\frac{7}{6}\right)^{(-5/6)}$

(v) $\left(\frac{-3}{8}\right)^{(-5/8)} \times \left(\frac{5}{6}\right)^{(-5/8)}$

24. Simplify $\left(\frac{8^{f} . 81^{(f-4)} . 100^{(f-5)}}{64^{(f-4)} . 9^{(f-5)} . 10^{(f-1)}}\right)$

(i) $8^{(-f+8)} . 9^{(-f+6)} . 10^{(-f-3)}$ (ii) $8^{4} . 9^{1} . 10^{(-4)}$ (iii) $8^{(f+4)} . 9^{(-f+6)} . 10^{(-f-3)}$

(iv) $8^{(-f+8)} . 9^{(f-3)} . 10^{(f-9)}$

25. Simplify $\frac{(-4)^{2} \times (-4)^{-3}}{(-4)^{3} \times 4^{-3}}$

(i) 2^{-2} (ii) 2^{-3} (iii) 5^{-2} (iv) $(-1)^{-2}$ (v) 2^{-1}

Assignment Key

1) (i)	2) (iii)	3) (iii)	4) (ii)	5) (ii)	6) (ii)
7) (i)	8) (iii)	9) (i)	10) (v)	11) (i)	12) (i)
13) (v)	14) (i)	15) (ii)	16) (v)	17) (ii)	18) (i)
19) (iii)	20) (i)	21) (v)	22) (iv)	23) (ii)	24) (iv)
25) (i)					