EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Exponents

Grade : SSC Grade VII

1. $(-5)^{-2} =$

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

2. If $m^{s} = n$, $n^{t} = o$ and $o^{u} = m$, then $stu =$

   (i) $(m+n+o)$ (ii) mno (iii) 0 (iv) -1 (v) 1

3. Represent the given small number in scientific form
   0.001064957

   (i) 1.064957×10^{-4} (ii) 1.064957×10^{-1} (iii) 1.064957×10^{-3} (iv) 1.064957×10^{-2} (v) 1.064957×10^{-5}

4. The exponent in the term $\left(\frac{9}{4}\right)^{7}$ is

   (i) $\left(\frac{-9}{4}\right)$ (ii) -7 (iii) 7 (iv) $\frac{9}{4}$ (v) 4

5. Expand the following base power $(-3)^{-5}$

   (i) $\left(\frac{-1}{27}\right)$ (ii) $\left(\frac{-1}{3125}\right)$ (iii) $\frac{1}{81}$ (iv) $\left(\frac{-1}{243}\right)$ (v) $\frac{1}{729}$

6. The power in the term $\left(\frac{7}{3}\right)^{2}$ is

   (i) -2 (ii) -1 (iii) $\left(\frac{-7}{3}\right)$ (iv) $\frac{7}{3}$ (v) 2

7. $30 \times d \times d \times d \times e \times e =$

   (i) $27\,d^{3}e^{2}$ (ii) $33\,d^{3}e^{2}$ (iii) $30\,d^{4}e^{2}$ (iv) $30\,d^{3}e^{2}$ (v) $30\,d^{2}e^{2}$

8. The base in the term 4^{7} is

   (i) 7 (ii) 4 (iii) 1 (iv) -4 (v) -7

9. $\left[\left(\frac{5}{4}\right)^{(-4/5)}\right]^{5/2}$ =

(i) $\left(\frac{7}{4}\right)^{-2}$ (ii) $\left(\frac{3}{4}\right)^{-2}$ (iii) $\left(\frac{5}{4}\right)^{-1}$ (iv) $\left(\frac{5}{4}\right)^{-2}$ (v) $\left(\frac{5}{4}\right)^{-3}$

10. $\left(\frac{1}{6}\right)^{-2} + \left(\frac{1}{4}\right)^{-4} + \left(\frac{1}{4}\right)^{-4} + \left(\frac{1}{5}\right)^{-3}$ =

(i) 674 (ii) 672 (iii) 676 (iv) 671 (v) 673

11. Simplify the expression $(-6)^4 \times (-5)^4$

(i) 30^5 (ii) 30^3 (iii) 33^4 (iv) 30^4 (v) 28^4

12. Simplify the expression $(-9)^{-7} \times (-9)^{\left(\frac{-7}{8}\right)} \times (-9)^{\left(\frac{-7}{4}\right)}$

(i) $(-6)^{\left(\frac{-77}{8}\right)}$ (ii) $(-9)^{\left(\frac{-77}{8}\right)}$ (iii) $(-12)^{\left(\frac{-77}{8}\right)}$ (iv) $(-9)^{\left(\frac{-19}{2}\right)}$ (v) $(-9)^{\left(\frac{-59}{6}\right)}$

13. Simplify the expression $\left(\frac{7}{6}\right)^{(-7/5)} \times \left(\frac{7}{6}\right)^{(-8/3)} \times \left(\frac{7}{6}\right)^{(-7/4)}$

(i) $\left(\frac{5}{6}\right)^{(-349/60)}$ (ii) $\left(\frac{7}{6}\right)^{(-349/60)}$ (iii) $\left(\frac{3}{2}\right)^{(-349/60)}$ (iv) $\left(\frac{7}{6}\right)^{(-339/58)}$ (v) $\left(\frac{7}{6}\right)^{(-359/62)}$

14. Simplify the expression $(-4)^{\left(\frac{3}{2}\right)} \times (-4)^{\left(\frac{3}{2}\right)}$

(i) $(-2)^3$ (ii) $(-4)^4$ (iii) $(-4)^3$ (iv) $(-4)^2$ (v) $(-6)^3$

15. Simplify $\frac{3^{-3} \times 4^2}{(-4)^{-2} \times (-5)^3}$

(i) $\frac{(-1)^2 \times 2^8}{3^3 \times 5^3}$ (ii) $\frac{-1 \times 2^8}{5^3 \times 5^3}$ (iii) $\frac{-2 \times 2^8}{3^3 \times 5^3}$ (iv) $\frac{-1 \times 2^8}{3^3 \times 5^3}$ (v) $\frac{-1 \times 2^8}{3^3 \times 3^3}$

16. Simplify $\left(z^{(e+f)}\right)^{(e-f)}\left(z^{(f+g)}\right)^{(f-g)}\left(z^{(g+e)}\right)^{(g-e)}$

(i) 1 (ii) 0 (iii) -1 (iv) $z^{(e+f+g)}$ (v) z

17. $\left(\frac{9}{8}\right)^{6} =$

(i) $\frac{9^7}{8^6}$ (ii) $\frac{9^6}{6^6}$ (iii) $\frac{9^6}{10^6}$ (iv) $\frac{9^6}{8^6}$ (v) $\frac{9^5}{8^6}$

18. If $2^{(10q+1)} = 8^{(3q+3)}$, find q

(i) 10 (ii) 7 (iii) 9 (iv) 8 (v) 5

19. $b^4 c^4 =$

(i) $b\times b\times b\times c\times c\times c\times c$ (ii) $b\times b\times b\times b\times b\times c\times c\times c\times c$ (iii) $4\times b\times b\times b\times b\times c\times c\times c\times c$

(iv) $-b\times b\times b\times b\times c\times c\times c\times c$ (v) $b\times b\times b\times b\times c\times c\times c\times c$

20. If $3^{(4d+4)}\div 81 = 3^{12}$, find d

(i) 3 (ii) 6 (iii) 4 (iv) 0 (v) 2

21. Simplify the expression $2^9\times 2^9$

(i) 2^{15} (ii) 2^{17} (iii) 2^{18} (iv) 4^{18} (v) 2^{19}

22. Find the exponential notation of
$3\times 3\times 3\times 3\times 3\times 3$

(i) 3^5 (ii) 3^6 (iii) 3^3 (iv) 3^7 (v) 5^6

23. Simplify the expression $(-4)^{-9}\times(-4)^{-6}$

(i) $(-6)^{-15}$ (ii) $(-4)^{-16}$ (iii) $(-4)^{-14}$ (iv) $(-4)^{-15}$ (v) $(-1)^{-15}$

24. Simplify the expression $2^{-4}\times 2^{-3}\times 2^{-4}$

(i) 5^{-11} (ii) 2^{-11} (iii) 2^{-10} (iv) 2^{-12} (v) 2^{-13}

25. Find the exponential notation of $\left(\frac{-8}{15}\right)$

(i) $\frac{-1\times 2^3}{3\times 5}$ (ii) $\frac{-1\times 2^2}{3\times 5}$ (iii) $\frac{-1\times 2^3}{5\times 5}$ (iv) $\frac{-1\times 2^4}{3\times 5}$ (v) $\frac{-1\times 2^3}{3^{-1}\times 5}$

Assignment Key

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