

CLASS – VII, SUBJECT – MATHEMATICS
CHAPTER 4(EXPONENTS AND POWERS)
WORKSHEET, (BASIC LEVEL)

Choose the correct option (10 x 1=10)

1. $8^3 \times 8^4$ is equal to

- a. 8^{12} b. 64^7 c. 2^{21} d. none of these

2. Which of the following is not equal to $3 \times 3 \times 3 \times 3 \times 3 \times 3$?

- a. 3^6 b. 18 c. 9^3 d. 729

3. $[(4)^2]^3$ is equal to

- a. 4^8 b. 4^6 c. 4^5 d. 4^{23}

4. 245^0 is same as

- a. 245 b. 0 c. 1 d. meaningless

5. 2.7×10^{-3} is equal to

- a. 0.000027 b. 0.00027 c. 0.0027 d. 2.007

6. $a^m \times a^n$ is equal to

- a. a^{mn} b. a^{m+n} c. a^{m-n} d. $a^{m/n}$

7. $(-1)^{1001}$ is same as

- a. 1 b. -1 c. 1001 d. 0

8. 6^{-1} is same as

- a. 6 b. $1/6$ c. -6 d. $-1/6$

9. The value of $(-2)^{-5}$ is

a. -32

b. 10

c. $-1/32$

d. $1/32$

10. Which of the following is not true?

a. $2^4 = 4^2$

b. $2^4 = 8$

c. $2^3 < 3^2$

d. $3^3 = 27$

Answer the followings (10 x 1=10)

11. Write the base and exponent of $(-1/3)^4$.

12. Express $2 \times 3 \times 2 \times 3 \times 2 \times 3 \times 2 \times 3$ in exponential form.

13. Express 7^9 in the product form.

14. Express $(3/4)^3$ in the form of p/q .

15. Find the reciprocal of 9^2 .

16. Express $(1/3)^{-2}$ with positive exponent.

17. Write 3 crore in standard form.

18. Write 7.2×10^3 in usual form.

19. Which power of 7 is 343?

20. Express $(9^{-4})^3$ as a single exponent of 9?

Short answer type (10 x 2=20)

21. Express $-\frac{8}{125}$ as a power of rational number.

22. Write the reciprocal of $(-6/7)^5 \div 7^0$

23. Evaluate and express the result in p/q form.

$$(-3/7)^3 \div (6/7)^2$$

24. If $a = (4/5)^{-1} \div (8/7)^0$, then find the value of a^2

25. Find the value of x if $[(4/7)^3]^{-4} = (4/7)^{6x}$

26. Express $(-11)^2 \times (-7)^2$ in single exponential form.

27. Which is greater 3^{12} or 6^6 ?

28. Find x if $(-3)^{x-2} = -243$

29. Evaluate: $(5/6)^6 \div (-5/6)^4$

30. Evaluate: $1^0 + 2^0 + 3^0 + 4^0 + 5^0$

Choose the correct option (5 x 1=5)

1. Which expression is equivalent to 81?

- a. 2^9 b. $(1/3)^{-4}$ c. 3^{-4} d. $(1/3)^4$

2. $-(-3)^4$ is equal to

- a. 81 b. -81 c. $(3)^4$ b. both a and c

3. Which power of 8 is equal to 2^6 .

- a.3 b.2 c.1 d.4

4. $(-6/5)^{-1}$ equal to

- a.6/5 b.-6/5 c.5/6 d.-5/6

5. Which of the following is greatest?

- a. 4^{-2} b. 4^{-3} c. 3^{-4} d. 3^{-2}

Answer the followings (5 x 1=5)

6. Express 0.00987 in standard form.

7. Which power of 9 is equal to 3^8 ?

8. Express $(-3)^2 \times (-7)^{-2}$ in single exponential form.

9. How many times 8 must be added to get a sum equal to 8^{15} ?

10. Which is greater 3^{12} or 6^6 ?

Short answer type (10 x2=20)

11. If $4^x=128$, then find the value of x.

12. By what number should $(-3)^{-2}$ be multiplied so that the product may be equal to 9?

13. Simplify -: $(2^{-1} - 3^{-1})^2$

14. Write exponential form for $9 \times 9 \times 9$ taking base as 3.

15. Write $(\frac{3}{4})^{-3}$ in the form of p/q .

16. Compare 3.8×10^{27} ; 1.9×10^{28}

17. Find the value of $\{(3^0 + 2^0) \times 5^0\}^{-2}$

18. Find the value of $(-1)^6 \times (-1)^5 \times (-1)^4 \times (-1)^3 \times (-1)^2 \times (-1)^1$

19. By what number should $(-12)^{-1}$ be divided so that the quotient may be equal to $(-4)^{-1}$?

20. 5 books and 5 paper sheets are placed in a stack. Express the total thickness of the stack in standard form if each book has a thickness of 20 mm and each sheet has a thickness of 0.016 mm.

1. If $3^{3000} - 3^{2999} - 3^{2998} + 3^{2997} = a \cdot 3^{2998}$, then find the value of a .

2. Simplify $\{(4/5)^3\}^2 \div (1/4)^{-2} \times 4^{-1}$.

5. Find n if $2^{n-5} \times 6^{2n-4} = \frac{1}{12^4} \times \frac{1}{2}$

6. If $2^{n-1} + 2^{n+1} = 320$, then find the value of n .

7. Find the value of $(4^x + 4^{x+2})/4^x$

10. If $a^x = b$, $b^y = c$, $c^z = a$ then find value of xyz