INDICES

Law of Indices Worksheet

For students preparing for MAH-B.BCA/BBA/BMS/BBM CET 2024 for admission to BCA, BBA, BMS, BBM

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1. $27 \times 243 = ?$

   A. (3^8)
   B. (3^9)
   C. (3^{10})
   D. $(3^{11}$

2. $\left[\left(\frac{x}{y}\right)^3\right]^{-2} = ?$

   A. $\left(\frac{x}{y}\right)^{-6}$
   B. $\left(\frac{x}{y}\right)^{1}$
   C. $\left(\frac{x}{y}\right)^{6}$
   D. $\left(\frac{x}{y}\right)^{5}$

3. $(x^4)^3 = ?$

   A. x^{4+3}
   B. x^{12}
   C. $x^{4/3}$
   D. x^{4-3}

4. $x^{1/8} \div x^{3/4}$

   A. $x^{5/8}$
   B. $x^{2/4}$
   C. $x^{2/8}$
   D. $\frac{1}{x^5/8}$

5. $\left[27^{-2/3}\right]^{1/2} = ?$

   A. $\frac{27}{54}$
   B. $\frac{2}{3}$
   C. $\frac{1}{3}$
   D. $\frac{1}{9}$

6. $\left[x^4 y^{5/3}\right]^{-3/4} = ?$

   A. $x^{-3}y^{-5/4}$
   B. $x^{2}y^{-3/2}$
   C. $x^{3}y^{-20/9}$
   D. $x^{-3}y^{7/4}$

7. $\left(x\frac{-3}{4}\right)^{-4} = ?$

   A. x^3
   B. x^{-3}
   C. $x\frac{-81}{264}$
   D. x^7

8. $(x^2)^4 \times \left(\frac{1}{\sqrt{x}}\right)^2 = ?$

   A. x^6
   B. x^4
   C. x^7
   D. x^8

9. $\sqrt{(ab)^2} = ?$
   A. $a^2 \cdot b^2$
   B. $a.b.$
   C. $a \cdot b^2$
   D. $a^2 \cdot b^4$

10. $\left[4^3 \times 8^2 \times (x^6)^{-1/2}\right]^{1/3}$
   A. $32x^5$
   B. $16x^9$
   C. $\frac{16}{x}$
   D. $72x^2$

11. $(64x^3 \div 125y^{-3})^{2/3}$
   A. $\frac{4}{5}x^2y^2$
   B. $\frac{32}{25}x^3y^3$
   C. $\frac{16}{25}xy$
   D. $\frac{16}{25}x^2y^2$

12. $\sqrt{x^4y^2 \times 4\sqrt{x^8y^{-16}}}$
   A. x^4y^{-3}
   B. x^8y^{-2}
   C. x^4y^{-2}
   D. x^4y

13. $(a^x)^y \times (a^y)^z \times (a^{-z})^y$
   A. a^{xyz}
   B. a^{xy}
   C. a^{xz}
   D. a^{yz}

14. $(\sqrt{(x+y)^3} \times 3^{\sqrt{(x+y)^2}})$
   A. $(x+y)\frac{13}{6}$
   B. $(x+y)\frac{6}{13}$
   C. $(x-y)\frac{13}{6}$
   D. $(x-y)\frac{6}{13}$

15. $\left(\frac{a^m}{a^n}\right)^{\frac{1}{mn}} \times \left(\frac{a^n}{a^1}\right)^{\frac{1}{nl}} \times \left(\frac{a^1}{a^m}\right)^{\frac{1}{1m}}$
   A. $\frac{a^m}{a^n}$
   B. $\frac{a^{ml}}{a^{nl}}$
   C. 1
   D. $\frac{a^{mnl}}{a^{mn}}$

16. $\left(\frac{x^a}{x^b}\right)^{a+b} \times \left(\frac{x^b}{x^c}\right)^{b+c} \times \left(\frac{x^c}{x^a}\right)^{c+a}$
   A. $\frac{x^{ac}}{x^{bc}}$
   B. $\frac{x^{2a+b+c}}{x^{abc}}$
   C. $\frac{x^{abc}}{x^{ac}}$
   D. 1

17. $(x^ny^{-m})^3 \times (x^3y^2)^{-n}$
   A. yx^{3m+2n}
   B. y^{3m+2n}
   C. y^{-3m+2n}
   D. $y^{-(3m+2n)}$

18. $\left(-\frac{1}{125}\right)^{\frac{-2}{3}} = ?$
   A. -25
   B. $-\frac{1}{5}$
   C. $\frac{1}{25}$
   D. 25

19. $(243)^{0.12} \times (243)^{0.08} = ?$
   A. 243
   B. 3
   C. 9
   D. 6

20. $\sqrt{a^5} \times a^{3/4} \times 4^{\sqrt{a^{-5}}} = ?$
   A. a^2
   B. $a^{15/16}$
   C. $a^{3/4}$
   D. a^3

21. $if\ 3^{x-1} = 81\ then\ find\ the\ value\ of\ x$
   A. 6
   B. 5
   C. 4
   D. 9

22. $if\ x + y = 0\ find\ the\ value\ of\ a^x \times a^y$
   A. 0
   B. 1
   C. a^{x4}
   D. a

23. $if\ 2^{x+7} = 4^{x+2}\ find\ the\ value\ of\ x\ ?$
   A. 3
   B. 4
   C. 5
   D. 1

24. $x^{a-b} \times x^{b-c} \times x^{c-a} = ?$
   A. x^{2abc}
   B. x
   C. 1
   D. 0

25. $2^{2^3} - (2^3)^2 = ?$
   A. 2
   B. 192
   C. 184
   D. 52

26. $\frac{(27)^{2n3} \times (8)^{-D6}}{(18)^{-n2}} = ?$
   A. 3^{2n}
   B. 2^n
   C. 3^{3n}
   D. 27n

27. $\frac{3^{2-x} \times 9^{2x-2}}{3^{3x}} = ?$
   A. $\frac{1}{3}$
   B. $\frac{1}{6}$
   C. $\frac{1}{9}$
   D. 9

28. $\frac{2^n + 2^{n-1}}{2^{n+1} - 2^n} = ?$
   A. 1
   B. $1\frac{1}{2}$
   C. $\frac{1}{2}$
   D. 2^n

29. $if\ 16^{x+1} = \frac{64}{4^x}\ then\ x = ?$
   A. $\frac{4}{3}$
   B. $\frac{2}{3}$
   C. $\frac{1}{3}$
   D. $\frac{3}{4}$

30. $\left(\frac{16}{625}\right)^{\frac{3}{4}} \times \left(\frac{1}{243}\right)^{\frac{-2}{5}} \times (512)^{\frac{-1}{3}}$
   A. $\frac{9}{125}$
   B. $\frac{4}{5}$
   C. $\frac{3}{5}$
   D. $\frac{1}{25}$

Answer Key

1. A	2. A	3. B	4. D	5. C	6. A	7. A	8. C	9. B	10. C
11. C	12. A	13. B	14. A	15. C	16. D	17. D	18. A	19. B	20. A
21. B	22. B	23. A	24. C	25. B	26. C	27. C	28. B	29. C	30. A