



[IIT Allahabad 2000]

- (a) 1
- (b) 2
- (c) 3
- (d) 4

10.

- (a)
- (b)
- (c)
- (d) None of these

Logarithms

1. For $\log_a x$ to be defined 'a' must be [IIT 1990]
- (a) Any positive real number
 - (b) Any number
 - (c)
 - (d) Any positive real number

2. Logarithm of $\log_2 8$ to the base 2 is
- (a) 3.6
 - (b) 5
 - (c) 5.6
 - (d) None of these

3. The number $\log_2 8$ is [IIT 1990; Pb CET 2002]
- (a) An integer
 - (b) A rational number
 - (c) An irrational number
 - (d) A prime number

4. If $\log_2 8 = x$ then 2^x is equal to [Roorkee 1999]
- (a)
 - (b)
 - (c)
 - (d)

5. If $\log_2 8 = x$, then relation between a and b will be [UPSEAT 2000]
- (a)
 - (b)
 - (c)
 - (d)

6. Which is the correct order for a given number in increasing order [Roorkee 2000]
- (a)
 - (b)
 - (c)
 - (d)

- 7.
- (a)
 - (b)
 - (c)
 - (d) None of these

8. The value of $\log_2 8$ is
- (a) -2
 - (b)
 - (c) 2
 - (d) None of these

9. The value of $\log_2 8$ is

11. The value of $\log_2 8$ is equal to
- (a) 49
 - (b) 625
 - (c) 216
 - (d) 890

12. $\log_2 8$ is equal to [EAMCET 1990]
- (a) 0
 - (b) 1
 - (c)
 - (d)

13. If $\log_2 8 = x$ and $\log_2 16 = y$ then $x + y$ is equal to
- (a)
 - (b)
 - (c)
 - (d)

14. If $\log_2 8 = x$ then x is equal to
- (a) k
 - (b)
 - (c) 5
 - (d) None of these

15. If $\log_2 8 = x$ then x is equal to
- (a) 125
 - (b)
 - (c) 25
 - (d) None of these

16. If $\log_2 8 = x$ then x is
- (a)
 - (b)
 - (c)
 - (d)

17. If $\log_2 8 = x$ then A is equal to [WB JEE 1992]
- (a) 2
 - (b) 3
 - (c) 5
 - (d) 7

18. If $\log_2 8 = x$ then x is equal to
- (a)
 - (b)
 - (c)
 - (d)

19. If $\log_2 8 = x$ then which of the following is equal to 1
- (a)
 - (b)
 - (c)



- (d) None of these
20. If $\log_2 x = 2$ and $\log_3 y = 3$ then $1+abc$ is equal to [SCRA 2000]
- (a) 1 (b) 2 (c) 3 (d) 0
21. If $\log_2 x = 2$ then value of xyz is
- (a) 0 (b) 1 (c) 2 (d) 3
22. If $\log_2 x = 2$ the number of digits in x is
- (a) 7 (b) 8 (c) 9 (d) 10
23. If $\log_2 x = 2$
- (a) 1 (b) 2 (c) 3 (d) None of these
24. The solution of the equation $\log_2 x = 2$ is [UPSEAT 2000]
- (a) 1 (b) 2 (c) 3 (d) None of these
25. $\log_2 18$ is
- (a) A rational number (b) An irrational number (c) A prime number (d) None of these
26. The value of $\log_2 81$ is
- (a) 81 (b) 20 (c) 20 (d) None of these
27. If a, b, c are distinct positive numbers, each different from 1, such that $\log_a b = \log_b c = \log_c a$ then $abc =$
- (a) 1 (b) 2 (c) 3 (d) None of these
28. If $\log_2 x = 2$ then $\log_3 x$ is [EAMCET 1990]
- (a) 1 (b) 2 (c) 3 (d) None of these
29. If $\log_2 x = 2$ then which of the following is true [Karnataka CET 2004]
- (a) 1 (b) 2 (c) 3 (d) None of these
30. The number of real values of the parameter k for which $\log_2 x = k$ with real coefficients will have exactly one solution is
- (a) 2 (b) 1 (c) 4 (d) None of these
31. If $\log_2 x = 2$ then x has
- (a) One positive integral value (b) One irrational value (c) Two positive rational values (d) None of these
32. If $\log_2 x = 2$ and $\log_3 y = 3$ then $\log_6 xy$ is
- (a) 1 (b) 2 (c) 3 (d) None of these
33. If $\log_2 x = 2$ then x be
- (a) 2 (b) 3 (c) 3.5 (d) None of these
34. If $\log_2 x = 2$ then the number of values of x which are integral multiples of 2 is
- (a) 4 (b) 12 (c) 3 (d) None of these
35. The set of real values of x satisfying $\log_2 x = 2$ is
- (a) 1 (b) 2 (c) 3 (d) None of these
36. The set of real values of x for which $\log_2 x = 2$ is
- (a) 1 (b) 2 (c) 3 (d) None of these
37. If $\log_2 x = 2$ then x belongs to the interval
- (a) 1 (b) 2 (c) 3 (d) None of these
38. The set of real values of x for which $\log_2 x = 2$ is
- (a) 1 (b) 2 (c) 3 (d) None of these
39. If $\log_2 x = 2$ then xyz is [UPSEAT 2003]
- (a) 0 (b) 1 (c) 3 (d) None of these
40. The value of $\log_2 81$ is [AMU 2005]
- (a) 0 (b) 1 (c) 2 (d) 100!



Indices and Surds

1. For $a^m \cdot a^n = a^p$, then $p =$
- (a) 1 (b) x
 (c) Does not exist (d) None of these
2. If $a^m = a^n$ and $a \neq 1$, then $m = n$
- (a) $11/48$ (b) $11/24$
 (c) $11/8$ (d) $11/96$
3. $2^3 \cdot 2^4 \cdot 2^5 = 2^x$
- (a) 1 (b) 3
 (c) -1 (d) 0
4. If $a^m = a^n$, then $x =$ [UPSEAT 1999]
- (a) 1 (b) 3
 (c) 4 (d) 0
5. The greatest number among a^m, a^n, a^p is a^q
- (a) a^m (b) a^n
 (c) a^p (d) Can not be determined
6. The value of $a^m \cdot a^n$ is a^p
- (a) a^m (b) a^n
 (c) a^p (d) a^{m+n}
7. The rationalising factor of \sqrt{a} is \sqrt{a}
- (a) \sqrt{a} (b) a
 (c) a^2 (d) a^3
8. $\sqrt{a} \cdot \sqrt{a}$ is equal to a
- (a) a (b) a^2
 (c) a^3 (d) a^4
9. $a^m \cdot a^n = a^p$
- (a) a^m (b) a^n
 (c) a^p (d) None of these
10. The equation $a^m = a^n$, has
- (a) One solution (b) Two solution
 (c) Four solution (d) No solution
11. $a^m \cdot a^n = a^p$
- (a) a^m (b) a^n
 (c) a^p (d) None of these
12. If $a^m = a^n$, then the value of 'm' in terms of 'n' is
- (a) n (b) n^2
 (c) n^3 (d) None of these
13. $a^m \cdot a^n = a^p$
- (a) a^m (b) a^n
 (c) a^p (d) None of these
14. If $a^m = a^n$ and $a \neq 1$, then $m = n$
- (a) y (b) $2y$
 (c) $2xyz$ (d) None of these
15. If $a^m = a^n$, then $m = n$
- (a) 0 (b) 1
 (c) a (d) a^2
16. If $a^m = a^n$, then $m = n$
- (a) a (b) a^2
 (c) a^3 (d) None of these
17. If $a^m = a^n$, then $m = n$
- (a) 1 (b) 0
 (c) abc (d) None of these
18. If $a^m = a^n$, then $m = n$
- (a) 0 (b) 1
 (c) n (d) $2n$
19. If $a^m = a^n$, then $m = n$ where $a \neq 1$
- (a) 0 (b) 1
 (c) -1 (d) None of these
20. If $a^m = a^n$, then $x =$
- (a) 1 (b) -1
 (c) 0 (d) $64/27$
21. If $a^m = a^n$, then $m = n$
- (a) 0 (b) 1
 (c) xy (d) None of these
22. If $a^m = a^n$, then $m = n$
- (a) 1 (b) 2
 (c) 3 (d) None of these
23. Solution of the equation $a^m = a^n$ are
- (a) $9/4$ (b) 1
 (c) -1 (d) 0
24. If $a^m = a^n$, then x may have the value
- (a) 25 (b) 1
 (c) 3 (d) None of these
25. Let $a^m = a^n$, then $m = n$
- (a) a (b) a^2
 (c) a^3 (d) None of these
26. Solution of the equation $a^m = a^n$ has the solution
- (a) 3 (b) 2
 (c) $3/2$ (d) $2/3$



27. Solution of the equation
- (a) (b) (c) (d) None of these
- 28.
- (a) 1 (b) $\frac{7}{13}$
(c) $\frac{13}{7}$ (d) None of these
29. If then
- (a) (b) (c) (d) None of these
- 30.
- (a) (b) (c) (d)
31. =
- (a) Rational (b) Surd
(c) Multiple of (d) None of these
- 32.
- (a) 0 (b) 1
(c) (d)
- 33.
- (a) (b) (c) (d) None of these
- 34.
- (a) (b) (c) (d) 0
35. The rationalising factor of is
- (a) (b) (c) (d) None of these
36. The value of
- (a) (b) (c) (d) None of these
37. The square root of is
- (a) (b) (c) (d)
- 38.
- (a) (b) (c) (d)
39. The value of is
- (a) (b) (c) (d)
40. The cube root of is
- (a) (b) (c) (d)
41. If then $x =$
- (a) (b) (c) (d) None of these
42. If and then =
- (a) 400 (b) 368
(c) 352 (d) 200
43. If then
- (a) 5 (b) (c) (d)
44. If and then
- (a) (b) (c) (d)
45. Solution of the equation are
- (a) 0 (b) 6
(c) 4 (d) None of these
- 46.
- (a) 1 (b) -1
(c) 0 (d) None of these

Partial fractions

1. If , then [MNR 1993]
- (a) 1 (b) 2
(c) $\frac{9}{4}$ (d) $-\frac{1}{4}$



2. If $\log_2 x = 3$, then $\log_4 x =$ [IIT 1996]
 (a) 3 (b) 6
 (c) 9 (d) 12
3. If $\log_2 x = 3$, then $\log_8 x =$ [EAMCET 1994]
 (a) $-1/2$ (b) $15/4$
 (c) $7/4$ (d) $-1/4$
4. The partial fractions of $\frac{1}{x^2 - 1}$ are [MNR 1995]
 (a) $\frac{1}{2(x-1)} + \frac{1}{2(x+1)}$ (b) $\frac{1}{2(x-1)} - \frac{1}{2(x+1)}$
 (c) $\frac{1}{2(x-1)}$ (d) $\frac{1}{2(x+1)}$
5. If $\log_2 x = 3$, then $\log_4 x =$ [EAMCET 1997, 98]
 (a) 3 (b) 6
 (c) 9 (d) 12
6. If $\log_2 x = 3$, then $\log_4 x =$ [EAMCET 1996]
 (a) (7, 10) (b) (10, 7)
 (c) (10, -7) (d) (-10, 7)
7. The coefficient of x^3 in the expression $(1+x)^{10}$ when expanded in ascending order is [MNR 1993]
 (a) 10 (b) 120
 (c) 120 (d) None of these
8. The remainder obtained when the polynomial $x^3 + 2x^2 + 3x + 4$ is divided by $x - 1$ is [EAMCET 1991]
 (a) 3 (b) 5
 (c) 7 (d) 11
9. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) 6
 (c) 9 (d) None of these
10. If $\log_2 x = 3$, then $\log_8 x =$
 (a) $-1/2$ (b) $15/4$
 (c) $7/4$ (d) $-1/4$
11. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) 6
 (c) 9 (d) None of these
12. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 1 (b) 3
 (c) 5 (d) 7
13. If $\log_2 x = 3$, then $\log_4 x =$
 (a) (7, 10) (b) (10, 7)
 (c) (10, -7) (d) (-10, 7)
14. If the remainders of the polynomial $x^3 + 2x^2 + 3x + 4$ when divided by $x - 6$, $x - 3$, $x - 15$ then the remainder of $x^3 + 2x^2 + 3x + 4$ when divided by $x^2 - 18x + 90$ is
 (a) 1 (b) 3
 (c) 5 (d) 7
15. If $\log_2 x = 3$, then $\log_4 x =$
 (a) $\pi/8$ (b) $\pi/4$
 (c) $\pi/2$ (d) π
16. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) 6
 (c) 9 (d) None of these
17. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) -1
 (c) 5 (d) None of these
18. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) 6
 (c) 9 (d) None of these
19. If $\log_2 x = 3$, then $\log_4 x =$
 (a) 3 (b) 6
 (c) 9 (d) None of these

Logarithms, Indices and Surds, Partial Fractions 29



- (b) (a) (2, 3) (b) (3, 2)
(c) (-2, 3) (d) (-3, 2)
- (c) 28. , then $C =$
(a) 5 (b) 4
(c) 3 (d) 1
- (d) 29. The partial fractions of are
(a) (b)
(c) (d)
20. The partial fractions of is
(a)
(b)
(c)
(d) None of these
21. If , then
(a) (b)
(c) (d) None of these
22. If , then
(a) (b)
(c) (d)
23. [MNR 1994] is
(a) (b) (a) $-15/16$ (b) $15/16$
(c) (d) None of these (c) $-16/15$ (d) $16/15$
24. If , then
(a) 2 (b) 3
(c) 4 (d) 5
25. , then [IIT 1995]
(a) (1, -1, 0) (b)
(c) (d) None of these
26. (a) (b)
(c) (d)
27. , then
(a) (b) (c) (1, 2) (d) None of these
30. The partial fraction of
(a) (b)
(c) (d) None of these
31. If = , then
(a) (b)
(c) 1 (d)
32. The coefficient of in the expansion of the expression
(a) $-15/16$ (b) $15/16$
(c) $-16/15$ (d) $16/15$
33. The coefficient of in the expansion of is
(a) $1/256$ (b) $1/562$
(c) $1/265$ (d) $-1/256$
1. If which one of the following is correct [WB JEE 1993]
(a) (b)
(c) (d) None of these
2. If then x lies in the interval
(a) (b) (-2, -1)
(c) (1, 2) (d) None of these
3. If then [UPSEAT 2001]



- (a) (b) (c)
- (c) (d) None of these (d) None of these
4. The number of solution of is 14. If , then
- (a) 2 (b) 0 (a) (b)
- (c) 3 (d) None of these (c) (d) None of these
5. The number lies in 15. The partial fractions of are
- (a) (b) [EAMCET 1986]
- (c) (d)
6. If then
- (a) The maximum value of x is
- (b) lies between $1/100$ and
- (c) x does not lie between $1/100$ and
- (d) The minimum value of x is $1/100$
7. The equation has the solution
- (a) (b) (c) (d) None of these
8. 16. Which of the following is not true [UPSEAT 2000]
- (a) (b)
- (c) (d)
- 9.
- (a) 1 (b) -1
- (c) 0 (d) None of these
- 10.
- (a) 0 (b) -1
- (c) 1 (d) None of these
11. The square root of $134 +$ is
- (a) (b)
- (c) (d)
12. If then
- (a) (b)
- (c) 1 (d) None of these
13. The partial fractions of are [IIT 1992]
- (a)
- (b)