MATHS

BOOKS - S CHAND IIT JEE FOUNDATION

POWERS AND ROOTS

Section A Solved Examples

1. Find the value of the expression $\dfrac{10^{-1} \times 5^{x-3} \times 4^{x-1}}{10 \times 5^{x-5} \times 4^{x-2}}$

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2. Evaluate $\left[(x^y)^{1 - \frac{1}{y}} \right]^{\frac{1}{y-1}}$

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3. Find the value of $(1296)^{0.75}(36)^{-1}$

4. If $a^m \cdot a^n = a^{nm}$, then find the value of $m(n-2) + n(m-2)$.

5. $\dfrac{6^6 + 6^6 + 6^6 + 6^6 + 6^6 + 6^6}{3^6 + 3^6 + 3^6} \div \dfrac{4^6 + 4^6 + 4^6 + 4^6}{2^6 + 2^6} = 2^n$, then the value of n is :

6. If $\left(\dfrac{a}{b}\right)^{x-1} = \left(\dfrac{b}{a}\right)^{x-3}$, find the value x .

7. If $5^{(x+3)} = 25^{(3x-4)}$, then the value of x is $\dfrac{5}{11}$ b. $\dfrac{11}{5}$ c. $\dfrac{11}{3}$ d. $\dfrac{13}{5}$

8. If $2^x = 4^y = 8^z$ and $\left(\dfrac{1}{2x} + \dfrac{1}{4y} + \dfrac{1}{6z}\right) = \dfrac{24}{7}$, then find the value of z.

9. $\dfrac{1}{1 + a^{n-m}} + \dfrac{1}{1 + a^{m-n}}$

10. Find the value of $\dfrac{3^{12+n} \times 9^{2n-7}}{3^{5n}}$

1. Find the smallest number by which 5808 should be multiplied so that the product becomes a perfect square. (a) 2 (b) 3 (c) 7 (d) 11

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2. One-third of the square root of which number is 0.001?

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3. What is the value of x in the eqution $\sqrt{1 + \sqrt{1 - \frac{2176}{2401}}} = 1 + \frac{x}{7}$?

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4. Evaluate the square root of $\frac{0.342 \times 0.684}{0.000342 \times 0.000171}$

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5. Arrange the following numbers in ascending order :

$3.5 \div 4, \sqrt{0.64}, 0.204 \times 4, (0.89)^2.$

6. The product of two whole numbers is 37. The square root of the difference of the numbers is a. 4.5 b. 6 c. 8 d. 7.5

7. Find the smallest number by which 9000 should be divided so that the quotient becomes a perfect cube?

8. If the cube root of 132651 is 51, then what is the value of

$\sqrt[3]{132.651} + \sqrt[3]{0.132651} + \sqrt[3]{0.000132651}$

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9. If $\dfrac{\sqrt{x}}{\sqrt{0.0064}} = \sqrt[3]{0.008}$, then find the value of x.

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10. the value of $\sqrt{\sqrt[3]{0.000729}}$ is

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Section A Question Bank 5 A

1. If m is a positive integer, which of the following is not equal to $\left(2^4\right)^m$?

A. 2^{4m}

B. 4^{2m}

C. $2^m \left(2^{3m} \right)$

D. $4^m \left(2^m \right)$

Answer: D

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2. Which of the following is not reciprocal of $\left(\dfrac{2}{3} \right)^4$? $\left(\dfrac{3}{2} \right)^4$ (b) $\left(\dfrac{2}{3} \right)^{-4}$

(c) $\left(\dfrac{3}{2} \right)^{-4}$ (d) $\dfrac{3^4}{2^4}$

A. $\left(\dfrac{3}{2} \right)^4$

B. $\left(\dfrac{2}{3} \right)^{-4}$

C. $\left(\dfrac{3}{2} \right)^{-4}$

D. $\dfrac{3^4}{4^2}$

Answer: C

3. $\left[3^3 + 3^2 + 3^{-2} + 3^{-3}\right]$ is equal to

A. 0

B. $36 + \dfrac{1}{36}$

C. $\dfrac{976}{27}$

D. $3^5 + 3^{-5}$

Answer: C

4. Solve : $9^{8.6} \times 8^{3.9} \times 72^{4.4} \times 9^{3.9} \times 8^{8.6} = 72^{?}$.

A. 15.1

B. 17.9

C. 20.9

D. 16.9

Answer: D

5. If $\left(\dfrac{a^{-1}b^2}{a^2b^{-4}}\right) \div \left(\dfrac{a^3b^{-5}}{a^{-2}b^3}\right) = a^x \cdot b^y$, find x + y.

A. a^4b^2

B. a^2b^4

C. a^3b^2

D. a^2b^3

Answer: A

6. The expression $\left(p^{-2x}q^{3y}\right)^6 \div \left(p^3q^{-1}\right)^{-4x}$ after simplification becomes

A. independent of p, but not of q

B. independent of q, but not of p

C. independent of both p and q

D. dependent on both p and q but independent of x and y.

Answer: A

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7. The expression $a^{\frac{2}{3}}\left\{a^{\frac{1}{3}}\left(a^{\frac{1}{4}}\right)^4\right\}^{\frac{1}{4}}$ is equal to

A. $a^{\frac{1}{2}}$

B. $a^{\frac{1}{6}}$

C. a

D. 1

Answer: C

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8. Evaluate : $\dfrac{\left(3^4\right)^4 \times 9^6}{\left(27\right)^7 \times 3^9}$

A. 3

B. 9

C. $\dfrac{1}{3}$

D. $\dfrac{1}{9}$

Answer: D

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9. The value of $\dfrac{2^{n+4} - 2 \cdot 2^n}{2.2^{n+3}} + 2^{-3}$

A. 2^{n+1}

B. 2^3

C. 2^{-3}

D. 1

Answer: D

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10. The expression $\dfrac{\left(x + \frac{1}{y}\right)^a \cdot x - \frac{1}{y}^b}{\left(y + \frac{1}{x}\right)^a \cdot y - \frac{1}{x}^b}$ reduces to $\left(\dfrac{x}{y}\right)^{a-b}$ b. $\left(\dfrac{y}{x}\right)^{a-b}$ c.

$\left(\dfrac{x}{y}\right)^{a+b}$ d. $\left(\dfrac{y}{x}\right)^{a+b}$

A. $\left(\dfrac{y}{x}\right)^{a+b}$

B. $\left(\dfrac{x}{y}\right)^{a+b}$

C. $\left(\dfrac{y}{x}\right)^{a-b}$

D. $\left(\dfrac{x}{y}\right)^{a-b}$

Answer: B

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11. If $\left(\dfrac{p}{q}\right)^{rx-s} = \left(\dfrac{q}{p}\right)^{px-q}$ **, then find the value of** x.

A. 1

B. $\dfrac{q+s}{p+r}$

C. $\dfrac{q+r}{q+s}$

D. $\dfrac{q+r}{p+s}$

Answer: B

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12. If $\left(ab^{-1}\right)^{2x-1} = \left(ba^{-1}\right)^{x-2}$ **then what is the value of x?**

A. 1

B. 2

C. 3

D. 4

Answer: A

13. $\left(\dfrac{2^m}{2^n}\right)^t \times \left(\dfrac{2^n}{2^t}\right)^m \times \left(\dfrac{2^t}{2^m}\right)^n$ is equal to

A. 1

B. 2

C. $\dfrac{1}{2}$

D. 0

Answer: A

14. Find the value of x when $4^{2x} = \dfrac{1}{32}$

A. $-\dfrac{5}{4}$

B. $\dfrac{4}{5}$

C. $\dfrac{3}{5}$

D. $\dfrac{5}{3}$

Answer: A

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15. If $2^{x+4} - 2^{x+2} = 3$, then x is equal to

A. 0

B. 2

C. -1

D. -2

Answer: D

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16. $\left[1 - 2(1-2)^{-1}\right]^{-1}$

A. $\dfrac{1}{3}$

B. $-\dfrac{1}{3}$

C. -1

D. $\dfrac{1}{2}$

Answer: A

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17. In the expression $\dfrac{2^x + 1}{(7)^{-1} + (2)^{-1}} = 14$, the value of x is

A. 3

B. 5

C. 15

D. 7

Answer: A

18. If $m^n \cdot n^m = 800,$ then the value of $\dfrac{n}{m}$ is (m < n)

A. $\dfrac{1}{2}$

B. $\dfrac{1}{5}$

C. $\dfrac{4}{5}$

D. $\dfrac{5}{2}$

Answer: D

19. If $a^{2x+2} = 1$, where a is a positive real number other than 1, then x = ?

A. -2

B. -1

C. 0

D. 1

Answer: B

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20. If $3^x - 3^{x-1} = 18$, then x^x is equal to

A. 3

B. 8

C. 27

D. 216

Answer: C

21. If $x^{11} = y^0$ and $x = 2y$, then y is equal to

A. $\dfrac{1}{2}$

B. 1

C. -1

D. -2

Answer: A

22. The value of $\dfrac{(5)^{0.25} \times (125)^{0.25}}{(256)^{0.10} \times (256)^{0.15}}$ is

A. $\dfrac{\sqrt{5}}{2}$

B. $\dfrac{5}{4}$

C. $\dfrac{25}{2}$

D. $\dfrac{25}{16}$

Answer: B

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23. $\left[3^{2^3} - \left(3^2\right)^3 \right]$ is equal to

A. 8532

B. 5832

C. 3852

D. 5238

Answer: B

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24. If $x^y = y^x$, then $\left(\dfrac{x}{y}\right)^{\frac{x}{y}}$ is equal to $x^{\frac{y}{x}}$ b. $x^{\frac{y}{x}-1}$ c. 1 d. $x^{\frac{x}{y}}$

A. $x^{x/y}$

B. $x^{\frac{x}{y}-1}$

C. $x^{y/x}$

D. $x^{\frac{y}{x-1}}$

Answer: B

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25. If a and b are positive integers such that $a^b = 125$, then $(a-b)^{a+b-4}$

is equal to

A. 16

B. 25

C. 28

D. 30

Answer: A

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26. Find the value of

$$\frac{(243)^{0.13} \times (243)^{0.07}}{(7)^{0.25} \times (49)^{0.075} \times (343)^{0.2}}$$

A. $\dfrac{3}{7}$

B. $\dfrac{7}{3}$

C. $1\dfrac{3}{7}$

D. $2\dfrac{2}{7}$

Answer: A

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27. If $\left(\dfrac{9}{4}\right)^{x} \cdot \dfrac{8}{27}^{x-1} = \dfrac{2}{3}$, then the value of x is 1 b. 2 c. 3 d. 4

A. 1

B. 2

C. 3

D. 4

Answer: D

28. If $\dfrac{9^n \times 3^5 \times 27^3}{3 \times (81)^4} = 27$, then n equals

A. 0

B. 2

C. 3

D. 4

Answer: C

29. Prove that

$$\frac{1}{1+p+q^{-1}} + \frac{1}{1+q+r^{-1}} + \frac{1}{1+r+p^{-1}} = 1, \quad \text{if} \quad pqr = 1.$$

A. 1

B. pq

C. qr

D. $\dfrac{1}{pq}$

Answer: A

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30. यदि a, b, c धनात्मक वास्तविक संख्याएँ हैं, तो $\sqrt{a^{-1}b} \times \sqrt{b^{-1}c} \times \sqrt{c^{-1}a}$ का मान होगाः

A. abc

B. $\sqrt{abc}$

C. $\dfrac{1}{abc}$

D. 1

Answer: D

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1. The value of x, if $2^x + 2^x + 2^x = 192$ is

A. 5

B. $\dfrac{1}{6}$

C. 6

D. None of these

Answer: C

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2. The value of $\sqrt{\dfrac{1}{4} + (0.0001)^{1/2} - (1000)^{-2/3}}$ is

A. $\dfrac{1}{2}$

B. $\dfrac{1}{4}$

C. $\dfrac{1}{8}$

D. 0

Answer: A

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3. If $2^x = 4^y = 8^z$ and $xyz = 288$, the value of $\dfrac{1}{2x} + \dfrac{1}{4y} + \dfrac{1}{8z}$ is

A. $\dfrac{11}{8}$

B. $\dfrac{11}{24}$

C. $\dfrac{11}{48}$

D. $\dfrac{11}{96}$

Answer: D

4. $\left(\sqrt[5]{\sqrt[5]{a^5}} \right)^{10}$ is equal to

A. a^2

B. 1

C. $a^{1/5}$

D. a^5

Answer: A

5. If $(4)^{x+y} = 1$ and $(4)^{x-y} = 4$, then the value of x and y will be respectively

A. $\dfrac{1}{2}$ and $-\dfrac{1}{2}$

B. $\dfrac{1}{2}$ and $\dfrac{1}{2}$

C. $-\dfrac{1}{2}$ and $-\dfrac{1}{2}$

D. $-\dfrac{1}{2}$ and $\dfrac{1}{2}$

Answer: A

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6. If $4^{2x} = \dfrac{1}{32}$, then x is

A. $\dfrac{5}{4}$

B. $\dfrac{4}{5}$

C. $\dfrac{3}{5}$

D. $-\dfrac{5}{4}$

Answer: D

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7. $16^5 + 2^{15}$ is divisible by

A. 31

B. 13

C. 27

D. 33

Answer: D

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8. The value of $\left[\left[(2401)^{-1/2}\right]^{-1/4}\right]^2$ is

A. 8

B. 7

C. $\dfrac{1}{7}$

D. 16

Answer: B

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9. The number of prime factors in the expression $6^4 \times 8^6 \times 10^8 \times 12^{10}$ is:

A. 48

B. 64

C. 72

D. 80

Answer: C

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10. The value of $\dfrac{3^{(12+n)} \times 9^{(2n-7)}}{3^{5n}}$ is

A. $\dfrac{1}{3}$

B. $\dfrac{9}{13}$

C. $\dfrac{1}{9}$

D. $\dfrac{2}{3}$

Answer: C

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1. The value of $\sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{154 + \sqrt{225}}}}}$ is (a) 4 (b) 6 (c) 8 (d) 10

A. 4

B. 6

C. 8

D. 10

Answer: A

2. If $\sqrt{x} + \sqrt{441} = 0.02$, then the value of x is (a) 0.1764 (b) 1.764 (c) 1.64 (d) 2.64

A. 1.64

B. 2.64

C. 1.764

D. 0.1764

Answer: D

3. $\sqrt{\dfrac{0.49}{0.25}} + \sqrt{\dfrac{0.81}{0.36}}$ is equal to:

A. 7

B. $2\dfrac{9}{10}$

C. $7\dfrac{9}{10}$

D. $9\dfrac{9}{10}$

Answer: A

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4. Simplify : $\sqrt{0.0025} \times \sqrt{2.25} \times \sqrt{0.0001}$

A. 0.00075

B. 0.0075

C. 0.075

D. 0.75

Answer: A

5. Given that $\sqrt{1225} = 35$, find the value of $\sqrt{12.25} + \sqrt{0.1225} + \sqrt{0.001225}$

A. 0.3885

B. 388.5

C. 38.85

D. 3.885

Answer: D

6. The square root of $0.\overline{4}$ is :

A. $0.\overline{8}$

B. $0.\overline{6}$

C. $0.\overline{7}$

D. $0.\overline{9}$

Answer: B

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7. If $\sqrt{1 + \dfrac{25}{144}} = \dfrac{x}{12}$, then x equals

A. 1

B. 11

C. 13

D. 7

Answer: C

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8. Of the numbers 0.16, $\sqrt{0.\overline{16}}$, $(0.16)^2$ and $0.1\overline{6}$, the least number is

A. $(0.16)^2$

B. $\sqrt{0.\overline{16}}$

C. 0.16

D. $0.1\overline{6}$

Answer: A

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9. 1008 divided by which single digit number gives a perfect square?

A. 9

B. 4

C. 8

D. 7

Answer: D

10. Find the smallest natural number by which 980 should be multiplied to make it a perfect square.

A. 7

B. 5

C. 3

D. 6

Answer: B

11. Simplify $\sqrt[3]{\dfrac{1}{8} \times \dfrac{125}{64}}$

A. $\dfrac{5}{8}$

B. $\dfrac{375}{512}$

C. $2\dfrac{1}{2}$

D. $15\dfrac{5}{8}$

Answer: A

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12. Find the value of $\sqrt[3]{\sqrt{441} + \sqrt{16} + \sqrt{4}}$

A. 3

B. 5

C. 7

D. 9

Answer: A

13. Simplify $\sqrt{\sqrt[3]{0.000729}}$

A. 3

B. 0.9

C. 0.3

D. 0.09

Answer: C

14. Simplify $\dfrac{\sqrt[3]{8}}{\sqrt{16}} \div \dfrac{\sqrt{100}}{\sqrt{49}} \times \sqrt[3]{125}$

A. 7

B. $1\dfrac{3}{4}$

C. $\dfrac{7}{100}$

D. $\dfrac{4}{7}$

Answer: B

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15. If $\sqrt{24} = 4.899$, the value of $\sqrt{\dfrac{8}{3}}$ is (a) 0.544 (b) 1.333 (c) 1.633 (d) 2.666

A. 0.544

B. 2.666

C. 1.633

D. 1.333

Answer: C

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16. If $\sqrt{6} = 2.55$, then the value of $\sqrt{\dfrac{2}{3}} + 3\sqrt{\dfrac{3}{2}}$ is

A. 4.48

B. 4.49

C. 3.71

D. None of these

Answer: D

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17. What should come in place of both the question marks in the equation

$\dfrac{?}{\sqrt{128}} = \dfrac{\sqrt{162}}{?}$. (a) 12 (b) 14 (c) 144 (d) 196

A. 12

B. 14

C. 144

D. 196

Answer: A

18. What number should be divided by $\sqrt{0.25}$ to give the result as 25? (a) 12.5 (b) 25 (c) 50 (d) 125

   A. 25

   B. 50

   C. 12.5

   D. 125

Answer: C

19. $\sqrt[3]{333 + \sqrt[3]{987 + \sqrt[3]{2197}}}$ is equal to

A. 21

B. 18

C. 7

D. 3

Answer: C

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20. if $\sqrt{\dfrac{x}{y}} + \sqrt{\dfrac{y}{x}} = \dfrac{10}{3}$ and $x + y = 10,$ then the value of xy will be :

A. 36

B. 24

C. 16

D. 9

Answer: D

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21. The sum of the squares of 2 numbers is 146 and the square root of one of them is $\sqrt{5}$. The cube of the other number is

A. 1111

B. 1221

C. 1331

D. 1441

Answer: C

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22. If $(28)^2$ is added to the square of a number, the answer so obtained is 1808. What is the number?

A. 34

B. 26

C. 36

D. 32

Answer: D

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1. $\sqrt{\dfrac{16}{36} + \dfrac{1}{4}}$

A. $\dfrac{2}{5}$

B. $\dfrac{1}{3}$

C. $\dfrac{5}{6}$

D. $\dfrac{7}{6}$

Answer: C

2. A decimal number has 16 decimal places. The number of decimal places in the square root of this number will be

   A. 2

   B. 4

   C. 8

   D. 16

Answer: C

3. The value of $\dfrac{5}{\sqrt{0.0025}}$ is

A. $\dfrac{1}{5}$

B. 5

C. 100

D. 50

Answer: C

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4. What is the value of

$$\sqrt{7.84} + \sqrt{0.0784} + \sqrt{0.000784} + \sqrt{0.00000784}$$

A. 3.08

B. 3.108

C. 3.1008

D. 3.1108

Answer: D

5. The ratio of three numbers is $3:4:5$ and the sum of their squares is 1250. The sum of three numbers is

    A. 60

    B. 90

    C. 30

    D. 50

Answer: A

6. $\dfrac{(225)^{0.2} \times (225)^{0.3}}{(225)^{0.8} \times (225)^{0.2}}$ is equal to :

    A. $\dfrac{1}{15}$

    B. 44211

C. 44221

D. 1.5

Answer: A

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7. Given that $\sqrt{24025} = 155$, then

$\sqrt{240.25} + \sqrt{2.4025} + \sqrt{0.024025} + \sqrt{0.00024025}$ is equal to

A. 16.2205

B. 16.2402

C. 17.2205

D. 155.2205

Answer: C

8. The number of integral values of x if the following statement is valed?

$$0 \le x^2 \le 100$$

A. 19

B. 20

C. 22

D. 21

Answer: D

9. Sum of digits of the smallest number by which 1440 should be multiplied so that it becomes a perfect cube, is

A. 4

B. 6

C. 7

D. 8

Answer: B

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10. First find the number in place of P in the following number series and then find the value of the expression given after the series.

$$188 \quad 186 \quad P \quad 174 \quad 158 \quad 126$$

The value of $\sqrt{P - 13}$ is

A. 14.03

B. 14.10

C. 13.00

D. 13.67

Answer: C

1. Simplify : $\left(\dfrac{x^a}{x^b}\right)^{a^2+b^2+ab} \times \left(\dfrac{x^b}{x^c}\right)^{b^2+c^2+bc} + \left(\dfrac{x^c}{x^a}\right)^{c^2+a^2+ca}$

A. 1

B. -1

C. 0

D. None of these

Answer: A

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2. Which one of the following is correct? The number 222222 is :

A. divisible by 3, but not divisible by 7

B. divisible by 3 and 7, but not divisible by 11

C. divisible by 2 and 7, but not divisible by 11

D. divisible by 3, 7 and 11

Answer: D

3. In a division operation, the divisor is 5 times the quotient and twice the remainder. If the remainder is 15, then what is the dividend?

A. 175

B. 185

C. 195

D. 205

Answer: C

4. LCM of two numbers is 16 times their HCF. The sum of LCM and HCF is 850. If one number is 50, then what is the number?

A. 800

B. 1200

C. 1600

D. 2400

Answer: A

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5. Find the value of $\sqrt{\dfrac{0.\,289}{0.\,00121}}$.

A. $\dfrac{1.7}{11}$

B. $\dfrac{0.17}{11}$

C. $\dfrac{17}{110}$

D. $\dfrac{170}{11}$

Answer: D

6. Consider the following statements :

A number $a_1 a_2 a_3 a_4 a_5$ is divisible by 9 if

1. $a_1 + a_2 + a_3 + a_4 + a_5$ is divisible by 9

2. $a_1 - a_2 + a_3 - a_4 + a_5$ is divisible by 9

Which of the above statements is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Answer: A

7. A bell rings every 5 seconds. A second bell rings every 6 seconds and a third one rings every 8 seconds. If all the three rings at the same time at 8.00 a.m., at what time will they all ring together next?

A. 1 minute past 8.00 a.m.

B. 2 minutes past 8.00 a.m.

C. 3 minutes past 8.00 a.m.

D. 4 minutes past 8.00 a.m.

Answer: B

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8. if $4^x - 4^{x-1} = 24$ then the value of $(2x)^x$ equals:

A. $(5)^{3/2}$

B. 4

C. $(5)^{5/2}$

D. $\dfrac{1}{5}$

Answer: C

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9. The first twenty natural numbers from 1 to 20 are written next to each

other to form a 31 digit number

$N = 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 1$

. What is the remainder when this number is divided by 16?

A. 0

B. 4

C. 7

D. 9

Answer: A

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10. x, y and z are the natural numbers. Which of the following statements

is true?

I. If x is divisible by y and y is divisible by z then x must be divisible by z.

II. If x is a factor of y and z, then x must be a factor of y + z.

III. If x is a factor of y and z, then x must be a factor of $\frac{y}{z}$.

    A. I, II and III

    B. I only

    C. I and II

    D. II only

Answer: C

11. The number of prime factors in

$$\left(\frac{1}{6}\right)^{12} \times (8)^{25} \times \left(\frac{3}{4}\right)^{15} \text{ is}$$

A. 33

B. 37

C. 52

D. None of these

Answer: D

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12. The value of $\dfrac{2}{3} \times \dfrac{3}{\frac{5}{6} \div \frac{2}{3} \, of \, 1\frac{1}{4}}$ is $\dfrac{1}{2}$ (b) $\dfrac{2}{3}$ (c) 1 (d) 2

A. 2

B. 1

C. $\dfrac{1}{2}$

D. $\dfrac{2}{3}$

Answer: A

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13. If $\left(\dfrac{1}{5}\right)^{3y} = 0.008$, then the value of $(0.25)^{y/2}$ will be

A. 1.00

B. 0.5

C. 0.25

D. 0.125

Answer: B

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14. Simplify : $\left[\sqrt[3]{\sqrt[6]{5^9}}\right]^4 \left[\sqrt[3]{\sqrt[6]{5^9}}\right]^4$

A. 5^2

B. 5^4

C. 5^8

D. 5^{12}

Answer: B

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15. The value of $0.1\overline{7}$ is

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16. The least values of x and y so that 7x342y is divisible y 88 are

A. 4, 4

B. 4, 3

C. 5, 6

D. 6, 7

Answer: A

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17. The total number of 8 digit numbers is

A. 9000

B. 9,00,000

C. 9,00,00,000

D. None of these

Answer: C

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18. If X, Y are positive real numbers such that $X > Y$ and A is any positive real number, then

A. $\dfrac{X}{Y} \geq \dfrac{X + A}{Y + A}$

B. $\dfrac{X}{Y} > \dfrac{X + A}{Y + A}$

C. $\dfrac{X}{Y} \leq \dfrac{X + A}{Y + A}$

D. $\dfrac{X}{Y} < \dfrac{X + A}{Y + A}$
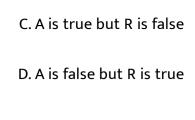
Answer: B

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19. Assertion (A) : The number 90356294 is divisible by 4.

Reason (R) : A number with an even digit in the units place is always divisible by 2.

A. both A and R are true and R is the correct explanation of A

B. both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

Answer: D

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20. Given two different prime numbers P and Q, find the number of divisors of PQ.

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