MATHS

BOOKS - ARIHANT PUBLICATION BIHAR

NUMBER SYSTEM

Solved Examples

1. Expression of $1.\overline{7}$ as a rational number in the form of $\dfrac{p}{q}$ is

A. $\dfrac{16}{9}$

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

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

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

Answer: A

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2. The additive and multiplicative inverse of $\dfrac{1}{4} + \dfrac{1}{3}$ is

A. $\left(\dfrac{11}{30}, \dfrac{30}{11} \right)$

B. $\left(\dfrac{-7}{12}, \dfrac{12}{7} \right)$

C. $\left(\dfrac{11}{20}, \dfrac{-30}{11} \right)$

D. $\left(\dfrac{11}{30}, \dfrac{-30}{11} \right)$

Answer: B

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Exam Booster For Cracking Exam

1. Which one of the following statements is true?

A. All even numbers are composite numbers

B. All odd numbers are prime numbers

C. There are infinitely many prime numbers

D. A prime number can be written as the product of more than two natural numbers

Answer: C

2. Find the rational number.

    A. Area of a circle with radius $\dfrac{1}{\pi}$

    B. Radius of circle with area $\dfrac{1}{\pi}$

    C. Circumference of circle with radius $\dfrac{1}{\pi}$

    D. Radius of circle with circumference $\dfrac{1}{\pi}$

Answer: C

3. Expression of $2.\overline{44}$ as a rational in form of $\dfrac{p}{q}$ is

    A. $\dfrac{231}{98}$

    B. $\dfrac{230}{99}$

    C. $\dfrac{22}{9}$

    D. $\dfrac{233}{99}$

Answer: C

4. Find the the natural number from the followings if a and b are natural numbers, not necessarily distinct.

A. $(a + b)$

B. $\dfrac{a}{b}$

C. $(a - b)$

D. $\log(ab)$

Answer: A

5. The real number $\sqrt{37}$ belongs to the category of

A. prime numbers

B. irrational numbers

C. rational numbers

D. complex numbers

Answer: B

6. If the numbers $x, 2x + 3$ are the primes, then x is equal to

A. 3

B. 2

C. 11

D. 13

Answer: A

7. If $\sqrt{2^n} = 16,$ then the value of n is

A. 4

B. 8

C. 2

D. 3

Answer: B

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8. Which one of the following is a correct statement?

   A. Decimal expansion of a rational number is terminating

   B. Decimal expansion of a rational number is non-terminating

   C. Decimal expansion of an irrational number is terminating

D. Decimal expansion of an irrational number is non-terminating and non-repeating

Answer: D

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9. If any two irrational numbers are added, then which of the following statement is true?

A. The sum is always a rational number

B. The sum is always an irrational number

C. The sum may be rational or irrational

D. The sum is always an integer

Answer: A

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10. If x, y, z are positive real numbers show

that: $\sqrt{x^{-1}y}\sqrt{y^{-1}z}\sqrt{z^{-1}x} = 1$

A. 2

B. 3

C. 0

D. 1

Answer: D

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11. In between two rational numbers, there are

A. a finite number of fractions

B. precisely two fractions

C. even number of rationals

D. infinitely many numbers of fractions to previous column

Answer: D

12. If a is an even positive integer and b is an odd positive integer, then which of the following statement is true?

A. a (b - 1) is even

B. a (b - 1) is odd

C. (a - 1) (0 - 1) is even

D. (a - 1) is even

Answer: A

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13. Consider the following statement

I. The set of positive powers of 2 is closed under multiplication.

II. The set [1,0,-1] is closed under multiplication.

III. The number 35 has exactly four divisors.

IV. The set [1,0,-1] is closed under addition.

Of the above statement

A. I, II, III are true

B. Only III is true

C. All are false

D. All are true

Answer: A

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14. A prime number greater than 11 will never end with

A. 5

B. 7

C. 9

D. 1

Answer: A

15. If P is a prime number and P divides ab i.e.,

$(p) \mid (ab),$ where a and b are integers, then

A. $(P)|(a)$ or $(P)|(b)$

B. $\dfrac{P}{a+b}$

C. $\dfrac{P}{a-b}$

D. None of these

Answer: A

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16. $2\sqrt{3}$ is

A. a natural number

B. an integer

C. a rational number

D. an irrational number

Answer: D

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17. Fill in the blanks:

The square of an odd number is ....

    A. always an even number

    B. always a prime number

    C. sometimes even and sometimes odd

    D. always an odd number

Answer: D

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18. If r is a non-zero rational number and x is an irrational number, then the product rx is

A. a rational number

B. an integer

C. an irrational number

D. None of these

Answer: C

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19. If n is a natural number, then $\sqrt{n}$ is

A. always a rational number

B. always a natural number

C. always an irrational number

D. sometimes a natural number and sometimes an irrational number

Answer: D

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20. If a, b and c are real numbers, such that $a < b$ and $c < 0$, then of the statements which is true?

A. $\dfrac{a}{c} < \dfrac{b}{c}$

B. $ac < bc$

C. $\dfrac{c}{a} > \dfrac{c}{b}$

D. $ac > bc$

Answer: D

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21. 235.235235235... is a/an

A. integer

B. whole number

C. rational number

D. irrational number

Answer: C

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22. The value of a and b in $3\dfrac{7}{a} \times b\dfrac{3}{15} = 8$ is equal to

A. 2, 11

B. 11, 2

C. 1, 1

D. 2, 1

Answer: B

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23. The periodic decimal $0.272727... = 0.\overline{27}$ is the rational number

A. $\dfrac{3}{11}$

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

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

D. $\dfrac{1}{11}$

Answer: A

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24. Consider the following statements

I. If x and y are composite integers, so x + y is also composite.

II. If x and y are composite integers and $x > y$, then x - y is also a composite integer.

III. If x and y are composite integers, so also is xy.

Of the above, the correct statement is/are

    A. Only III

    B. I and II

    C. All the three

D. None of these

Answer: A

25. Which one of the following is a prime

number?

A. 99

B. 162

C. 173

D. 201

Answer: C

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