

Number System MCQs

Multiple Choice Questions

1. Which of the following is a rational number?

- A) $\sqrt{2}$
- B) π
- C) 43
- D) $\sqrt{3}$

2. What is the result of $\sqrt{16}$?

- A) 5
- B) 3
- C) 4
- D) Irrational

3. Which property is shown by: $a + b = b + a$?

- A) Associative
- B) Commutative
- C) Identity
- D) Closure

4. Which number is irrational?

- A) 3
- B) 2.5
- C) $\sqrt{2}$
- D) 0.25

5. If $a = b$ and $b = c$, then $a = c$. This is which property?

- A) Reflexive
- B) Symmetric
- C) Transitive

- D) Associative

6. What is the value of $\sqrt{4}$?

- A) 1
- B) 2
- C) 3
- D) 0

7. Which of the following is a terminating decimal?

- A) 0.333...
- B) π
- C) 0.75
- D) $\sqrt{3}$

8. What type of number is $2/3$?

- A) Rational
- B) Irrational
- C) Natural
- D) Whole

9. Which operation is binary?

- A) Square root
- B) Logarithm
- C) Addition
- D) Absolute value

10. Which of the following is not a property of equality?

- A) Transitive
- B) Commutative
- C) Symmetric
- D) Reflexive

11. What is the multiplicative identity?

- A) 0
- B) 1
- C) -1
- D) 2

12. What is the additive identity?

- A) 1
- B) 0
- C) -1
- D) None

13. If $a > b$ and $c > 0$, then ac is:

- A) $< bc$
- B) $= bc$
- C) $> bc$
- D) none

14. Which number is not a real number?

- A) 0
- B) -5
- C) $\sqrt{2}$
- D) $\sqrt{-1}$

15. 0.666... is what type of number?

- A) Irrational
- B) Rational
- C) Whole
- D) None

16. Which number is both an integer and rational?

- A) 7

- B) $\sqrt{2}$
- C) 3.5
- D) π

17. What is the distributive property?

- A) $a(b + c) = ab + ac$
- B) $a + b = b + a$
- C) $(a + b) + c = a + (b + c)$
- D) None

18. Is $\sqrt{9}$ rational?

- A) Yes
- B) No
- C) Only if it's a fraction
- D) None

19. What is the square root of a non-perfect square (like $\sqrt{5}$)?

- A) Rational
- B) Irrational
- C) Integer
- D) Natural

20. Which number is a recurring decimal?

- A) 0.5
- B) 1.414
- C) 0.666...
- D) 3

Answer Key with Explanations

1. Which of the following is a rational number? Answer: C

43 is a whole number and can be written as $43/1 \rightarrow$ Rational.

2. What is the result of $\sqrt{16}$? Answer: C

$\sqrt{16} = 4 \rightarrow 4 = 4/1 \rightarrow$ Rational.

3. Which property is shown by: $a + b = b + a$? Answer: B

Commutative property: Order of addition doesn't matter.

4. Which number is irrational? Answer: C

$\sqrt{2}$ is non-terminating and non-repeating \rightarrow Irrational.

5. If $a = b$ and $b = c$, then $a = c$. This is which property? Answer: C

If $a = b$ and $b = c \rightarrow a = c \rightarrow$ Transitive property.

6. What is the value of $\sqrt{4}$? Answer: B

$\sqrt{4} = 2 \rightarrow 2 = 2/1 \rightarrow$ Rational.

7. Which of the following is a terminating decimal? Answer: C

0.75 is a decimal that ends \rightarrow Terminating \rightarrow Rational.

8. What type of number is $2/3$? Answer: A

$2/3$ is a fraction of integers \rightarrow Rational.

9. Which operation is binary? Answer: C

Addition is binary: it combines two numbers to give another.

10. Which of the following is not a property of equality? Answer: B

Commutative is not a property of equality (belongs to operations).

11. What is the multiplicative identity? Answer: B

1 is the multiplicative identity $\rightarrow a \times 1 = a$.

12. What is the additive identity? Answer: B

0 is the additive identity $\rightarrow a + 0 = a$.

13. If $a > b$ and $c > 0$, then ac is: Answer: C

If $c > 0$ and $a > b \rightarrow ac > bc$.

14. Which number is not a real number? Answer: D

$\sqrt{-1}$ is imaginary \rightarrow not real.

15. 0.666... is what type of number? Answer: B

0.666... is repeating \rightarrow can be written as $\frac{2}{3} \rightarrow$ Rational.

16. Which number is both an integer and rational? Answer: A

7 is an integer and can be $\frac{7}{1} \rightarrow$ Rational.

17. What is the distributive property? Answer: A

Distributive property: $a(b + c) = ab + ac$.

18. Is $\sqrt{9}$ rational? Answer: A

$\sqrt{9} = 3 \rightarrow 3 = 3/1 \rightarrow$ Rational.

19. What is the square root of a non-perfect square (like $\sqrt{5}$)? Answer: B

$\sqrt{5} \approx 2.236... \rightarrow$ non-terminating/non-repeating \rightarrow Irrational.

20. Which number is a recurring decimal? Answer: C

0.666... repeats \rightarrow recurring decimal \rightarrow Rational.

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