

Class: IX
Subject: Mathematics
Topic: Number System
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

Q1 Which of the following is true?

- A. Every whole number is a natural number
- B. Every natural number is integer
- C. Every rational number is an integer
- D. Every integer is a whole no

Ans. B

Every integer is a rational number. Rest all of the options are wrong.

Q2 for positive real number a and b, which option is incorrect

- A. $\sqrt{ab} = \sqrt{a} \sqrt{b}$
- B. $(a+\sqrt{b})(a-\sqrt{b}) = a^2 - b$
- C. $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$
- D. $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b}) = a + b$

Ans. D

Both the answers are correct because both can be possible in terms of rules applicable for numbers in number system.

Q3 Out of the following, the irrational number is

- A. $1.\bar{5}$
- B. $1.\bar{5}77777$
- C. π
- D. $2.\bar{5}77777$

Ans. C

Pie is an irrational number

Q4 to rationalize the denominator of $\frac{1}{\sqrt{a+b}}$, we multiply this by

- A. $\frac{1}{\sqrt{a+b}}$
- B. $\frac{\sqrt{a-b}}{\sqrt{a-b}}$
- C. $\frac{1}{\sqrt{a+b}}$
- D. $\frac{\sqrt{a+b}}{\sqrt{a+b}}$

Ans. B

Option B is correct as in rationalizing the denominator we want the denominator to be a rational number and we can get that only by using the option B

Q5 The number of rational numbers between $\sqrt{3}$ and $\sqrt{5}$ is

- A. One
- B. B. 3
- C. C. None
- D. D. Infinitely many

Ans. D

Infinitely many rational numbers can be found between two given numbers

Q6 If we add to irrational numbers, the resulting number

- A. Is always in irrational numbers
- B. Is always a rational number
- C. May be a rational or irrational number
- D. Always an integer

Ans. C

It can either be a rational number or an irrational number depending upon the input we take for doing addition

Q7 The rationalizing factor of $7-2\sqrt{3}$

- A. $7+2\sqrt{3}$
- B. $7-2\sqrt{3}$
- C. $4+2\sqrt{3}$
- D. $5+2\sqrt{3}$

Ans. A.

Option A is correct as in rationalizing we want the answer to be a rational number and we can get that only by using option A

Q8 If $\frac{1}{7} = 0.\overline{142857}$, then $\frac{4}{7}$ equals

- A. $0.\overline{142857}$
- B. $0.\overline{571428}$
- C. $0.\overline{285714}$
- D. $0.\overline{571428}$

Ans. D

Do the division in order to get the correct answer?

Q9 The value of n for which $\sqrt[n]{n}$ be a rational number is

- A. 2
- B. 4
- C. 3
- D. 5

Ans. B

Option B can be only responsible answer for the given question as square root of 4 will be 2

Q10. $\frac{\sqrt[3]{12}}{\sqrt[6]{27}}$ equals

- A. $\frac{1}{2}$
- B. $\sqrt{3}$
- C. $\frac{1}{3}$
- D. $\sqrt{2}$

Ans. C

After simplification you will get the $\frac{1}{3}$ as the answer.

Q11. $(3+\sqrt{3})(3-\sqrt{2})$ equals

- A. $9-5\sqrt{2}-\sqrt{6}$
- B. $9-\sqrt{6}$
- C. $3+\sqrt{2}$
- D. $9-3\sqrt{2}+3\sqrt{3}-\sqrt{6}$

Ans. D

This can be considered as the expansion of the formula $(x-a)(x-b)$. hence it will be

$$9-3\sqrt{2}+3\sqrt{3}-\sqrt{6}$$

Q12. The arrangement of $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$ in ascending order is

- A. $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$
- B. $\sqrt{5}$, $\sqrt{3}$, $\sqrt{2}$
- C. $\sqrt{2}$, $\sqrt{5}$, $\sqrt{3}$
- D. $\sqrt{3}$, $\sqrt{2}$, $\sqrt{5}$

Ans. A

As $2 < 3 < 5$ so be their square root.

Q13. If m and n are two natural numbers and $m^n = 32$, then n^{mn} is

- A. 5^2
- B. 5^3
- C. 5^{10}
- D. 5^{12}

Ans. C

The values of m and n are 2 and 5 hence the answer is 5^{10}

Q14. If $\sqrt{10} = 3.162$, then the value of $\frac{1}{\sqrt{10}}$ is

- A. 0.3162
- B. 3.162
- C. 31.62
- D. 316.2

Ans. A

The answer will be $(\sqrt{10}/10)$ Hence the answer will be .3162

Q15 If $\left(\frac{3}{4}\right)^6 \times \left(\frac{16}{9}\right)^5 = \left(\frac{4}{3}\right)^{x+2}$, then the value of x is

- A. 4
- B. -2
- C. 2
- D. 6

Ans. C

The equation will become $x+2 = 4$ hence the value of x will be 2

Q16. Which of the following rational numbers have terminating decimal representation?

- A. 3/5
- B. 3/13
- C. 40/27
- D. 23/7

Ans. A

It's a property of numbers that if in denominator 2 and 5 are there then only it will terminate in a terminating decimal representation

Q17. How many rational numbers can be found between distinct rational numbers?

- A. Two
- B. Ten
- C. Zero
- D. Infinite

Ans. D

Infinite irrational and rational numbers can be found between two rational numbers and irrational numbers.

Q18. The value of $(2+\sqrt{3})(2-\sqrt{3})$ is

- A. 1
- B. -1
- C. 2
- D. None of these

Ans. A

This can be considered as the expansion of the formula a^2-b^2 hence it will be $4-3 = 1$.

Q19. $(27)^{-2/3}$ is equal to

- A. 9
- B. $1/9$
- C. 3
- D. None of these

Ans. B

$(27)^{-2/3}$ this can be written as square of cube root of $1/27$. Hence the answer will be $1/9$

Q20 Multiply $\sqrt{5}$ by $6\sqrt{2}$

- A. 6
- B. $6\sqrt{10}$
- C. $6\sqrt{20}$
- D. 60

Ans. B

Because $\sqrt{5}$ multiplied by $\sqrt{2}$ will give $\sqrt{10}$.