

NUMBER SYSTEM

- Q.1)** The value of 0.423 is
(A) $\frac{423}{1000}$ (B) $\frac{423}{100}$
(C) $\frac{423}{990}$ (D) $\frac{419}{990}$
- Q.2)** The value of x , when $2^{x+4} \cdot 3^{x+1} = 288$
(A) 1 (B) -1
(C) 0 (D) 2
- Q.3)** Value of $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \frac{1}{\sqrt{4}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{8}} + \frac{1}{\sqrt{8}+\sqrt{9}}$
(A) 2 (B) 3
(C) 4 (D) 5
- Q.4)** If $a = 2 + \sqrt{3}$ and $b = 2 - \sqrt{3}$ then $\frac{1}{a^2} - \frac{1}{b^2}$ is equal to
(A) 14 (B) -14
(C) $8\sqrt{3}$ (D) $-8\sqrt{3}$
- Q.5)** Which of the following statements is not true?
(A) $\sqrt{5.3}$ is a real number
(B) π is equal to $\frac{22}{7}$
(C) All rational numbers are terminating or recurring.
(D) Product of two irrational number can be rational or irrational
- Q.6)** What is the value of $\sqrt{3 \times 5^{-3}} \div \sqrt[3]{3^{-1}} \sqrt{5} \times \sqrt[6]{3 \times 5^6}$
(A) $\frac{5}{2}$ (B) $\frac{2}{5}$
(C) $\frac{5}{3}$ (D) $\frac{3}{5}$
- Q.7)** The number of composite numbers between 101 and 120 are ?
(A) 11 (B) 12
(C) 13 (D) 14
- Q.8)** Which of the following is equal to $\frac{\sqrt{5}-2}{\sqrt{5}+2} - \frac{\sqrt{5}+2}{\sqrt{5}-2}$
(A) $8\sqrt{5}$ (B) $-8\sqrt{5}$
(C) $5\sqrt{2}$ (D) $-\sqrt{320}$
- Q.9)** Which one is greatest in the following :
(A) $\sqrt{2}$ (B) $\sqrt[3]{3}$
(C) $\sqrt[3]{4}$ (D) $\sqrt[3]{2}$
- Q.10)** If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ the value of $x^2 + xy + y^2$ is :
(A) 99 (B) 100
(C) 1 (D) 0
- Q.11)** The rational form of $2.74\overline{35}$ is :-
(A) $\frac{27161}{999}$ (B) $\frac{27}{99}$
(C) $\frac{27161}{9900}$ (D) $\frac{27191}{9000}$
- Q.12)** $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1/3}}}$ is equal to :-
(A) $\frac{1}{3}$ (B) $\frac{11}{7}$
(C) 3 (D) $1\frac{1}{3}$
- Q.13)** If $x - \frac{1}{x} = \sqrt{3}$ then $x^3 - \frac{1}{x^3}$ equal :-
(A) $6\sqrt{3}$ (B) $3\sqrt{3}$
(C) 3 (D) $\sqrt{3}$
- Q.14)** If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{4z} = 4$, then the value of x is :-
(A) $\frac{7}{16}$ (B) $\frac{7}{32}$
(C) $\frac{7}{48}$ (D) None of these

Q.15) If $9^{x-1} = 3^{2x-1} - 486$ then the value of x is :-

- (A) 3.5 (B) 2.5
(C) 1.5 (D) 0

Q.16) If $x = \frac{1}{2-\sqrt{3}}$ find the value of $x^3 - 2x^2 - 7x + 5$ is :-

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

Q.17) The surd $3\sqrt[3]{5} - \sqrt[3]{45}$ in its simplest form is equal to :-

- (A) $2\sqrt[3]{5}$ (B) $\sqrt[3]{5}$
(C) $\sqrt[3]{5}$ (D) None of

Q.18) Simplify : $\frac{3^{-3} \times 6^2 \times \sqrt{98}}{5^2 \times 3 \sqrt{\frac{1}{25}} \times (15)^{-\frac{4}{3}} \times 3^{\frac{1}{3}}}$

- (A) 28 (B) $28\sqrt{2}$
(C) 56 (D) $56\sqrt{2}$

Q.19) The number 11111111111 is divisible by

- (A) 9 and 11 (B) 5 and 11
(C) 3 and 9 (D) 3 and 11

Q.20) A six digit number x3479y is divisible by 9 and 11. The possible values of (x, y) are

- (A) (3, 1) (B) (8, 5)
(C) (5, 8) (D) (1, 4)

Q.21) If 42573K is divisible by 72 then, the value of K is

- (A) 4 (B) 5
(C) 6 (D) 7

Q.22) Two numbers, x and y, are such that when divided by 6, they leave remainders 4 and 5 respectively.

Find the remainder when $(x^2 + y^2)$ is divided by 6.

- (A) 0 (B) 5
(C) 3 (D) 1

Q.23) If x, y, z are positive real numbers and a, b, c are rational numbers, then the value of

$$\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{b-c}+x^{a-c}}$$

- (A) -1 (B) 0
(C*) 1 (D) None of these

Q.24) Express $0.\overline{34} + 0.\overline{34}$ as a single decimal.

- (A) $0.6\overline{788}$ (B) $0.6\overline{89}$
(C) $0.68\overline{78}$ (D) $0.68\overline{7}$

Q.25) It is given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

- (A) $(2^{16} + 1)$ (B) $(2^{16} - 1)$
(C) $(2^{96} + 1)$ (D) None of these

Q.26) Successor of 301, 999 is _____.

- (A) 30, 200 (B) 302, 000
(C) 302, 010 (D) 301, 100

Q.27) The LCM of two numbers is x and their HCF is y.

The product of two number is -

- (A) $\frac{x}{y}$ (B) $\frac{y}{x}$
(C) $x + y$ (D) xy

Q.28) The smallest number of 4-digits exactly divisible by 12, 15, 20 and 35 is -

- (A) 1000 (B) 1160
(C) 1260 (D) None of these

Q.29) Four bells ring at intervals of 6, 7, 8 and 9 seconds respectively. All the bells ring together after _____ seconds.

- (A) 504 (B) 516
(C) 508 (D) 512

Q.30) The greatest number that will divide 137, 182 and 422 leaving a remainder of 2 in each case is -

- (A) 15 (B) 12
(C) 21 (D) None of these

Answer Sheet

Q.1	A	Q.11	C	Q.21	C
Q.2	A	Q.12	B	Q.22	B
Q.3	A	Q.13	A	Q.23	C
Q.4	D	Q.14	A	Q.24	D
Q.5	B	Q.15	A	Q.25	C
Q.6	D	Q.16	D	Q.26	B
Q.7	D	Q.17	A	Q.27	D
Q.8	B	Q.18	B	Q.28	C
Q.9	C	Q.19	D	Q.29	A
Q.10	A	Q.20	C	Q.30	A