

Chapter 01

Number System

1 Mark Questions

- If $3^{x-1} + 3^{x+1} = 810$, then the value of x is
 - 4
 - 7
 - 5
 - 3
- Which of the following fraction has terminating decimal?
 - $\frac{11}{16}$
 - $\frac{11}{6}$
 - $\frac{15}{7}$
 - $\frac{3}{11}$
- Express $3.0\overline{78}$ in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
 - $\frac{2555}{900}$
 - $\frac{2773}{9000}$
 - $\frac{2771}{900}$
 - None of these
- The rational form of $-25.6\overline{875}$ is
 - $\frac{-441}{16}$
 - $\frac{-411}{16}$
 - $\frac{-421}{16}$
 - $\frac{-431}{16}$
- Find the square root of $5 + 2\sqrt{6}$.
 - $\sqrt{5} + \sqrt{6}$
 - $\sqrt{5} + \sqrt{7}$
 - $\sqrt{3} + \sqrt{5}$
 - $\sqrt{3} + \sqrt{2}$

6. To rationalise the denominator of $\frac{5}{\sqrt{7} + \sqrt{2}}$, by what we should multiply?

(a) $\sqrt{7} + \sqrt{2}$

(b) $\sqrt{7} + \sqrt{5}$

(c) $\sqrt{7} - \sqrt{2}$

(d) None of these

7. The ascending order of the surds $\sqrt[3]{2}$, $\sqrt[6]{3}$, $\sqrt[9]{4}$ is

(a) $\sqrt[9]{4}$, $\sqrt[3]{2}$, $\sqrt[6]{3}$

(b) $\sqrt[9]{4}$, $\sqrt[6]{3}$, $\sqrt[3]{2}$

(c) $\sqrt[3]{2}$, $\sqrt[6]{3}$, $\sqrt[9]{4}$

(d) None of these

8. Simplify the : $\sqrt[7]{32} \times \sqrt[7]{4}$

(a) 7

(b) 3

(c) 2

(d) None of these

9. If $\frac{3^{5x}}{3^{2x}} \times (81)^2 \times 6561 = 3^7$, then find the value of x.

(a) 3

(b) $\frac{1}{3}$

(c) -3

(d) $-\frac{1}{3}$

10. If $\left[\left\{ \left(\frac{1}{(11)^2} \right)^{-2} \right\}^{-1/3} \right]^{1/4} = (11)^n$, then find the value of n.

(a) $-\frac{1}{3}$

(b) $\frac{3}{2}$

(c) $-\frac{1}{7}$

(d) $\frac{2}{8}$

2 Marks Questions

11. If $abc = 1$, then find the value of $\left(\frac{1}{1+a+b^{-1}} + \frac{1}{1+b+c^{-1}} + \frac{1}{1+c+a^{-1}} \right)$

(a) $\frac{a}{b}$

(b) 1

(c) $ab + bc$

(d) None of these

12. If $\sqrt{5} = p$, then $\frac{15}{\sqrt{10} + \sqrt{20} + \sqrt{40} - \sqrt{5} - \sqrt{80}}$ equal to

- (a) $p(2 + \sqrt{2})$ (b) $p(\sqrt{2} - 1)$
 (c) $p(\sqrt{2} + 1)$ (d) $p(\sqrt{2} + 3)$

13. If $x - y = 1$ and $\frac{9^y \times 9 \times (3^{-y/2})^{-2} - (27)^y}{3^{3x} \times 2^3} = \left(\frac{1}{3}\right)^m$, then find the value of m .

- (a) 2 (b) 3
 (c) -2 (d) -3

14. If $\alpha = (5 + 2\sqrt{6})$, then $\left(\sqrt{\alpha} + \frac{1}{\sqrt{\alpha}}\right) = ?$

- (a) $3\sqrt{4}$ (b) $-2\sqrt{3}$
 (c) $3\sqrt{2}$ (d) $2\sqrt{3}$

15. Match the two columns

	Column-I	Column-II
P.	$(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y})$	1. \sqrt{x} / \sqrt{y}
Q.	$\frac{\sqrt{x}}{\sqrt{y}}$	2. $x + 2\sqrt{xy} + y$
R.	$(x + \sqrt{y})(x - \sqrt{y})$	3. $x - y$
S.	$(\sqrt{x} + \sqrt{y})(\sqrt{x} + \sqrt{y})$	4. $x^2 - y$

Choose the correct option

- (a) P→3; Q→1; R→2; S→4
 (b) P→1; Q→3; R→4; S→2
 (c) P→3; Q→1; R→4; S→2
 (d) None of the above

Answers

1. (c) 2. (a) 3. (c) 4. (b) 5. (d) 6. (c) 7. (b) 8. (c) 9. (c) 10. (a)
 11. (b) 12. (c) 13. (b) 14. (d) 15. (c)