> Choose the right answer from the given options. [1 Marks Each]

[10]

1. Which one of the following is not equal to $\left(\frac{100}{9}\right)^{-\frac{3}{2}}$?

(A)
$$\left(\frac{9}{100}\right)^{\frac{3}{2}}$$

(B)
$$\left(\frac{1}{\frac{100}{9}}\right)^{\frac{3}{2}}$$

(C)
$$\frac{3}{10} \times \frac{3}{10} \times \frac{3}{10}$$

(D)
$$\sqrt{\frac{100}{9}} \times \sqrt{\frac{100}{9}} \times \sqrt{\frac{100}{9}}$$

- 2. If $x=\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y=\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}},$ then $x^2+xy+y^2=$
 - (A) 101

(B) 99

(C) 98

(D) 102

- 3. If $\left(\frac{2}{3}\right)^{x} \left(\frac{3}{2}\right)^{2x} = \frac{81}{16}$ then x = ?
 - (A) 1

(B) 2

(C) 3

(D) 4

- 4. Value of $\sqrt[4]{(81)^{-2}}$ is:
 - (A) $\frac{1}{81}$

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

(C) $\frac{1}{0}$

(D) 9

- 5. If $\frac{3-\sqrt{5}}{3+2\sqrt{5}} = a\sqrt{5} \frac{19}{11}b$, than the value of 'b' is:
 - (A) -1

(B) 2

(C) 1

(D) 3

- 6. Which of the following statements is true?
 - (A) Product of two irrational numbers is always irrational.
- (B) Product of a rational and an irrational number is always irrational.
- (C) Sum of two irrational numbers can never be irrational.
- (D) Sum of an integer and a rational number can never be an integer.

- $^{7.}$ When simplified $\left(\mathbf{x}^{-1}+\mathbf{y}^{-1}\right)^{-1}\,$ is equal to:
 - (A) xv

. (B) x + v

(C) $\frac{xy}{x+y}$

(D) $\frac{x+y}{xy}$

- 8. If $x=\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$ and $y=\frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}},$ then x+y+xy=
 - (A) 9

(B) 5

(C) 17

(D) 7

9. Write the correct answer in the following:

Value of $\sqrt[4]{(81)^{-2}}$ is.

(A) $\frac{1}{9}$

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

(C) 9

(D) $\frac{1}{81}$

- 10. The sum of $0.\overline{3}$ and $0.\overline{4}$ is:
 - (A) $\frac{7}{9}$

(B) $\frac{7}{11}$

(C) $\frac{7}{99}$

(D) $\frac{7}{10}$

> Answer the following short questions. [2 Marks Each]

[8]

- 11. Represent $\sqrt{5}$ on the number line.
- 12. Find rational numbers a and b such that:

$$\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$$

13. It being given that $\sqrt{3}=1.732, \sqrt{5}=2.236, \sqrt{6}=2.449$ and $\sqrt{10}=3.162,$ find to three places of decimal, the value of the following:

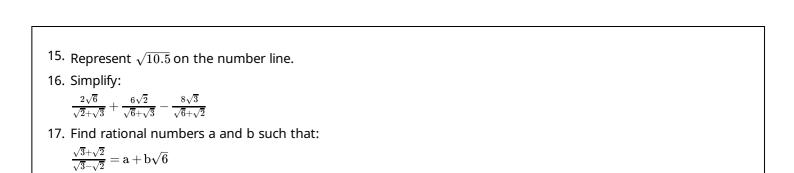
$$\frac{3+\sqrt{5}}{2\sqrt{5}}$$

14. Simplify by rationalising the denominator:

$$\frac{7\sqrt{3}-5\sqrt{2}}{\sqrt{49}+\sqrt{19}}$$

➤ Answer the following questions. [3 Marks Each]

[12]



18. Simplify $\frac{\sqrt{13}-\sqrt{11}}{\sqrt{13}+\sqrt{11}}+\frac{\sqrt{13}+\sqrt{11}}{\sqrt{13}-\sqrt{11}}$