STD 9 Maths
Home Test

Total Marks : 30

*** Choose the right answer from the given options. [1 Marks Each]** [10]

1. Which of the following is a rational number:
   (A) $\sqrt{180}$ (B) $\sqrt{31}$ (C) $\sqrt{196}$ (D) 0.323223222322223

2. Simplified value of $(25)^{\frac{1}{3}} \times 5^{\frac{1}{3}}$ is:
   (A) 25 (B) 3 (C) 1 (D) 5

3. Which one of the following is a correct statement?
   (A) Decimal expansion of a rational number is terminating. (B) Decimal expansion of a rational number is non-terminating. (C) Decimal expansion of an irrational number is terminating. (D) Decimal expansion of an irrational number is non-terminating and non-repeating.

4. The sum of two irrational numbers is.
   (A) Always an integer. (B) Always irrational. (C) Always rational. (D) Either irrational or rational.

5. The value of $64^{-\frac{1}{3}}\left(64^{\frac{1}{3}} - 64^{\frac{2}{3}}\right)$ is:
   (A) 1 (B) 13 (C) -3 (D) -2

6. The simplest form of $25^{\frac{1}{3}} \times 5^{\frac{1}{3}}$ is:
   (A) 5 (B) 25 (C) None of these. (D) 125

7. The $\frac{p}{q}$ form of the number 0.8 is:
   (A) 1 (B) $\frac{1}{8}$ (C) $\frac{8}{10}$ (D) $\frac{8}{100}$

8. An irrational number between 5 and 6 is
   (A) $\frac{1}{2}(5+6)$ (B) $\sqrt{5+6}$ (C) $\sqrt{5 \times 6}$ (D) none of these

9. The value of $\sqrt[4]{\sqrt[3]{2^2}}$ is:
   a. $2^{-\frac{1}{6}}$
   b. 2^{-6}
   c. $2^{\frac{1}{6}}$
   d. 2^6

10. The simplest for of $0.\overline{32}$ is:
    a. $\frac{16}{45}$
    b. $\frac{32}{99}$
    c. $\frac{29}{90}$
    d. None of these.

*** Answer the following short questions. [2 Marks Each]** [10]

11. Rationalise the denominator of the following:
    $\frac{\sqrt{40}}{\sqrt{3}}$

12. Find two rational and two irrational number between 0.5 and 0.55.

13. Simplify:
    $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$

14. Solve for $x\left(\frac{2}{5}\right)^{2x-2} = \frac{32}{3125}$.

15. Examine whether the following numbers are rational or irrational.
    $\sqrt[3]{5} \times \sqrt[3]{25}$

*** Answer the following questions. [3 Marks Each]** [6]

16. Find the values of a and b in the following:

$\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = 2 - b\sqrt{6}$

17. Find two irrational numbers between 0.5 and 0.55. [4]

*** Questions with calculation. [4 Marks Each]**

18. If $x = 9 - 4\sqrt{5},$ find the value of $x^2 - \frac{1}{x^2}$.

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