

Date : 26-06-2024

STD 9 Maths

Total Marks : 40

Chapter Based Test

section A

* Choose the right answer from the given options. [1 Marks Each] [6]

- The simplest form of $0.\overline{54}$ is:
(A) $\frac{27}{50}$ (B) $\frac{6}{11}$ (C) $\frac{4}{7}$ (D) None of these.
- The value of $\left(\frac{256x^{16}}{81y^4}\right)^{-\frac{1}{4}}$ is:
(A) $\frac{4y}{5x^4}$ (B) $\frac{3y}{8x^4}$ (C) $\frac{3y}{4x^4}$ (D) $\frac{4x^4}{3y}$
- The decimal form of $\frac{2}{11}$ is:
(A) $0.\overline{018}$ (B) 0.18 (C) $0.\overline{18}$ (D) 0.018
- $9^3 + (-3)^3 - 6^3 = ?$
(A) 432 (B) 270 (C) 486 (D) 540
- The rationalisation factor of $\frac{1}{2\sqrt{3}-\sqrt{5}}$ is:
(A) $(\sqrt{3} + \sqrt{5})$ (B) $\sqrt{12} + \sqrt{5}$ (C) $\sqrt{5} - 2\sqrt{3}$ (D) $\sqrt{3} + 2\sqrt{5}$
- Every point on a number line represents:
 - a rational number.
 - a natural number.
 - an irrational number.
 - a unique number.

* A statement of Assertion (A) is followed by a statement of Reason (R). [2]

Choose the correct option.

- Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: The square root of any prime number is irrational.

Reason: The rationalizing factor of $2 + \sqrt{7}$ is $5 + \sqrt{3}$

- Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
- Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
- Assertion is true but the reason is false.

d. Both assertion and reason are false.

8. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:

Assertion: If $\sqrt{2} = 1.414$., $\sqrt{3} = 1.732$, then $\sqrt{5} = \sqrt{2} + \sqrt{3}$.

Reason: Square root of a positive real number always exists.

- Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.
- Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.
- Assertion is correct statement but Reason is wrong statement.
- Assertion is wrong statement but Reason is correct statement.

* **Answer the following questions in one sentence. [1 Marks Each] [2]**

- Let x and y be rational and irrational numbers, respectively. Is $x + y$ necessarily an irrational number? Give an example in support of your answer.
- Give an example of two irrational numbers whose Product is a rational number.

section B

* **Answer the following short questions. [2 Marks Each] [8]**

- Classify the number 1.101001000100001..... as rational or irrational.
- Rationalise the denominator of the following:
$$\frac{3+\sqrt{2}}{4\sqrt{2}}$$
- Identify the following as rational or irrational numbers. Give the decimal representation of rational numbers:
 $\sqrt{100}$
- Identify the following as rational or irrational numbers. Give the decimal representation of rational numbers:
 $\sqrt{4}$

section C

* **Answer the following questions. [3 Marks Each] [9]**

- Simplify the following:
 $(\sqrt{3} - \sqrt{2})^2$
- Find two irrational numbers between 0.5 and 0.55.
- Prove that:

$$\left(\frac{1}{x^{a-b}}\right)^{\frac{1}{a-c}} \times \left(\frac{1}{x^{b-c}}\right)^{\frac{1}{b-a}} \times \left(\frac{1}{x^{c-a}}\right)^{\frac{1}{c-b}} = 1$$

* **Questions with calculation. [4 Marks Each] [8]**

4. Simplify by rationalising the denominator:

$$\frac{7\sqrt{3}-5\sqrt{2}}{\sqrt{48}+\sqrt{18}}$$

5. Visualize the representation of $4.\overline{67}$ on the number line up to 4 decimal places.

section D

* Answer the following questions. [5 Marks Each]

[5]

1. Express $0.6 + 0.\overline{7} + 0.4\overline{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

