Study Point Coaching Classes

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WEEKLY TEST PAPER- MATHEMATICS (CLASS-10)

SYLLABUS-RATIONAL AND IRRATIONAL NUMBERS AND COMPOUND INTEREST

Time allowed: 2 hours **Maximum marks: 100**

General instructions:

(i) This paper is divided into three sections: A,B and C. All the sections are **compulsory.**

(ii) The intended marks for questions or parts of questions are given in brakets ()

Do not open the booklet until you are told to do so.

Section-A

Q-1- Choose the correct answer in each of the following questions: (2.5M x 12=30 M)

1. Between two rational numbers

(a) There is no rational numbers

(b) There is exactly one rational numbers

(c) There are infinitely many rational numbers

(d) There are only rational numbers and no irrational numbers.

2. Decimal representation of a rational number cannot be

(a) Terminating

(b) Non-terminating

(c) Non-terminating repeating

(d) Non-terminating non-repeating

3. The product of any two irrational numbers is

(a) Always an irrational number (b) Always and rational number

c) Always an integer (d) Sometimes rational, sometimes irrational

4. The division of two irrational numbers is

(a) A rational number

(b) An irrational number

(c) Either a rational number or an irrational number

(d) Neither rational number nor irrational number

5. Which of the following is an irrational number?

(a) $\sqrt{\frac{4}{9}}$ (b) $\frac{\sqrt{12}}{\sqrt{3}}$ (c) $\sqrt{7}$ (d) $\sqrt{81}$

6. Which of the following numbers has non-teminating repeating decimal expansion?

(a) $\frac{11}{30}$ (b) $\frac{17}{160}$ (c) $\frac{63}{240}$ (d) $\frac{93}{420}$

7. A rational number between $\sqrt{2}$ and $\sqrt{3}$ is

(a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\frac{\sqrt{2} \times \sqrt{3}}{2}$ (c) 1.5 (d) 1.8

8. $\sqrt{10} \times \sqrt{15}$ is equal to

(a) $6\sqrt{5}$ (b) $5\sqrt{6}$ (c) $\sqrt{25}$ (d) $10\sqrt{5}$

9. The value of $\sqrt{8} + \sqrt{18}$ is

(a) $\sqrt{26}$ (b) $2(\sqrt{3})^2$ (c) $5\sqrt{2}$ (d) $6\sqrt{2}$

10. The number obtained on rationalizing the denominator of $\frac{1}{\sqrt{7}-2}$ is

(a) $\frac{\sqrt{7}+2}{3}$ (b) $\frac{\sqrt{7}-2}{3}$ (c) $\frac{\sqrt{7}+2}{5}$ (d) $\frac{\sqrt{7}+2}{45}$

11. The compound interest on ₹ 5000 at 20 % per annum for $1\frac{1}{2}$ years compounded half-yearly is

(a) ₹ 6655 (b) ₹ 1655 (c) ₹ 1500 (d) ₹ 1565

12. The present population of the city is 12,00,000.If it increases at the rate of 8% every year,then the population of the city after 2 years is

(a) 199680 (b)1399680 (c)1500000 (d) 1299680

SECTION-B

Q-2 Short Answers: (4M x 10=40 M)

1. State which of the following number will change into non-teminating non-recurring decimals:

(i) $-3\sqrt{2}$

(ii) $\sqrt{27 \text{ x } 16}$

2. Find the greatest and the smallest real numbers among the following real numbers:

(i) $-3\sqrt{2}$, $\frac{9}{\sqrt{5}}$, -4 , $\sqrt{50}$, $\frac{3}{2}\sqrt{3}$

3. Write the following numbers in ascending order:

(i) $3\sqrt{2}$, $2\sqrt{8}$, 4 , $\sqrt{50}$, $4\sqrt{3}$

4. Write the following numbers in descending order:

(i) $\frac{9}{\sqrt{2}}$, $\frac{3}{2}\sqrt{2}$, $4\sqrt{3}$, $3\sqrt{\frac{6}{5}}$

5. Arrange the following numbers in ascending order: $\sqrt[3]{2}$, $\sqrt{3}$, $\sqrt[6]{5}$

6. Arrange the following numbers in ascending order: $\sqrt{3}$, $\sqrt[3]{5}$, $\sqrt[4]{9}$
7. Locate $\sqrt{10}$ and $\sqrt{17}$ on the number line.
8. Without actually performing the long division, state whether the following rational numbers

Will have a terminating decimal expansion or a non-terminating repeating decimal expansion:

(i) $\frac{6}{15}$

(ii) $\frac{1258}{625}$

9. Find six rational numbers between 3 and 4.
10. Prove that $\sqrt{5}$ is an irrational number.

SECTION-C

(WORLD PROBLEMS) (6M x 5=30)

1. A some of money invested at compound interest doubles itself in 4 years, interest being payable annually. In how much time will it be eight times?
2. Determine the rate of interest for a sum that becomes $\frac{216}{125}$ times of itself in $1\frac{1}{2}$ years, Compounded semi-annually.
3. A sum of money is invested at compound interest payable annually. The interest in two successive years is ₹225 and ₹250. Find:

(i) The rate of interest

(ii) The original sum

(iii) The interest earned in the third year.

4. A sum of ₹16000 ears a compound interest of ₹2522 in 18 months, when the interest is compounded half-yearly. Find the rate of interest.
5. Jaya borrowed ₹50000 for 2 years. The rates of interest for two successive years are 12% and 15% respectively. She repays ₹33000 at the end of fitst year. Find the amount she must pay at the end of second year to clear her debt.

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