RK VISION ACADEMY
NEET | IIT – JEE | FOUNDATION
CBSE PRACTICE PAPER(2024)
(Mathematics)

Grade : X   **Marks: 40**
marks
Chapter: Real Numbers SET 2   **Time: 90 minutes**
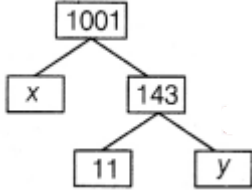
SECTION A
(This section comprises of Multiple-choice questions (MCQ) of 1 mark each.)

1. Which of the following is not an irrational number?

   (a) $7\sqrt{5}$ (b) $2\sqrt{2} + 2\sqrt{5}$ (c) $(\sqrt{5} - 3) - \sqrt{5}$ (d) $\sqrt{5} + 32$

2. The HCF and LCM of two numbers are 33 and 264, respectively. When the first number is completely divided by 2, then the quotient is 33. The other number is

   (a) 66   (b) 130   (c) 132   (d) 196

3. The HCF of 30, 72 and 432 is

   (a) 13   (b) 7   (c) 5   (d) 6

4. For which natural number $(12)^n$ can never end with the digit n?

   (a) 0 or 5   (b) 2 or 4   (c) 2 or 3   (d) 4 or 3

5. The LCM of $(2 \times 3^2 \times 5)$ and $(2^2 \times 3 \times 5)$ is

   (a) 4500   (b) 30   (c) 900   (d) 1500

6. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 sec, B in 308 sec and C in 198 sec, all starting at the same point. After what time will they

   (a) 46 min 12 sec   (b) 12 min 46 sec   (c) 44 min 12 sec   (d) 46 min 44 sec

7. Factorise the number 98 through factor tree

   (a) 2   (b) 2×7^3 (c) 7^2 (d) 2×7^2

8. If the HCF of 408 and 1032 is expressed in the form $1032 \times 2 + 408 \times p$, then the value of p is [1]

   (a) 5   (b) -5   (c) 4   (d) -4

9. Assertion (A) HCF of (11, 17) is 1.
   Reason (R) If p and q are prime, then HCF (p, q) = 1

   (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

   (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

   (c) Assertion (A) is true but Reason (R) is false.

   (d) Assertion (A) is false but Reason (R) is true.

10. Assertion (A) √2 is an irrational number.
    Reason (R) If p be a prime, then √p is an irrational number.

    (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct

    (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A)

    (c) Assertion (A) is true but Reason (R) is false

    (d) Assertion (A) is false but Reason (R) is true

explanation of Assertion (A)

SECTION B
(This section comprises of very short answer type-questions (VSA) of 2 marks each.)

11   Show that $6 - 2\sqrt{3}$ is irrational.

12   The value of x and y in the given figure are

13   : Can the number 6n , n being a natural number, end with the digit 5? Give reasons.

SECTION C
(This section comprises of short answer type questions (SA) of 3 marks each)

14   Three sets of English, Hindi and Mathematics book have to be stacked in such a way that all the books are stored topicwise and the height of each stack is the same.The number of English book is 96, the number of Hindi books is 240 and the number of Mathematics books is 336. Assuming that the books are of the same thickness, determine the number of stacks of English, Hindi and Mathematics books.

15   On a morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm, respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?

16   Explain why $(17^{5} \times 11 \times 3 \times 2 + 2 \times 11)$ *is a composite number*.

SECTION D
(This section comprises of long answer-type questions (LA) of 5 marks each)

17   Prove that $\sqrt{2} + \sqrt{3}$ is irrational.

18   Find the HCF and LCM of 306 and 657 and verify LCM $\times HCF$ = product of two numbers.

19   If the HCF of the 144 and 180 in the form of 13m-3 find the value of m.