Chapter- 1

Real Numbers

WORKSHEET

1 Mark

1. Which of the following numbers has terminating decimal expansion?

   (a) 37/45 (b) $21/2^3 5^6$ (c) 17/49 (d) $89/2^2 3^2$

2. The HCF X LCM for the numbers 50 and 20 is

   (a) 10 (b) 100 (c) 1000 (d) 50

3. The length of the diagonals of a rhombus is 24 cm and 32 cm. The perimeter of the rhombus is

   (a) 9 cm (b) 128 cm (c) 80 cm (d) 56 cm

4. 119^2-$111^2$is:

   (a) Prime number (b) Composite number

   (c) An odd prime number (d) an odd composite number

5. If a is an odd number, b is not divisible by 3 and LCM of a and b is p then LCM of 3a 2b is

   (a) p^2 (b) 5p (c) 6p (d) 3p

6. Euclid's division lemma states that for two positive integers a and b, there exist unique integers q and r such that a= bq + r, where r must satisfy –

   (a)1 < r < b (b) 0 < r ≤ b (c)0 ≤ r < b (d) 0 < r < b

7. The decimal expansion of the rational number $31/2^2 5^1$ will terminate after:

   (a) One decimal place (b) two decimal places

   (c) Three decimal places (d) more than 3 decimal places

8. n^2-1 is divisible by 8, if n is

   (a) An integer (b) a natural number

   (c) An odd integer (d) an even integer

9. If the HCF of 65 and 117 is expressible in the form 65 m – 117, then the value of m is

   (a) 4 (b) 2 (c) 3 (d) 1

10. Which of the following is a non-terminating repeating decimal?

    (a) 35/14 (b)14/35 (c)1/7 (d)7/8

2 Marks

11. Check whether 6^n can end with the digit 0 for any natural number n.
12. Show that every positive even integer is of the form 2q and that every positive odd integer is of the form 2q + 1, where q is some integer.
13. Is 7 X 11 X 13 + 11 a composite number? Justify your answer.
14. Use Euclid's division lemma to show that the cube of any positive integer is of the form 9m +1 or 9m + 8 for some positive integer m.
15. Can the number 6^n, n being a natural number, ends with the digit 5? Give reason.
16. Find the HCF of 255 and 867 by Euclid Division Algorithm.
17. Find the HCF of 918 and 162 using Euclid's Division Algorithm.
18. HCF and LCM of two numbers is 9 and 459 respectively. If one of the numbers is 27 thenfind the other number.
19. Show that the number 4^n, when n is a natural number cannot end with the digit zero for any natural number, n.

3 Marks

20. Prove that $\sqrt{7}$ is an irrational number.
21. Prove that $3+\sqrt{5}$ is an irrational number.
22. Prove that $2-3\sqrt{5}$ is an irrational number.
23. Prove that $\sqrt{2}-\sqrt{5}$ is an irrational number.
24. Find HCF of 180, 252 and 324 using Euclid's Division Lemma.
25. Use Euclid's division algorithm to find the HCF of 10224 and 9648.