Real Numbers

1 Mark

1. State whether $\frac{6}{300}$ has terminating or non-terminating repeating (recurring) decimal expansion.

2. If LCM(52, 182)=364, write HCF(52, 182).

3. Write two rational numbers between $\frac{1}{2}$ and $\frac{2}{3}$.

4. If a and b are two prime numbers, write their LCM.

5. State whether $3 \times 7 \times 17 \times 19 + 17$ is a prime number or composite number.

6. If HCF(24, 60)=12, write LCM(24,60).

7. State fundamental theorem of the Arithmetic.

8. State whether $\frac{123}{2^3 \times 3 \times 5^2}$ has terminating or non-terminating repeating (recurring) decimal expansion.

9. Write HCF of 11 and 17.

10. Write two rational numbers between 1 and 2.

2 Marks

11. Using Euclid's division algorithm, find HCF of 75 and 160.

12. Decimal Expansion of two real numbers is given as (i) 0.202002000... (ii) 3.333... State whether they are rational of irrational numbers.

13. An army group of 308 members is to march behind an army band of 24 members in parade. The two groups are to march in the same number of columns. What is the maximum number of column in which they can march?

14. Using Euclid's division algorithm, find HCF of 135 and 225.

15. Find HCF of 105, 120 and 150.

16. Find the largest number which divides 245 and 1029 leaving remainder 5 in each case.

17. Find the greatest number which divides 285 and 1249 leaving remainder 9 and 7 respectively.

18. Two brands of chocolates are available in pack of 24 and 15 respectively. If I need to buy an equal number of chocolates of both kinds, what is the least number of boxes of each kind I would need to buy?

19. Find HCF and LCM of 96 and 240.

20. Write two irrational numbers whose sum is rational.

3 Marks

21. Show that $2 - \sqrt{3}$ is an irrational number.

22. Show that $\sqrt{3}$ is an irrational number.

23. Check whether 4^n can end with the digit 0 for any natural number n.

24. Show that $3\sqrt{5}$ is an irrational number.

25. Show that $\sqrt{2} + \sqrt{3}$ is an irrational number.

26. Show that any positive odd integer is of the form $4q + 1 \ or \ 4q + 3$, where q is some positive integer.

27. The length, breadth and height of a room are 8m25cm, 6m75cm and 4m50cm respectively. Determine the longest rod which can measure the three dimensions of the room exactly.

28. Show that $3 + \sqrt{5}$ is an irrational number.

29. Find the largest number that will divide 398, 436 and 540 leaving remainders 7, 11 and 13 respectively.

30. Show that $7\sqrt{2} - 3$ is an irrational number.

Answers

1. Terminating
2. 26
3. $\frac{1}{2} < \frac{p}{q} < \frac{2}{3}$ but $q \neq 0$
4. $a \times b$
5. Coprime number
6. 120
8. Terminating
9. 1
10. Non-terminating
11. 5
12. (i) Irrational (ii) rational
13. 4

14. 45
15. HCF = 15
16. 16
17. 138
18. 5 boxes of first kind and 8 of second kind
19. HCF = 48, LCM = 480
20. $\left(2 + \sqrt{3}\right) \ and \ \left(2 - \sqrt{3}\right)$ such other real number also
23. No.
27. 75cm
29. 17

By **Arun Kumar Shukla**