1. $7 \times 11 \times 13 \times 15 + 15$ is a
   (a) Composite number (b) Whole number
   (c) Prime number (d) None of these

2. For what least value of 'n' a natural number, $(24)^n$ is divisible by 8?
   (a) 0 (b) -1
   (c) 1 (d) No value of 'n' is possible

3. The sum of a rational and an irrational is
   (a) Rational (b) Irrational
   (c) Both (a) & (c) (d) Either (a) or (b)

4. A lemma is an axiom used for proving
   - other statement (b) no statement
   (c) Contradictory statement (d) none of these

5. If HCF of two numbers is 1, the Two number are called relatively _____or_____
   - Prime, co-prime (b) Composite, prime
   (c) Both (a) and (b) (d) None of these

6. $2.35\overline{\text{ }}$ is
   - a terminating decimal number (b) a rational number
   (c) an irrational number (d) Both (a) and (b)

7. HCF of two numbers is 113, their LCM is 56952. Its number is 904. The other number is:
   (a) 7719 (b) 7119
   (c) 7791 (d) 7911

8. The smallest composite number is:-
   (a) 1 (b) 2 (c) 3 (d) 4

9. $1.2348$ is
   (a) an integer (b) an irrational number
   (c) a rational number (d) None of there

10. **$\pi$ is** (a) rational (b) irrational
    (c) both (a) & (b) (d) neither rational nor irrational

11. Show that every positive even integer is of the from 2q and that every positive odd integer is the four 2q+1 for some integer q.

12. Show that any number of the form $4^n$ , nEN can never end with the digit 0.

13. Use Euclid's division algorithm to find the HCF of 4052 and 12576

14. Given that HCF of two numbers is 23 and their LCM is 1449. If one of the numbers is 161, find the other.

15. Find the greatest of 6 digits exactly divisible by 24, 15 and 36

16. Prove that the square of any positive integer is of the form 4q or 4q+1 for some integer.

17. 144 cartoons of coke can and 90 cartoons if Pepsi can are to be stacked in a canteen It each stack is of the same height and is to contain cartoons of the same Drink. What would be the greater number of cartoons each stack would have

18. Prove that Product of three consecutive positive integers is divisible by 6.

19. Prove that the square of any positive integer of the form 5g+1 is of the same form

20. Use Euclid's division algorithm to find the HCF of 4052 and 12576

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

22. A shopkeeper has 120 liters of petrol, 180 liters of diesel and 240 liters of kerosene. He wants to sell oil by filling the three kinds of oils in tins of equal capacity. What should be the greatest capacity of such a tin

23. Prove that in $\sqrt{n}$ is not a rational number, if n is not perfect square

24. Prove that the difference and quotient of $\left(3+2\sqrt{3}\right)$ and $\left(3-2\sqrt{3}\right)$ are irrational

25. Show that $(n^2-1)$ is divisible by 8, if n is an odd positive integer\

26. Show that every positive odd integer is of the form (4q+1) or (4q+3) for same inter q.

27. Show that any number of the form $6^x$, $x \in N$ can never end with the digit 0

28. Find HCF and LCM of 18 and 24 by the prime factorization method.

29. The HCF of the two numbers is 23 and their LCM is 1449. If one of the numbers is 161, find the other

30. Prove that $(3-\sqrt{5})$ is irrational.

31. Prove that if x and y are odd positive integers then $x^2+y^2$ is even but not divisible by 4

32. Show that one and only one out of n, (n+2) or (n+4) is divisible by 3, where $n \in N$

33. Use Euclid division lemma to show that cube of any positive integer is either of the form 9m. (9m+1) or 9m+8

34. Show that any number of the form $6^x$, $x \in N$ can never end with the digit 0

35. Use Euclid's division lemma to show that the square of any positive integer of the from 3m or (3m+1) for some integer q