**½ mark and 1mark questions**

1. Insert 4 rational numbers between 3/4 and 1 without using the formula ?
2. The prime factorization of a natural number is 23 × 3² × 5² × 7. How many consecutive zeroes will it have at the end of it? Justify your answer?
3. Find the value of log 5 125?
4. Write any two rational numbers lying between 3 and 4?
5. Find the value of log √2 256?
6. Find the H.C.F and L.C.M of 90 and 144 by prime factorization method?
7. Is log 3 81 rational or irrational? Justify your answer?
8. Expand log 10 385?
9. Find the value of log √2 128.
10. Find the H.C.F of 24 and 33 by using division algorithm.
11. Ramu says, “If log 10 x = 0, then the value of x = 0”. Do you agree with him? Give reason.
12. Vijay says, “If log 4 4 = 1, then log 1 1 = 1”. Do you agree with him? Give reason.
13. State the fundamental theorem of Arithmetic.
14. Write the decimal form of
15. State whether is terminating decimal or not without actual division.
16. Find the H.C.F of 23 × 3² × 54 and 22 × 35 × 5?
17. What is the unit digit in 62020 ?
18. If ‘a’ and ‘b’ are coprime numbers then find H.C.F (a, b)?
19. Amani says, “log 3 is an irrational number”. Can you agree with Amani? Justify your answer.
20. Is (11 × 7 × 5 × 3) + (11 × 7 × 5 × 3) a composite number?
21. After how many decimal places, the decimal expansion of the rational number will terminate?
22. The L.C.M and H.C.F of x and 18 are 36 and 2 respectively. Then find x value?
23. “If A and B are two irrational numbers, then A + B is not always irrational number”. Give an example of A and B to prove this statement.
24. Find the value of log 5 √625?
25. In a = bq + r, if r = 0, then b is \_\_\_\_\_\_\_\_ of a.
26. Find the value of 32 + log 3 5
27. Express 440 as product of prime factors?
28. Evaluate log5 (-25)?
29. Write the condition to be satisfied by q so that a rational number p/q has a terminating decimal expansion.
30. Find the H.C.F of least prime number and the least composite number?
31. Write the decimal form of without actual division?
32. Which of the following is not irrational?  
    A) 1.010010001……. B)

C) π D) 1.238758473902

1. Statement A: is a rational number.

Statement B: π is an irrational number

A) both A and B are true. B) both A and B are false

C) A is true and B is false. D) A is false and B is true.

1. Match the following

Group A Group B

1. log 5 25 ( ) P. 1

2. log 3 3 ( ) Q. 2

3. log 2/3 8/27 ( ) R. 3

A) 1-p, 2- Q, 3-R B) 1-R, 2-P, 3-Q C) 1-Q, 2-P, 3-R D) 1-Q, 2-R, 3-P

**2 marks questions**

1. Write any three numbers of two digits. Find the L.C.M and H.C.F for them by prime factorization method.
2. Give an example for each of the following

a) The product of two rational numbers is a rational number.

b) The product of two irrational numbers is an irrational number.

1. State with reasons which of the following are rational numbers and which irrational numbers are? (1) (2) 6 + 8
2. If x² + y² = 7xy, then show that 2 log (x + y) = log x + log y + 2 log 3
3. Express 2016 as product of prime factors.
4. Prove that 2 + √3 is an irrational number?
5. Show that log + 2 log – log = log 2.
6. Lalitha says that H.C.F and L.C.M of the numbers 80 and 60 are 20 and 120 respectively. Do you agree with her? Justify.
7. If x² + y² = 10xy, then prove that 2 log (x + Y) = log x + log y + 2 log 2 + log 3?
8. Expand log ?
9. If x = log 3 5 and y = log 3 2 then express log 1500 in terms of x and y?
10. If log (x² + y²) = log x + log y + log 2, then prove that x = y?
11. Find the largest number which divides 615 and 963 leaving remainder 6 in each.
12. If log 3 = 0.4771 then find the value of log 15 + log 2?
13. Verify whether 3 log 2 + 2 log 5 = 2 + log 2 true or not.
14. If logy x + logy x² = 3, then find the value of logx y3?
15. Find x if log7 (2x² - 1) = 2.
16. Express as a single logarithm: 2 + log10 9 – 2 log10 5
17. Find x if log (x + 1) + log (x – 1) = log 11 + log 3?
18. If log10 2 = 0.3010, then find the value of log10 5?

**4 marks questions**

1. Prove that 3 + 2√5 is an irrational number.
2. Expand log
3. Express the numbers 6825 and 3825 as a product of its prime factors. Find the H.C.F and L.C.F of the above numbers by using their products of prime factors. Justify your answer.
4. Use Euclid’s division Lemma to show that the cube of any positive integers is of the form 7m or 7m + 1 or 7m + 6.
5. Prove that is an irrational number.
6. Use Euclid’s division lemma to show that the square of any positive integer is of the form 5n or 5n + 1 or 5n + 4 where n is a whole number.
7. If x² + y² = 27xy, show that log =
8. Show that cube of any positive integer will be in the form of 8m or 8m + 1 or 8m + 3 or 8m + 5 or 8m + 7 where m is a whole number.
9. Prove that is an irrational number?
10. Show that is an irrational number.
11. If (4.2) x = (0.42) y = 1000 then find the value of
12. Solve 2x = 7x-3
13. If log = then find the value of .
14. Prove that √5 is an irrational number by the method of contradiction.
15. Show that is an irrational number?
16. Prove that log10 125 = 3(1 – log10 2)?
17. Solve log5 (x + 1) – 1 = 1 + log5 (x – 1)?
18. Given log3 m = x and log3 n = y and if 2 log3 A = 5x – 3y, find A in terms of m and n?