**Number System**

**Model 1: Two-Digit Numbers**

1. C:\Users\tsuser.PC\Desktop\final.pngThe number obtained by interchanging the two digits of a two-digit number is more   
   than the original number by 27. If the sum of the two digits is 13, what is the original number? 1) 63 2) 74 3) 85 4) 58 5) None of these
2. The number obtained by interchanging the two digits of a two-digit number is less   
   than the original number by 18. The sum of the two digits of the number is 16.   
   What is the original number?

1) 97 2) 87 3) 79 4) Cannot be determined 5) None of these

1. C:\Users\tsuser.PC\Desktop\final.pngWhen the digits of a two-digit number are interchanged, the number obtained is less than the original number by 36. What is the original number if the difference of the two digits is 4? 1) 84 2) 51 3) 73 4) Cannot be determined 5) None of these
2. If the positions of the digits of a two-digit number are interchanged, the number   
   obtained is smaller than the original number by 27. If the digits of the number are in the ratio of 1:2, what is the original number? 1) 36 2) 63 3) 48 4) Cannot be determined 5) None of these
3. If the digits of a two-digit number are interchanged, the number formed is greater   
   than the original number by 45. If the difference between the digits is 5, what is   
   the original number? 1) 16 2) 27 3) 38 4) Cannot be determined 5) None of these

**Model 2: Consecutive Numbers**

1. C:\Users\tsuser.PC\Desktop\final.pngThe sum of four consecutive even numbers is 44. What is the sum of the original squares of these numbers? 1) 288 2) 502 3) 696 4) 920 5) None of these
2. A, B, C, D and E are five consecutive odd numbers. The sum of A and C is 146.   
   What is the value of E? 1) 75 2) 81 3) 71 4) 79 5) None of these
3. **C:\Users\tsuser.PC\Desktop\final.png**The product of two successive numbers is 4692. Which is the smaller of the two numbers?  
   1) 69 2) 62 3) 68 4) 67 5) None of these



1. The product of two successive numbers is 9506. Which is the smaller of the two numbers?  
   1) 96 2) 97 3) 98 4) 99 5) None of these
2. The product of two consecutive even numbers is 3248. Which is the larger number?  
   1) 58 2) 62 3) 56 4) 60 5) None of these
3. C:\Users\tsuser.PC\Desktop\final.pngThe sum of five consecutive even numbers is 200. What is the sum of the next set of the consecutive even numbers? 1) 215 2) 235 3) 240 4) 250 5) None of these
4. The sum of five consecutive odd numbers is 575. What is the sum of the next set of the consecutive odd numbers? 1) 615 2) 635 3) 595 4) Cannot be determined 5) None of these

**Model 3: Divisibility Rules**

1. C:\Users\tsuser.PC\Desktop\final.pngWhat is the smallest number that should be added to 89357 to make it exactly divisible by 9?

1) 1 2) 3 3) 4 4) 7 5) None of these

1. Which smallest number should be added to 86237 to make it exactly divisible by 9?   
   1) 11 2) 9 3) 10 4) 2 5) None of these
2. C:\Users\tsuser.PC\Desktop\final.pngWhat is the smallest digit which should replace \* in the number 296\*12 to make it divisible by 12? 1) 1 2) 2 3) 3 4) 4 5) None of these
3. What is the smallest positive integer that should be added to 7000 to make it a perfect   
   square? 1) 35 2) 225 3) 20 4) 56 5) None of these

**Model 4: Algebra**

1. C:\Users\tsuser.PC\Desktop\final.pngThe difference between two numbers is 4 and the difference between their squares   
   is 128. What is the larger number? 1) 14 2) 16 3) 12 4) 18 5) None of these
2. The difference between two numbers is 3 and the difference between their squares   
   is 63. What is the larger number?

1) 12 2) 9 3) 15 4) Cannot be determined 5) None of these

1. On a school’s annual day sweets are to be equally distributed amongst 112 children. But on that particular day, 32 children were absent. Thus, the remaining children got 6 extra sweets. How many sweets was each child originally supposed to get? 1) 24 2) 18 3) 15 4) Cannot be determined 5) None of these
2. There are two numbers such that the sum of twice the first number and thrice the   
   second number is 300 and the sum of thrice the first number and twice the second   
   number is 265. What is the larger number? 1) 24 2) 39 3) 85 4) 74 5) None of these
3. C:\Users\tsuser.PC\Desktop\final.png

1) 4 2) 3 3) 8 4) 2 5) None of these

**Model 5: Exponents**

1. C:\Users\tsuser.PC\Desktop\final.png

1) 2.4 2) 3.5 3) 5 4) 4 5) None of these



1) 7.8 2) 3.9 3) 4.5 4) 5.4 5) None of these

**Model 6: Arrangement of Fractions**

1. C:\Users\tsuser.PC\Desktop\final.png Arrange the given fractions in ascending order 9/17, 7/23, 11/21 and 13/19

1) 13/19, 9/17, 7/23, 11/21 2) 9/17, 11/21, 7/23, 13/19

3) 7/23, 11/21, 9/17, 13/19 4) 11/21, 9/17, 7/23, 13/19 5) None of these

1. Arrange the given fractions in descending order 3/4, 8/21, 11/17 and 13/40

1) 11/17, 3/4, 8/21, and 13/40 2) 3/4, 11/17, 8/21, and 13/40 3)8/21, 11/17, 3/4, and 13/40 4) 13/40, 3/4, 11/17 and 8/21 5) None of these

**Answers**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 - 4 | 2 - 1 | 3 - 4 | 4 - 2 | 5 - 4 | 6 - 5 | 7 - 4 | 8 - 3 | 9 - 2 | 10 - 1 |
| 11 - 4 | 12 - 5 | 13 - 3 | 14 - 5 | 15 - 1 | 16 - 4 | 17 - 4 | 18 - 1 | 19 - 3 | 20 - 4 |
| 21 - 4 | 22 - 2 | 23 - 1 | 24 - 3 | 25 - 2 |  |  |  |  |  |

**Additional Examples**

1. C:\Users\tsuser.PC\Desktop\final.pngThe difference of a number consisting of two digits from the number formed by interchanging the digits is always divisible by   
   a) 10 b) 9 c) 11 d) 6
2. C:\Users\tsuser.PC\Desktop\final.pngNumber of digits in the square root of 62478078 is   
   a) 4 b) 5 c) 6 d) 3
3. C:\Users\tsuser.PC\Desktop\final.pngThe fourth root of 24010000 is –   
   a) 7 b) 49 c) 490 d) 70
4. C:\Users\tsuser.PC\Desktop\final.pngA rational number between 3/4 and 3/8 is   
   a) 12/7 b) 7/3 c) 16/9 d) 9/16
5. C:\Users\tsuser.PC\Desktop\final.pngA number x when divided by 289 leaves 18 as the remainder. The same number when divided by 17 leaves y as a remainder. The value of y is   
   a) 5 b) 2 c) 3 d) 1
6. C:\Users\tsuser.PC\Desktop\final.pngA number x when divided by 49 leaves 32 as the remainder. The same number when divided by 7 leaves y as a remainder. The value of y is   
   a) 5 b) 2 c) 3 d) 4
7. C:\Users\tsuser.PC\Desktop\final.pngWhen ‘n’ is divided by 5 the remainder is 2. What is the remainder when n² is divided by 5? a) 2 b) 3 c) 1 d) 4
8. C:\Users\tsuser.PC\Desktop\final.pngThe sum of two numbers is 24 and their product is 143. The sum of their squares is   
   a) 296 b) 295 c) 290 d) 228
9. C:\Users\tsuser.PC\Desktop\final.pngIf the sum of two numbers be multiplied by each number separately, the products so obtained are 247 and 114. The sum of the numbers is   
   a) 19 b) 20 c) 21 d) 23
10. C:\Users\tsuser.PC\Desktop\final.pngIf a and b are odd numbers, then which of the following is even?   
    a) a + b + ab b) a+b-1 c) a+b+1 d) a+b+2ab
11. C:\Users\tsuser.PC\Desktop\final.pngThe number 0.121212 \_\_\_ in the form p/q is equal to   
    a) 4/11 b) 2/11 c) 4/33 d) 2/33
12. C:\Users\tsuser.PC\Desktop\final.png0.001 is equal to   
    a) 1/1000 b) 1/999 c) 1/99 d) 1/9
13. C:\Users\tsuser.PC\Desktop\final.png(4.41×0.16)/(2.1×1.6×0.21) is simplified to   
    a) 1 b) 0.1 c) 0.01 d) 10
14. C:\Users\tsuser.PC\Desktop\final.pngBy what least number should 675 be multiplied so as to obtain a perfect cube number?   
    a) 3 b) 5 c) 24 d) 40
15. C:\Users\tsuser.PC\Desktop\final.pngI multiplied a natural number by 18 and another by 21 and added the products. Which of the following could be the sum?   
    a) 2007 b) 2008 c) 2006 d) 2002
16. C:\Users\tsuser.PC\Desktop\final.pngWhen 231 is divided by 5 the remainder is   
    a) 4 b) 3 c) 2 d) 1
17. C:\Users\tsuser.PC\Desktop\final.pngIf a and b are two odd positive integers, by which of the following integers (a4 – b4) always divisible?   
    a) 3 b) 6 c) 8 d) 12
18. The number 323 has   
    a) three prime factors b) five prime factors   
    c) two prime factors d) no prime factor
19. The next term of the series 1, 5, 12, 24, 43 is\_   
    a) 51 b) 62 c) 71 d) 78
20. If 21 is added to a number, it becomes 7 less than thrice of the number. Then the number is\_ a) 14 b) 16 c) 18 d) 19
21. The numerator of a fraction is 4 less than its denominator. If the numerator is decreased by 2 and the denominator is increased by 1, then the denominator becomes eight times the numerator. Find the fraction.   
    a) 3/8 b) 3/7 c) 4/8 d) 2/7
22. The greatest 4 digit number which is a perfect square, is –   
    a) 9999 b) 9909 c) 9801 d) 9081
23. Find a number, one-seventh of which exceeds its eleventh part by 100.   
    a) 1925 b) 1825 c) 1540 d) 1340
24. In an examination a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 75 questions and success 125 marks, the number of questions he attempts correctly is   
    a) 35 b) 40 c) 42 d) 46
25. A student was asked to divide a number by 6 and add 12 to the quotient. He, however, first added 12 to the number and then divided it by 6, getting 112 as the answer. The correct answer should have been   
    a) 124 b) 122 c) 118 d) 114
26. The least number, which is to be added to the greatest number of 4 digits so that the sum may be divisible by 345, is   
    a) 50 b) 6 c) 60 d) 5
27. The product of two numbers is 45 and their difference is 4. The sum of squares of the two numbers is   
    a) 135 b) 240 c) 73 d) 106
28. The ninth term of the sequence, 0, 3, 8, 15, 24, 35, \_\_\_ is   
    a) 63 b) 70 c) 80 d) 99
29. A number, when divided by 114, leaves remainder 21. If the same number is divided by 19, then the remainder will be   
    a) 1 b) 2 c) 7 d) 17
30. The square root of 0.09 is   
    a) 0.3 b) 0.03 c) 0.81 d) 0.081
31. (11/2 + 11 1/2 + 111 1/2 + 1111 1/2 ) is equal to   
    a) 1236 b) 1234 1/2 c) 618 d) 617
32. In a question on division with zero remainder, a candidate took 12 as divisor, instead of 21. The quotient obtained by him was 35. The correct quotient is   
    a) 0 b) 12 c) 13 d) 20
33. The divisor is 25 times the quotient and 5 times the remainder. If the quotient is 16, then the dividend is   
    a) 6400 b) 6480 c) 400 d) 480
34. The numbers 2272 and 875 are divided by three digit number N, giving the same remainder. The sum of the digits of N is   
    a) 13 b) 10 c) 14 d) 11
35. If N, (N+2) and (N+4) are prime numbers, then the number of possible solutions for N are a) 1 b) 2 c) 3 d) None of these
36. Find the sum of (1+0.6+0.06+0.006+0.0006+….)   
    a) 1 2/3 b) 1 1/3 c) 2 1/3 4) 2 2/3
37. The fifth term for the sequence for which t1=1, t2=2 and tn+2=tn+tn+1 is   
    a) 5 b) 10 c) 6 d) 8
38. The maximum integral value of n for which 𝑛2+𝑛+6 𝑛 is an integer, is   
    a) 3 b) 2 c) 6 d) 8
39. The smallest positive prime (say p) such that 2𝑝 -1 is not a prime, is   
    a) 5 b) 11 c) 17 d) 29
40. Find the number of those numbers which are between 200 and 600 and divisible by 4, 5 and 6.   
    a) 7 b) 10 c) 5 d) 8

**Answers**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 - d | 2 - d | 3 - d | 4 - d | 5 - d | 6 - d | 7 - d | 8 - c | 9 - a | 10 - d |
| 11 - c | 12 - b | 13 - a | 14 - b | 15 - a | 16 - b | 17 - c | 18 - c | 19 - c | 20 - d |
| 21 - b | 22 - c | 23 - a | 24 - b | 25 - b | 26 - b | 27 - d | 28 - c | 29 - b | 30 – a |
| 31 - a | 32 - d | 33 - b | 34 - b | 35 - a | 36 - a | 37 - d | 38 - d | 39 - b | 40 - a |