PLAYING WITH NUMBERS

1. **Generalized form of a four-digit number abdc is**
   a. **(a) 1000a + 100b + 10c + d (b) 1000a + 100c + 10b + d (c) 1000a + 100b + 10d + c (d) a x b x c x d**
2. **Generalised form of a two-digit number xy is**
   a. **(a)x + y (b)10x + y (c)10x-y (d)10y+x**
3. **The usual form of 1000a + 10b + c is**
   a. **abc (b) abc0 (c) a0be (d) ab0c**
4. **Let abc be a three-digit number. Then, abc – cba is not divisible by**
   a. **9 (b) 11 (c) 18 (d) 33**
5. **The sum of all the numbers formed by the digits x, y and z of the number xyz is divisible by**
   a. **11 (b) 33 (c) 37 (d) 74**
6. **A four-digit number aabb is divisible by 55. Then, possible value(s) of b is/are**
   a. **0 and 2 (b) 2 and 5 (c) 0 and 5 (d) 7**
7. **Let abc be a three-digit number. Then, abc + bca + cab is not divisible by**
   a. **a + b + c (b) 3 (c) 37 (d) 9**
8. **If abc is a three-digit number, then number abc -a-b-c is divisible by**
   a. **9 (b) 90 (c)10 (d) 11**
9. **A six-digit number is formed by repeating a three-digit number. For example, 256256, 678678 etc. Any number of this form is divisible by (a) 7 only (b) 11 only (c) 13 only (d) 1001**
10. **If the sum of digits of a number is divisible by three, then the number is always divisible by**
    a. **2 (b) 3 (c) 6 (d)**
11. **3134673 is divisible by 3 and————-**
12. **20 x 3 is a multiple of 3, if the digit x is———or——— or————.**
13. **3 x 5 is divisible by 9, if the digit x is————**
14. **The sum of a two-digit number and the number obtained by reversing the digits is always divisible by————.**
15. **The difference of two-digit number and the number obtained by reversing its digits is always divisible by ———-.**
16. **The difference of three-digit number and the number obtained by putting the digits in reverse order is always divisible by 9 and——-.**
17. $$\begin{array}{r} 2\ B \\ +\ A\ B \\ \hline 8\ A \end{array}$$ If the above addition is correct, then $A =$ _____ and $B =$ _____ .
18. **A four-digit number abed is divisible by 11, if d + b =————or————-.**
19. **19 A number is divisible by 11, if the differences between the sum of digits at its odd places and that of digits at the even places is either 0 or divisible by ————-**
20. **If B x B = AB, then either A = 2, B = 5 or A =———- B =———-.**
21. **If the digit 1 is placed after a two-digit number whose ten's is t and one's digit is u, the new number is————.**
22. **If 5A x A = 399, then the value of A is -------.**

23. **If A3 + 8B = 150, then the value of A + B is -------.**
24. **If 5A + 53 = 65, then the values of A and B is ------ and -------.**
25. **A five-digit number AABAA is divisible by 33. Write all the numbers of this form.**
26. **Find the least value that must be given to number a, so that the number 91876a2 is divisible by 8.**
27. **Find the value of the letters in each of the following questions.**

a.

$$\begin{array}{r} 1\ B\ A \\ +A\ B\ A \\ \hline 8\ B\ 2 \\ \hline \end{array}$$

28.

$$\begin{array}{r} A\ B \\ -B\ 7 \\ \hline 4\ 5 \\ \hline \end{array}$$

29. **If $27 \div A = 33$, then find the value of A**

30. **212 x 5 is a multiple of 3 and 11. Find the value of x.**
31. **Find the value of k, where 31K2 is divisible by 6**
32. **1y3y6is divisible by 11. Find the value of y.**
33. **756x is a multiple of 11, find the value of x**
34. **A three-digits number 203 is added to the number 326 to give a three-digits number 5b9 Which is divisible by 9. Find the value of b – a.**
35. **Let E = 3, B = 7 and A = 4. Find the other digits in the sum**

$$\begin{array}{r} B\ A\ S\ E \\ +\ B\ A\ L\ L \\ \hline G\ A\ M\ E\ S \\ \hline \end{array}$$

36. **If from a two-digit number, we subtract the number formed by reversing its digits then the result so obtained is a perfect cube. How many such numbers are possible? Write all of them.**

Work out the following multiplication.

$$\begin{array}{r} 12345679 \\ \times\ \ \ \ 9 \\ \hline \\ \hline \end{array}$$

Use the result to answer the following questions.

(a) What will be 12345679 x 45?

(b) What will be 12345679 x 63?

(c) By what number should 12345679 be multiplied to get 888888888?

(d) By what number should 12345679 be multiplied to get 999999999?

39. **If 148101B095 is divisible by 33, find the value of B.**