



# **GS FOUNDATION BATCH FOR CSE 2024**

## **Worksheet CSAT - 01** **(Basics of Arithmetic)**

**Worksheet 1: Basics of Arithmetic – 1**

1. Consider the following statements:

- I. If 'n' is an integer then '5n' is always an integer
- II. If '5n' is an integer then 'n' is always an integer

Which of the statements above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

2. Let 'p' be a two-digit number divisible by 5 and q obtained by reversing the digits of p is also a two-digit number and divisible by 7. What is the sum of digits of 'p'?

- A. 7
- B. 9
- C. 11
- D. 12

3. What is the place (location) value of 5 in 3254710?

- A. 10000
- B. 5
- C. 54710
- D. 50000

4. The smallest number that should be subtracted from 2085, so that the new number is completely divisible by 23 is

- A. 9
- B. 15
- C. 20
- D. 19

5. What is the difference between place values of 3 in 123454321

- A. 2999700
- B. 299700
- C. 999900
- D. 99900

6. Consider the following statements:

- I. Smallest natural number is same as smallest positive integer
- II. Subtraction of two natural numbers is always a whole number

Which of the statements above is/are correct?

- A. 1 only

- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

7. Two consecutive even positive integers, sum of the squares of which is 1060 are:

- A. 12, 14
- B. 16, 18
- C. 20, 22
- D. 22, 24

8. What is the value of  $(0.027)^{-\frac{2}{3}}$

- A.  $\frac{100}{9}$
- B.  $-\frac{100}{9}$
- C. 0.3
- D. -0.3

9. What is the unit's digit in  $6374^{193} \times 12345^{127} \times 111^{111}$

- A. 0
- B. 2
- C. 3
- D. 5

10. If  $n = 1 + x$ , where  $x$  is the product of four consecutive positive integers, consider the following statements:

- I.  $n$  is an even number
- II.  $n$  is prime number
- III.  $n$  is a perfect square
- IV.  $n$  is odd number

Which of the statements above are correct?

- A. I, III
- B. I, II
- C. I, IV
- D. III, IV

11. Consider following statements:

- I. Sum of first 4 prime numbers is less than 15
- II. A prime number is never divisible by 2
- III. Prime numbers are evenly distributed from 1 to 100

Which of the statements above are incorrect?

- A. 1 and 2 only
- B. 2 only

- C. 1, 2 and 3
- D. 1 and 3 only

12. Let  $x$  be the greatest 4-digit number, which when divided by 15, 20 and 28 leaves in each case the remainder 2. The sum of digits of  $x$  is

- A. 19
- B. 21
- C. 23
- D. 25

13. Consider  $P = 4^{61} + 4^{62} + 4^{63} + 4^{64}$ . Which of the following is a factor of  $P$ ?

- A. 9
- B. 10
- C. 11
- D. 12

14. How many of the following numbers are divisible by 132?

264, 396, 462, 792, 968, 2178, 5184, 6336

- A. 4
- B. 5
- C. 6
- D. 7

15. Number of students who have opted for the subjects A, B and C are 60, 84 and 108 respectively. The examination is to be conducted for these students such that only the students of the same subject are allowed in one room. Also, the number of students in each room must be same. What is the minimum number of rooms that should be arranged to meet all these conditions?

- A. 28
- B. 60
- C. 12
- D. 21

16. As student was asked to simplify the expression:

$$\left( \frac{0.1216 \times 0.105 \times 0.0002}{0.625 \times 0.08512 \times 0.039 \times 0.16} \right)^0$$

His answer was  $\frac{1}{65}$ . What is the difference between his answer and the correct answer?

- A.  $\frac{1}{65}$
- B.  $\frac{64}{65}$
- C.  $\frac{1}{26}$

D.  $\frac{7}{26}$

17. As student was asked to simplify the expression:

$$\left( \frac{0.1216 \times 0.105 \times 0.0002 \times 0}{0.625 \times 0.08512 \times 0.039 \times 0.16} \right)^1$$

His answer was  $\frac{1}{65}$ . What is the difference between his answer and the correct answer?

- A.  $\frac{1}{65}$
- B.  $\frac{64}{65}$
- C.  $\frac{1}{130}$
- D.  $\frac{3}{130}$

18. What is the value of  $\left(\frac{1331}{729}\right)^{-\frac{1}{3}}$ ?

- A.  $-\frac{11}{9}$
- B. 0.81
- C.  $0.\overline{81}$
- D.  $\frac{11}{9}$

19. If  $\left(\frac{9}{7}\right)^3 \times \left(\frac{49}{81}\right)^{\frac{x}{2}} = \left(\frac{7}{9}\right)^8$ . What is  $x$ ?

- A. 5
- B. 8
- C. 11
- D. 12

20. If  $2^x = \left(\frac{1}{8}\right)^{-3} \times 16^{\frac{3}{4}} \div 4^{-\frac{3}{2}}$ . What is  $x$ ?

- A. -6
- B. 11
- C. -12
- D. 15