Mathematics Test – Class 8

Chapters: 1 (A Square and A Cube) & 2 (Power Play)
Time: 1½ Hours **Marks:** 40

Section A – Very Short Answer Questions (1 mark each)

1. Write the first five perfect squares.
2. Which of the following is not a perfect square: 121, 289, 145, 625?
3. What is the last digit pattern of perfect squares?
4. Write the cube of 7 in exponential form.
5. Express $6 \times 6 \times 6 \times 6$ in exponential notation.

Section B – Short Answer Questions (2 marks each)

6. The area of a square is 441 m^2. Find the length of its side.
7. Find the smallest number by which 9408 must be multiplied so that the product is a perfect square.
8. Write the prime factorisation of 648 in exponential form.
9. If the thickness of a paper is 0.001 cm, express its thickness after 8 folds in exponential form.
10. Which of the following numbers can be expressed as a cube: 64, 125, 96? Justify.

Section C – Application Questions (3 marks each)

11. The difference between two consecutive perfect squares is always an odd number. Verify this statement with an example.
12. If the number of lotuses in a magical pond doubles every day and the pond is full in 30 days, on which day was it half full?
13. Express the number 32,400 as the product of its prime factors in exponential form.
14. Write the following numbers in scientific notation: (i) 59,853 (ii) 70,04,00,00,000

Section D – Long Answer Questions (4 marks each)

15. The smallest square number divisible by 4, 9, and 10 is required. Find the number with proper steps.
16. Using the property of successive odd numbers, show that $25 = 1 + 3 + 5 + 7 + 9$.
17. If Estu has 4 dresses and 3 caps, in how many different ways can he dress? Extend the idea to find the number of outfits Roxie can wear if she has 7 dresses, 2 hats, and 3 pairs of shoes.
18. The Sun is 1.496×10^{11} m away from the Earth. Write this distance in words and explain the role of the power of 10 in simplifying large numbers.

Total Marks: 40