

Chapter – 2 | Power Play

QUIZ-01

1. After every fold of a paper, its thickness:

- A. Increases by 1 cm
- B. Doubles
- C. Triples
- D. Remains the same (B)

Explanation: The thickness becomes 2 times after each fold, showing exponential growth.

2. What is the thickness multiplication factor after 10 folds?

- A. 100
- B. 512
- C. 1024
- D. 2048 (C)

Explanation: Thickness doubles each fold, so after 10 folds it becomes $2^{10}=1024$ times.

3. Which expression represents a number multiplied by itself 7 times?

- A. n^2
- B. n^3
- C. n^6
- D. n^7 (D)

Explanation: $n^7 = n \times n \times n \times n \times n \times n \times n$.

4. What is the value of 2^{10} ?

- A. 512
- B. 1000
- C. 1024
- D. 2048 (C)

Explanation: $2^{10} = 1024$

5. Which rule is correct?

- A. $n^a \times n^b = n^{ab}$
- B. $n^a \times n^b = n^{a+b}$
- C. $n^a + n^b = n^{a+b}$
- D. $n^a \div n^b = n^{a+b}$ (B)

Explanation: When multiplying powers with the same base, add the exponents.

6. A pond becomes completely covered with lotuses on Day 30. On which day was it half covered?

- A. Day 15
- B. Day 28
- C. Day 29
- D. Day 30 (C)

Explanation: Since the lotuses double every day, one day earlier it was half full.

7. How many passwords are possible in a 5-digit lock?

- A. 10,000
- B. 50,000
- C. 90,000
- D. 100,000 (D)

Explanation: Each digit has 10 choices, so total passwords $10^5 = 100000$.

8. What is the value of 10^0 ?

- A. 0
- B. 1
- C. 10
- D. Undefined (B)

Explanation: Any non-zero number raised to the power 0 equals 1.

9. Which is equivalent to 10^{-3} ?

- A. 1000
- B. 100
- C. $1/1000$
- D. $1/100$ (C)

Explanation: $10^{-3} = \frac{1}{10^3} = \frac{1}{1000}$

10. Which of the following is written in correct scientific notation?

- A. 59×10^2
- B. 0.59×10^4
- C. 5.9×10^3
- D. 59.0×10^2 (C)

Explanation: In scientific notation, the coefficient must be at least 1 and less than 10.