



# ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



**Sub: Arithmetic**  
**Duration: 40 Min**

**Class: 7**  
**Worksheet 57**  
**EXPONENTS**

**Date: 18.07.20**  
**Full Marks: 15**

**Choose the correct options:**

- At the first stage of a nuclear fission reaction 3 neutrons are produced. How many neutrons are produced at the 12<sup>th</sup> stage? Assume the reaction is an uncontrolled chain reaction.
  - 3
  - $3 \times 12$
  - $12^3$
  - $3^{12}$
- Bacteria divide every 20 minutes to give 2 in 20 min, 4 in 40 min and so on. How many bacteria will be present in a 6 hour old bacterial culture?
  - $2^5$
  - $2^6$
  - $2^{12}$
  - $2^{18}$
- How many angstrom ( $10^{-10}$  m) are there in 1 km?
  - $10^{13}$
  - $10^7$
  - $10^{-13}$
  - $10^{-7}$
- There are 40 students in Ritaja's class who are each asked to distribute invites to 4 people to the school concert. Each invite admits 4 people. How many are invited to the event?
  - 32
  - 64
  - 160
  - 640
- Rishav collects pebbles. Each day he collects twice as many pebbles as the day before. How many pebbles does he have after a week?
  - $2^8$
  - $2^6$
  - $2^9$
  - $2^7$
- Light from the sun reaches the earth in 8 min. If the speed of light is  $3 \times 10^8$  ms<sup>-1</sup>, find the distance of the earth and the sun in kilometres.
  - $1.44 \times 10^8$
  - $2.88 \times 10^5$
  - $1.44 \times 10^8$
  - $2.88 \times 10^5$
- Every hour a cell divides into two. How many daughter cells can be formed from a single parent cell at the end of a day?
  - $2^{12}$
  - $2^{24}$
  - $2^8$
  - $2^{60}$

8. Express  $1 \text{ m}^3$  in millilitre.
- $10^3$
  - $10^{-3}$
  - $10^6$
  - $10^{-6}$
9. A single electron has a charge of magnitude  $1.6 \times 10^{-19}$  coulomb, where coulomb is the unit of charge. How many electrons constitute a charge of one coulomb?
- $6.25 \times 10^{18}$
  - $1.6 \times 10^{18}$
  - $1.6 \times 10^{-19}$
  - $6.25 \times 10^{19}$
10. A cubical graphene cell has sides  $2 \times 10^{-10}$  m each. Find the volume of such a graphene cell in cubic metre.
- $6 \times 10^{-10}$
  - $8 \times 10^{-30}$
  - $6 \times 10^{-30}$
  - $8 \times 10^{-10}$
11. The population of a certain town triples every decade. By how much will the population increase in 50 years?
- $3^5$  times
  - $3^6$  times
  - $3^4$  times
  - $3^7$  times
12. If instagram followers double every week, how much time will it take for a new profile to gain 1000 likes?
- 10
  - 9
  - 7
  - 5
13. On Monday Renu tells a secret to 3 people. The next day each of them tell 3 people more. If this pattern continues how many people other than Renu knows the secret by next Monday?
- $3^6$
  - $3^8$
  - $3^5$
  - $3^7$
14. How many square metres are there in a hectare?
- $10^4$
  - $10^5$
  - $10^6$
  - $10^8$
15. The earth has  $1.4 \times 10^9$  cubic kilometre of sea water. If average salt concentration is 3.5%, find the volume of salt dissolved in it.
- $4.9 \times 10^9$
  - $4.9 \times 10^7$
  - $9.8 \times 10^9$
  - $9.8 \times 10^7$