Measurement of length and length of curved line

A. Choose the correct answer:

- 1. What is the standard unit of length in the International System of Units (SI)?
 - a) Meter
 - b) Kilometer
 - c) Centimeter
 - d) Millimeter

2. Which of the following instruments is used to measure very small lengths accurately?

- a) Measuring tape
- b) Vernier caliper
- c) Ruler
- d) Protractor

3. One kilometer is equal to how many meters?

- a) 10
- b) 100
- c) 1,000
- d) 10,000

B. Fill in the Blanks:

- 1. The SI unit of length is the _____.
- The device used to measure the thickness of a small object, like a wire, is called a _______.

3. A standard ruler can measure length up to ______ centimeters accurately.

C. Case Study:

A scientist, Dr. Sharma, conducted an experiment to measure the length of various objects using different instruments. He measured the length of a table using a meter scale, the thickness of a wire using a screw gauge, and the diameter of a coin using a vernier caliper.

After completing the measurements, he recorded the following observations:

- The meter scale provided measurements up to millimeters.
- The vernier caliper was able to measure more precisely than the meter scale.
- The screw gauge provided the most precise measurement, even detecting slight variations in thickness.

Questions & Answers:

- 1. Why did Dr. Sharma use different instruments for measuring different objects?
- 2. Which instrument provided the most precise measurement and why?
- 3. What is the smallest unit of length that can be measured using a screw gauge?
- 4. How does a vernier caliper differ from a meter scale in terms of accuracy?

D. Short Answer Questions:

- 1. Why is the SI system used for measuring length?
- 2. What are some common instruments used to measure length?
- 3. How does a vernier caliper improve the accuracy of measurements compared to a normal ruler?

E. Long Answer Questions:

- 1. Explain the different units of length measurement and how they are converted into each other.
- 2. Describe the working principles of a vernier caliper and a screw gauge.
- 3. Discuss the importance of precise length measurement in scientific experiments and engineering applications.