Introduction to Nanotechnology

Nanotechnology · Answer Key · 12 Questions

1. What is the prefix 'nano-' derived from in the context of measurement?

A) A billionth
B) A millionth
C) A thousandth
D) A trillionth

2. At what size range do materials typically start to exhibit properties associated with nanotechnology?

A) 1 to 100 micrometers
B) 1 to 100 nanometers
C) 100 to 1000 nanometers
D) 1 to 100 millimeters

3. Which instrument is commonly used by scientists to see and manipulate objects at the nanoscale?

A) Standard magnifying glass
B) Compound light microscope
C) Scanning tunneling microscope
D) Telescope

4. How many nanometers are in one meter?

A) 1,000
B) 100,000
C) 1,000,000
D) 1,000,000,000

5. Which carbon structure, discovered by researchers, is a hollow tube with a diameter of only a few nanometers?

A) Carbon nanotube
B) Diamond crystal
C) Graphite sheet
D) Fullerene sphere

6. Nanotechnology is an interdisciplinary field, meaning it combines elements of which subjects?

A) History and Geography
B) Biology, Chemistry, and Physics
C) Arts and Physical Education
D) Language and Mathematics

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7. What happens to the surface area of a material when it is broken down into nanoparticles?

A) It decreases
B) It stays the same
C) It increases significantly
D) It disappears

8. Which field of medicine uses nanotechnology to deliver drugs directly to specific diseased cells?

A) Targeted drug delivery
B) General surgery
C) Radiology
D) Physical therapy

9. What is the approximate width of a human DNA strand in nanometers?

A) 2.5 nanometers
B) 250 nanometers
C) 2,500 nanometers
D) 25,000 nanometers

10. Why can materials at the nanoscale display different colors than the same material at a larger scale?

A) Because they are radioactive
B) Because they interact with light differently
C) Because they are colder
D) Because they are invisible

11. Which common consumer product often uses nanotechnology to block UV rays?

A) Sunscreen
B) Paper
C) Cardboard
D) Cotton thread

12. Who is often credited with first introducing the concept of nanotechnology in a 1959 speech titled 'There's Plenty of Room at the Bottom'?

A) Albert Einstein
B) Isaac Newton
C) Richard Feynman
D) Marie Curie

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