

# Fundamentals of Nanotechnology

Nanotechnology · Practice Test · 10 Questions

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**1. What is the approximate range of the nanoscale in nanometers (nm)?**

- A) 1 to 100 nm
- B) 100 to 1000 nm
- C) 1 to 10 micrometers
- D) 0.1 to 1 nm

**2. Which scientist is widely credited with inspiring the field of nanotechnology with his 1959 lecture 'There's Plenty of Room at the Bottom'?**

- A) Albert Einstein
- B) Richard Feynman
- C) Marie Curie
- D) Nikola Tesla

**3. Nanotechnology involves the manipulation of matter at which of the following levels?**

- A) Macroscopic level
- B) Molecular and atomic level
- C) Planetary level
- D) Subatomic particle level

**4. Which naturally occurring carbon allotrope is a key building block in many nanotechnology applications due to its strength and electrical conductivity?**

- A) Diamond
- B) Coal
- C) Graphene
- D) Graphite

**5. What is the 'Lotus Effect' in the context of nanotechnology?**

- A) The ability of a surface to change color
- B) The self-cleaning, superhydrophobic properties of a surface
- C) The process of magnetic data storage
- D) The method of light amplification in lasers

**6. Which of the following is a common application of nanotechnology in consumer products?**

- A) Increasing the weight of structural steel
- B) Improving the UV-blocking properties of sunscreens
- C) Creating artificial gravity
- D) Developing large-scale nuclear reactors

**7. What defines a 'nanomaterial'?**

- A) Any material that weighs less than one gram
- B) Any material with at least one dimension in the range of 1 to 100 nanometers
- C) Any material that is invisible to the human eye
- D) Any material made of plastic

**8. In medicine, what is the primary goal of using nanoparticles for 'targeted drug delivery'?**

- A) To make drugs taste better
- B) To increase the size of the medication
- C) To deliver medication directly to diseased cells, reducing side effects
- D) To allow medication to be absorbed through the skin only

**9. What is a 'buckminsterfullerene' or 'buckyball'?**

- A) A type of nanobot
- B) A spherical molecule composed of 60 carbon atoms
- C) A microscopic laser sensor
- D) A method of DNA sequencing

**10. Which instrument is essential for 'seeing' or imaging structures at the nanoscale?**

- A) Standard optical microscope
- B) Scanning Tunneling Microscope (STM)
- C) Telescope
- D) Thermometer