1. Which technology is primarily used for micro fabrication processes?
a) Lithography
b) Casting
c) Welding
d) Forging

Answer: a) Lithography
Explanation: Lithography is a key micro fabrication process involving the transfer of patterns onto a substrate using light or radiation.

2. What is the primary importance of size in nano fabrication?
a) Aesthetics
b) Mechanical strength
c) Electrical conductivity
d) Quantum effects

Answer: d) Quantum effects
Explanation: Nano fabrication operates at the nanoscale where quantum effects dominate, leading to unique properties and behaviors in materials.

3. Which microscope is commonly used for imaging and manipulating nanostructures?
a) Optical microscope
b) Electron microscope
c) Scanning probe microscope
d) X-ray microscope

Answer: c) Scanning probe microscope

Explanation: Scanning probe microscopes are essential tools for nano fabrication as they can image and manipulate surfaces at the atomic level.

4. What are carbon Buckyballs and nano tubes primarily composed of?
a) Silicon
b) Carbon
c) Gold
d) Platinum

Answer: b) Carbon
Explanation: Carbon Buckyballs and nano tubes are allotropes of carbon, composed of carbon atoms arranged in specific configurations.

5. Which nano fabrication process involves the controlled deposition of atoms or molecules onto a surface?
a) Etching
b) Nanoimprint lithography
c) Chemical vapor deposition
d) Photolithography

Answer: c) Chemical vapor deposition
Explanation: Chemical vapor deposition is a nano fabrication process where atoms or molecules are deposited onto a substrate surface to form a thin film.

6. What does the LIGA process stand for in micro fabrication?
a) Laser-induced growth and assembly
b) Lithography, electroforming, and molding

c) Light-interference guided assembly
d) Layered integrated growth algorithm

Answer: b) Lithography, electroforming, and molding
Explanation: The LIGA process involves lithography, electroforming, and molding, and it's a technique for fabricating microstructures with high aspect ratios.

7. Which type of micro system device converts physical quantities into electrical signals?
a) Actuators
b) Sensors
c) Transducers
d) Microprocessors

Answer: b) Sensors
Explanation: Sensors are micro system devices that detect and respond to physical stimuli by converting them into electrical signals.

8. In which industrial application are micro system devices commonly used?
a) Agriculture
b) Construction
c) Automotive
d) Textiles

Answer: c) Automotive
Explanation: Micro system devices find extensive use in automotive applications, such as airbag deployment systems and tire pressure monitoring.

9. What is the primary role of lithography in micro fabrication?

a) Material deposition
b) Pattern transfer
c) Surface etching
d) Heat treatment

Answer: b) Pattern transfer
Explanation: Lithography in micro fabrication involves transferring predefined patterns onto a substrate, crucial for defining the structure of micro devices.

10. Which nano fabrication process uses a mold to replicate nano-scale patterns onto a substrate?
a) Atomic layer deposition
b) Nanoimprint lithography
c) Chemical vapor deposition
d) Electron-beam lithography

Answer: b) Nanoimprint lithography
Explanation: Nanoimprint lithography involves pressing a mold with nano-scale features onto a substrate to replicate the patterns, enabling high-resolution nano fabrication.

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