1. What is maintenance?
a) A process of building new structures
b) A routine activity to keep structures in good condition
c) A technique for demolishing old buildings
d) An architectural style popular in ancient civilizations

Answer: b) A routine activity to keep structures in good condition
Explanation: Maintenance refers to the regular process of inspecting, repairing, and preserving structures to ensure they remain functional and safe over time.

2. Which of the following is not a fact of maintenance?
a) It extends the lifespan of structures
b) It prevents deterioration
c) It involves only cosmetic repairs
d) It ensures safety and functionality

Answer: c) It involves only cosmetic repairs
Explanation: Maintenance encompasses more than just cosmetic repairs; it includes structural, mechanical, and electrical upkeep to ensure safety and functionality.

3. Why is maintenance important?
a) To increase property value
b) To ensure safety and functionality
c) To attract more tenants
d) All of the above

Answer: b) To ensure safety and functionality

Explanation: Maintenance is crucial to ensure structures remain safe and functional for their intended use, regardless of other benefits it may bring, such as increasing property value or attracting tenants.

4. What is the need for retrofitting?
a) To enhance aesthetic appeal
b) To comply with building codes
c) To reduce energy consumption
d) To strengthen existing structures against seismic activity

Answer: d) To strengthen existing structures against seismic activity
Explanation: Retrofitting is typically done to strengthen existing structures, especially in areas prone to seismic activity, to improve their resistance to earthquakes and ensure safety.

5. Which technique involves wrapping structural members with additional material to enhance strength?
a) Jacketing technique
b) External post-tensioning
c) Near surface mounted (NSM) technique
d) Section enlargement

Answer: a) Jacketing technique
Explanation: Jacketing involves wrapping structural members, such as columns and beams, with additional material like steel or reinforced concrete to enhance their strength and load-bearing capacity.

6. Which technique involves bonding reinforcement material to the external surface of

structural members?
a) Jacketing technique
b) External post-tensioning
c) Near surface mounted (NSM) technique
d) Section enlargement

Answer: c) Near surface mounted (NSM) technique
Explanation: NSM involves bonding reinforcement material, such as carbon fiber or steel bars, to the external surface of structural members to improve their strength and performance.

7. Which technique involves applying external cables to compress and strengthen structural members?
a) Jacketing technique
b) External post-tensioning
c) Near surface mounted (NSM) technique
d) Section enlargement

Answer: b) External post-tensioning
Explanation: External post-tensioning involves applying external cables to compress and strengthen structural members, typically used to increase the load-bearing capacity of concrete elements like beams and slabs.

8. What is the purpose of section enlargement in retrofitting?
a) To reduce the size of structural members
b) To increase the aesthetic appeal of structures
c) To enhance the load-bearing capacity of members
d) To decrease the overall weight of structures

Answer: c) To enhance the load-bearing capacity of members
Explanation: Section enlargement involves increasing the cross-sectional dimensions of structural members to enhance their load-bearing capacity and improve overall structural performance.

9. Which of the following is a guideline for seismic rehabilitation of existing buildings?
a) Decreasing structural strength
b) Increasing flexibility
c) Reducing foundation stability
d) Removing non-structural elements

Answer: d) Removing non-structural elements
Explanation: Removing non-structural elements is a guideline for seismic rehabilitation, as it reduces potential hazards and prevents them from becoming projectiles during earthquakes, enhancing overall safety.

10. What is the main focus of maintenance?
a) Enhancing architectural design
b) Increasing property value
c) Ensuring safety and functionality
d) Expanding building footprint

Answer: c) Ensuring safety and functionality
Explanation: The primary focus of maintenance is to ensure structures remain safe and functional for their intended use, prioritizing safety and functionality over other considerations.

11. Which technique involves strengthening structural members from the exterior?
a) Jacketing technique
b) Near surface mounted (NSM) technique
c) External post-tensioning
d) Section enlargement

Answer: a) Jacketing technique
Explanation: The jacketing technique involves strengthening structural members from the exterior by wrapping them with additional materials like steel or reinforced concrete.

12. What is the primary purpose of retrofitting?
a) To decrease structural stability
b) To comply with building aesthetics
c) To strengthen existing structures
d) To reduce energy efficiency

Answer: c) To strengthen existing structures
Explanation: Retrofitting is primarily done to strengthen existing structures, improving their resilience and durability against various forces, such as seismic activity or environmental factors.

13. Which technique involves embedding reinforcement material within the structural member?
a) Jacketing technique
b) External post-tensioning
c) Near surface mounted (NSM) technique
d) Section enlargement

Answer: c) Near surface mounted (NSM) technique
Explanation: The NSM technique involves embedding reinforcement material, such as carbon fiber or steel bars, within the structural member to enhance its strength and performance.

14. What is the primary reason for needing retrofitting?
a) To decrease property value
b) To comply with architectural trends
c) To strengthen against seismic activity
d) To reduce structural load

Answer: c) To strengthen against seismic activity
Explanation: The primary reason for needing retrofitting is to strengthen existing structures against seismic activity, ensuring their stability and safety during earthquakes.

15. Which of the following is not a fact about maintenance?
a) It involves regular inspections
b) It focuses solely on cosmetic repairs
c) It prevents structural deterioration
d) It ensures safety and functionality

Answer: b) It focuses solely on cosmetic repairs
Explanation: Maintenance involves more than just cosmetic repairs; it encompasses various activities, including structural inspections, repairs, and upkeep, to ensure safety and functionality.