1. Question: What is the fundamental principle of the stack data structure?

Options:

a) FIFO (First In First Out)

b) LIFO (Last In First Out)

c) FILO (First In Last Out)

d) LILO (Last In Last Out)

Answer: b) LIFO (Last In First Out)

2. Question: Which operation adds an element to the top of the stack?

Options:

a) push

b) pop

c) insert

d) remove

Answer: a) push

3. Question: What happens when a pop operation is performed on an empty stack?

Options:

a) An error is generated

b) The stack remains unchanged

c) The top element is returned

d) The bottom element is removed

Answer: a) An error is generated

4. Question: Which operation retrieves the top element of the stack without removing it?

Options:

a) peek

b) push

c) pop

d) access

Answer: a) peek

5. Question: What is the time complexity of the push operation in a stack?

Options:

a) O(1)

b) O(log n)

c) O(n)

d) O(n^2)

Answer: a) O(1)

6. Question: Which data structure can be easily implemented using a stack?

Options:

a) Queue

b) List

c) Tree

d) Parentheses matching

Answer: d) Parentheses matching

7. Question: In a stack, which element is at the bottom of the stack?

Options:

a) Top element

b) First element

c) Last element

d) Base element

Answer: d) Base element

8. Question: Which of the following is the stack's main disadvantage?

Options:

a) Limited storage capacity

b) Slow retrieval of elements

c) Complex implementation

d) Limited functionality

Answer: a) Limited storage capacity

9. Question: Which operation checks if the stack is empty or not?

Options:

a) isFull

b) isEmpty

c) isStackEmpty

d) checkStack

Answer: b) isEmpty

10. Question: What data structure can be used to implement a stack efficiently?

Options:

a) Array

b) Linked List

c) Heap

d) Graph

Answer: b) Linked List