

Topic: Asynchronous Programming

1. What is callback hell in JavaScript/TypeScript?

- A. A condition where too many asynchronous operations are nested, making the code difficult to read and maintain
- B. A situation where synchronous functions are used excessively
- C. A state where callbacks are used for synchronous operations
- D. A scenario where try-catch blocks are not used properly

2. Which of the following is a disadvantage of callback hells in TypeScript?

- A. It leads to cleaner and more readable code
- B. It increases the risk of memory leaks
- C. It simplifies debugging
- D. It speeds up the execution of asynchronous operations

3. How do Promises help alleviate callback hell in TypeScript?

- A. By allowing synchronous execution of functions
- B. By automatically handling errors without try-catch blocks
- C. By providing a cleaner way to chain asynchronous operations
- D. By replacing the need for callbacks with loop constructs

4. Which statement best describes a Promise in TypeScript?

- A. A synchronous function that always returns a value
- B. An object representing the eventual completion or failure of an asynchronous operation

- C. A function that executes without waiting for asynchronous tasks to complete
- D. A keyword used to declare a variable that cannot be reassigned

5. What is Promise chaining used for in TypeScript?

- A. To execute multiple promises in parallel
- B. To handle errors in asynchronous code
- C. To perform multiple asynchronous operations sequentially
- D. To cancel promises before they complete

6. Which keyword is used to define an asynchronous function in TypeScript?

- A. `await`
- B. `async`
- C. `then`
- D. `promise`

7. What does the `await` keyword do in TypeScript?

- A. It executes a function asynchronously
- B. It defines a new Promise
- C. It waits for a Promise to settle and returns its result
- D. It throws an error if the Promise is rejected

8. In TypeScript, what happens if a Promise is rejected inside an `async` function without error handling?

- A. The program crashes immediately
- B. The rejection is ignored
- C. An unhandled promise rejection warning is shown in the console
- D. The function waits indefinitely

9. Which TypeScript construct is used to handle cleanup tasks after asynchronous operations complete, regardless of success or failure?

- A. `finally`
- B. `cleanup`
- C. `end`
- D. `complete`

10. What is the main advantage of using `async/await` over Promise chaining in TypeScript?

- A. `async/await` automatically handles errors without try-catch blocks
- B. `async/await` allows for more readable and synchronous-looking code
- C. `async/await` executes functions asynchronously by default
- D. `async/await` prevents memory leaks caused by callback hells

11. Which TypeScript feature is useful for avoiding callback hell?

- A. Promises
- B. Callbacks
- C. Generics
- D. Interfaces

Answer keys

1.A	2.B	3.C	4.B	5.C	6.B
7.C	8.C	9.A	10.B	11.A	