Multithreading in C: Understanding and Managing Threads Quiz

1. What is the main benefit of using threads over processes?
 □ A) Threads provide more isolation between tasks □ B) Threads share memory space, making them more efficient □ C) Threads are easier to debug than processes □ D) Threads do not require synchronization mechanisms
2. Which library must be included to use POSIX threads in C?
 □ A) stdio.h ⋈ B) pthread.h □ C) stdlib.h □ D) unistd.h
3. What is the correct syntax to create a thread in C using pthreads
 □ A) pthread_create(&tid, thread_function, NULL); □ B) pthread_create(&tid, NULL, thread_function, argument); □ C) pthread_create(tid, NULL, argument, thread_function); □ D) pthread_create(tid, thread_function, &argument);
4. Which function returns the thread ID of the calling thread?
 □ A) pthread_id() □ B) pthread_join() ⋈ C) pthread_self() □ D) pthread_get_id()
5. What happens when a thread calls pthread_exit()?
 □ A) The thread continues execution □ B) The thread is terminated □ C) The thread is suspended until resumed □ D) The thread ID is returned to the main thread
6. Which function makes the calling thread wait for another threa to terminate?
 □ A) pthread_wait() □ B) pthread_cancel() □ C) pthread_exit() ⋈ D) pthread_join()

 □ B) To mark a thread as detached, releasing resources upon termination □ C) To cancel the execution of a thread □ D) To wait for a thread to complete 3. In a multithreading context, what is a race condition? □ A) Two threads executing the same code block at the same time □ B) A thread terminating before its task completes □ C) Multiple threads accessing shared data without proper synchronization □ D) A thread that outperforms another thread in execution time 2. What does pthread_cancel() do? □ A) It waits for a thread to terminate □ B) It sends a cancellation request to a thread □ C) It terminates a thread immediately □ D) It returns the result of a thread's execution 10. Which of the following correctly describes a thread? □ A) An independent process with its own memory space □ B) A lightweight process sharing memory space with other threads □ C) A static task that runs sequentially □ D) A dynamically allocated data structure 11. What mechanism ensures that shared resources are accessed safely by multiple threads? □ A) Thread creation □ B) Synchronization □ C) Memory allocation □ D) Thread detachment 12. What does the pthread_join() function return when a thread inishes normally? □ A) NULL □ B) The thread's status □ D) The thread's memory address 13. What is the main reason for using threads in C? 		inate a thread immediately
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14. Which function allows threads to execute concurrently in a C program?
$oximes A)$ pthread_create()
B) pthread_run()
C) pthread_execute()
□ D) pthread_compete()
15. What is thread safety?
 □ A) Ensuring that threads do not terminate unexpectedly □ B) Allowing threads to run independently without synchronization ⋈ C) Protecting shared resources from being accessed concurrently in ar unsafe manner □ D) Guaranteeing that all threads run in the correct order
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Answers:
1. B
2. B
3. B
4. C
5. B
6. D 7. B
8. C
9. B
10. B
11. B
12. C
13. C
14. A
15. C