Quiz#4
AI-5A

Time: <u>8 mins</u>

Q1# What happens if ***sem_post*** is called more times than ***sem_wait*** on a semaphore? Explain with an example.

- **Effect:** The semaphore count will exceed its initial value. If the count represents resource availability, this may falsely indicate resources are available when they are not.
- **Example:**
  ```
  sem_init(&semaphore, 0, 1);
  sem_post(&semaphore); // Count: 2
  sem_post(&semaphore); // Count: 3
  sem_wait(&semaphore); // Count: 2
  ```
- **Result:** The semaphore count is higher than the actual resources, which could lead to re-source overuse.

Q2# Write a program where:
- Thread A waits for a signal from Thread B.
- Thread B waits for a signal from Thread C.
- Use binary semaphores to ensure the correct sequence of execution:
  Thread C → Thread B → Thread A.