



NATIONAL UNIVERSITY
OF COMPUTER & EMERGING SCIENCES

CS2006 – Operating System

Fall 2023

ID: _____

Name: _____

Quiz # 2

Marks: 10

Date: _____

1. The code of a process contains critical section. Can we avoid Race condition if we stop Preemption? Why or why not?

No, we cannot avoid the race condition even with that. The reason for this is that the code section which can lead to Race condition can be accessed by another processor too, so even if preemption is stopped on one processor, the other processor can still access the code and hence lead to discrepancy in the data.

2. What is an Atomic Instruction. Name any two.

An Atomic instruction is a set of instructions whose execution is guaranteed to be done together by the hardware. The atomic execution makes sure that Race conditions are avoided. We have the following three atomic instructions available on hardware level:

- Test-and-set
- Compare-and-swap
- Fetch-and-Increment