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Course: Operating Systems
Program: BS(Computer Science)
Duration: 20 Minutes
Paper Date: 27-March-2025
Section: 6A
Exam: Quiz 3

Course Code: CS 2006
Semester: Spring 2025
Total Marks: 10
Weight: 2
Page(s): 3
CLO: 3

Answer the questions in the given available space.

10

[2 + 2 + 2 + 4 = 10 Marks]

Q:1 Suppose three processes P1, P2, and P3 are competing for a critical section using the Bakery Algorithm. They pick the following ticket numbers:

P1 picks ticket 7

P2 picks ticket 5

P3 picks ticket 5

How does bakery algorithm resolve the conflict when two processes receive the same ticket no?

If 2 process get same token no., then we will choose the processes by their PIDs.

2 ✓

Q:2 Explain the role of wakeup() operation in process synchronization?

The wakeup() operation is used in signal() to make ~~the~~ the process _{ready} to enter the critical section.

2 ✓

Q:3 what is the main limitation of Peterson Solution?

The peterson's solution cannot work properly when there are more ~~than~~ 2 processes.

2

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Q:4 A shared buffer of size 5 is used by a producer and a consumer. The producer adds items to the buffer, and the consumer removes items. The system uses three semaphores:

mutex (initially 1), empty (initially 5), full (initially 0)

Scenario:

1. The buffer is initially empty.
2. The producer P1 produces an item.
3. The producer P2 also produces an item.
4. The consumer C1 consumes an item.

Give the updated values of semaphore.

mutex = 1 , Empty = 4 , full = 1.

✓ (4)