

Q1

181c 0205

a) deadlock is occurring since both process have acquired each other required lock and they won't release until critical section is executed.

Qb) In order to solve this problem, we may preempt the process and acquire lock with priority based. The process with high priority will acquire lock first. ~~Or we may not release the lock to the process and then after executing the critical section the lock can be released.~~ Or else we can release lock before executing critical section to avoid deadlock.

Thread A

acquire lock A

release " "

acquire lock B

day / date:
Thread B

acquire lock B

release lock B

acquire lock A

Q2

OS

day / date:

while (True)

{
if chopstick[i] == hungry &&
chopstick → left != ~~hungry~~ eating
&& chopstick → right != eating
}

{ " eat

(signal) }

else
wait ()

day / date:

Q. a) Internal fragmentation
can be avoided by providing
process smallest possible
memory unit available but
large enough to fit
the process.
For example best fit algorithm
provides efficient memory
allocation.

for example following process
are available
258 kB, 120 kB

and following memory
unit are available
130, 260, 500

the process having 258 kB
will be allocated 260 kB
and the process with 120 kB
will be allocated 130
space memory.

day / date:

2) multithreaded processes provides more speed to process because different operation or data are divided into threads. for example calculation of 100 data's will be divided into 10 threads, each doing addition to the given data set, rather than then computing their answers together. They were synchronously.

OS Assessment.

day / date:

Q3/ a) $256 \text{ pages} = 2^8 \times 2^{10}$
 $205 \approx 256 = 2^8 \times 2^{10}$

bits in logical address: $18 + 8$

~~16 bits~~
26 bits

b) frames: 2^{17}

$205 \text{ KB} = 2^8 \times 2^{10}$ $18 + 7 = 25 \text{ bits}$