

练习4(第6章)

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#1 Points possible: 3

In the producer-consumer problem, the order of wait operations cannot be reversed, while the order of signal operations can be reversed.

- ☒ TURE
- ☐ FALSE

#2 Points possible: 3

As to semaphores, we can think an execution of signal operation as applying for a resource.

- ☐ TURE
- ☒ FALSE

#3 Points possible: 3

Binary semaphores are those that are used by no more than two threads.

- ☐ TURE
- ☒ FALSE

#4 Points possible: 3

An atomic operation is a machine instruction or a sequence of instructions that must be executed to completion without interruption

- ☒ TURE
 - ☐ FALSE
-

#5 Points possible: 3

While a process is blocked on a semaphore's queue, it is engaged in busy waiting.

- ☐ TRUE
- ☒ FALSE

#6 Points possible: 3

Critical section can be enforced with a general semaphore whose initial value is greater than 1.

- ☐ TRUE
- ☒ FALSE

#7 Points possible: 3

Suppose 9 producers and 6 consumers share a buffer with size of 8. In order to use the buffer properly, the semaphore mutex of critical section of the buffer is initialized to ____.

- ☒ 1
- ☐ 6
- ☐ 8
- ☐ 9

#8 Points possible: 3

Suppose 5 processes share mutual exclusive sections. If 3 processes are permitted to enter the mutual exclusive sections at the same time, then the semaphore of mutual exclusion sections should be initialized to ____.

- ☐ 0
- ☐ 1
- ☒ 3
- ☐ 5

#9 Points possible: 3

Which of the following Critical Section problem solutions results in busy-waiting?

- ☐ Monitor
- ☒ Special machine instruction
- ☐ Semaphore
- ☐ critical region

#10 Points possible: 3

Suppose that a process is executing “counter=counter+1” while another process is executing concurrently and independently “counter=counter-1”, where the counter is a variable shared between the two processes. Given that the value of counter is five before execution, the possible value(s) after both processes finish their statement are .

- ☐ Four
- ☐ Five
- ☐ Six
- ☒ All of above

#11 Points possible: 3

The mutual exclusion semaphore of two concurrent processes has the value 0 (zero) at this moment. It indicates that_____.

- ☐ no process has entered the critical-section
 - ☒ a process has entered the critical-section, and no process is being blocked
 - ☐ a process has entered the critical-section, another process is waiting to enter the critical-section
 - ☐ two processes have entered the critical-section
-

#12 Points possible: 3

The initial value of semaphore S is 2. if the value is -3 at present, how many processes are blocked on this semaphore .

- ☐ 1
- ☐ 2
- ☒ 3
- ☐ 4

#13 Points possible: 3

Three processes are synchronizing on a shared code segment which is protected by a semaphore. If at most two processes are allowed to enter the code segment simultaneously, which of the following results shows the possible values that the semaphore may have?

- ☒ 2, 1, 0, -1
- ☐ 3, 2, 1, 0
- ☐ 2, 1, 0, -1, -2
- ☐ 1, 0, -1, -2

#14 Points possible: 3

有两个进程P1和P2描述如下:

shared data:

```
int counter = 6;
```

P1 :

Computing;

```
counter=counter+1;
```

P2:

Printing;

```
counter=counter-2;
```

两个进程并发执行，运行完成后，counter的值不可能为_____。

- ☐ 4
- ☐ 5
- ☒ 6
- ☐ 7

#15 Points possible: 3

_____是可以用来解决临界区（Critical Section）问题

- ☐ 银行家算法
- ☒ 测试与设置（Test-and-Set）指令
- ☐ 时间片轮转算法
- ☐ LRU算法

#16 Points possible: 3

设有4个进程共享一程序段，而每次最多允许2个进程进入该程序段，则信号量的初值是_____

- ☐ 4
- ☒ 2
- ☐ 1
- ☐ 0

#17 Points possible: 3

下列哪一个问题只包含进程互斥问题？

- ☐ 田径场上的接力比赛
- ☒ 两个进程都要使用打印机
- ☐ 一个生产者和一个消费者通过一个缓冲区传递产品
- ☐ 公共汽车上司机和售票员的协作

#18 Points possible: 3

有一个计数信号量S，若干个进程对S进行了28次P操作和18次V操作后，信号量S的值为0，然后又对信号量S进行了3次V操作。请问此时有多少个进程等待在信号量S的队列中？

- ☒ 0
- ☐ 2
- ☐ 3
- ☐ 7

#19 Points possible: 3

假设一个正在运行的进程对信号量S进行了P（WAIT）操作后，信号量S的值变为-1，此时该进程将_____。

- ☒ 转为等待状态
 - ☐ 转为就绪状态
 - ☐ 继续运行
 - ☐ 终止
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