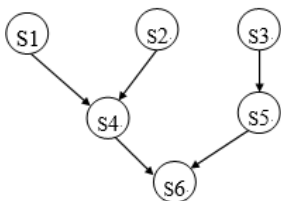1.　In order to implementmutual exclusion on a critical resource for competing processes, only oneprogram at a time should be allowed_____ .

单选题 (6 分)　　6分

　A. To perform message passing

　B. None of the above

　C. To Exhibit cooperation

　D. In the critical section of the program

　　正确答案: D

2.　Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { …;　　*(3);*　　}
Section S2: { …;　　*(4);*　　　　}
Section S3: { …;　　*(5);*　　　　　　　　　　　}
Section S4: { wait(a); (6); …;　　*(7);*　　}
Section S5: { wait(c); …;　　*(8);*　　　}
Section S6: { *wait(d);*　　*wait(e)*; …;　　}

Which is suitable for blank (6)?

单选题 (6 分)　　6分

　A. signal(b)

　B. signal(e)

　C. wait(b)

　D. wait(e)

　　正确答案: C

3.　An atomic operation is a machine instruction or a sequence of instructions that must be executed to completionwithout interruption

判断题 (4 分)　　4分

　A. TURE

　B. FALSE

　　正确答案: A

4. 有两个并发执行的进程P1和P2，共享初值为1的变量x。P1对x加1，P2对x减1。加1和减1操作的指令序列分别如下所示。

```
//加1操作                              // 减1操作
load R1，x // 取x到寄存器R1中          load R2，x
inc R1                                decR2
store x，R1 // 将R1的内容存入x         store x，R2
```

两个操作完成后，x的值

单选题 (4 分)　　4分

 A. 可能为-1、0、1或2
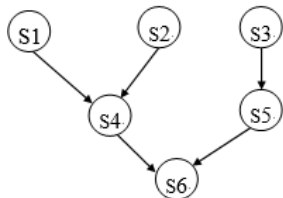
 B. 可能为-1或3

 C. 只能为1

 D. 可能为0、1或2

　正确答案: D

5. While a process is blocked on a semaphore'squeue, it is engaged in busy waiting.

判断题 (4 分)　　4分

 A. FALSE

 B. TURE

　正确答案: A

6. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:
Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;
Section S1: { …;　　*(3);*　　}
Section S2: { …;　*(4);*　　　}
Section S3: { …;　*(5);*　　　　　　　　}
Section S4: { wait(a); (6); …;　　*(7);*　　}
Section S5: { wait(c); …;　　*(8);*　　　}
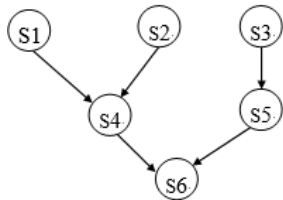Section S6: { *wait(d);*　*wait(e);*　…;　　}
Which is suitable for blank (7)?

单选题 (6 分)　　6分

 A. signal(d)

 B. wait(d)

 C. wait(e)

 D. signal(a)

　正确答案: A

7. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { …;   *(3);*   }

Section S2: { …;   *(4);*   }

Section S3: { …;   *(5);*   }

Section S4: { wait(a); (6); …;   *(7);*   }

Section S5: { wait(c); …;   *(8);*   }

Section S6: { *wait(d);*   *wait(e);*   …;   }

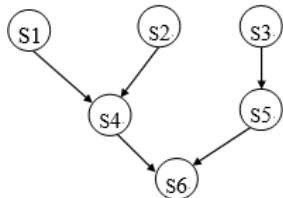Which is suitable for blank (8)?

单选题 (6 分)   6分

A. wait(e)

B. signal(d)

C. wait(d)

D. signal(e)

正确答案: D

8. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { …;   *(3);*   }

Section S2: { …;   *(4);*   }

Section S3: { …;   *(5);*   }

Section S4: { wait(a); (6); …;   *(7);*   }

Section S5: { wait(c); …;   *(8);*   }

Section S6: { *wait(d);*   *wait(e);*   …;   }

Which is suitable for blank (2)?

单选题 (5 分)   5分

A. 1

B. 0

C. 6

D. 3

正确答案: B

9. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { ...;   *(3)*;   }

Section S2: { ...;   *(4)*;   }

Section S3: { ...;   *(5)*;   }

Section S4: { wait(a); (6); ...;   *(7)*;   }

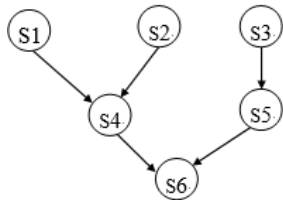Section S5: { wait(c); ...;   *(8)*;   }

Section S6: { *wait(d)*;   *wait(e)*;   ...;   }

Which is suitable for blank (4)?

单选题 (6 分)   6分

A. signal(e)

B. wait(e)

C. signal(b)

D. wait(b)

正确答案: C

10. 下列调度算法中，不可能导致饥饿现象的是 _____ 。

单选题 (6 分)   6分
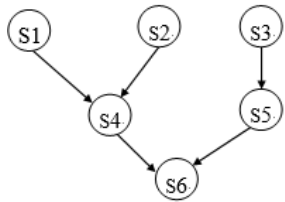
A. 抢占式短作业优先

B. 时间片轮转

C. 静态优先数调度

D. 非抢占式短作业优先

正确答案: B

11. Suppose a shared printer is printing my job currently.While the printer is in use, you seek to print your job. Under any of the modern OS's which of the following events are likely to happen :

单选题 (6 分)   6分

A. my job will be aborted because you are my boss

B. your job will be queued based on its priority

C. you will be notified that the printer is busy, print later

D. your job will be spooled for printing in the order it arrived

正确答案: D

12. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { ...;   *(3);*   }

Section S2: { ...;   *(4);*   }

Section S3: { ...;   *(5);*   }

Section S4: { wait(a); (6); ...;   *(7);*   }

Section S5: { wait(c); ...;   *(8);*   }

Section S6: { *wait(d);*   *wait(e)*;   ...;   }

Which is suitable for blank (5)?

单选题 (6 分)   6分

A. signal(a)
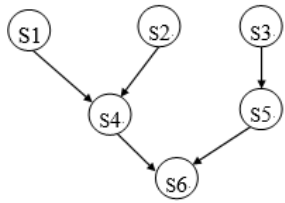
B. wait(c)

C. signal(c)

D. wait(a)

正确答案: C

---

13. 若某单处理器多进程系统中有多个就绪态进程，则下列关于处理机调度的叙述中错误的是___。

单选题 (6 分)   6分

A. 创建新进程后能进行处理机调度

B. 在进程结束时能进行处理机调度

C. 在进程处于临界区时不能进行处理机调度

D. 在系统调用完成并返回用户态时能进行处理机调度

正确答案: C

---

14. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;

Section S1: { ...;   *(3);*   }

Section S2: { ...;   *(4);*   }

Section S3: { ...;   *(5);*   }

Section S4: { wait(a); (6); ...;   *(7);*   }

Section S5: { wait(c); ...;   *(8);*   }

Section S6: { *wait(d);*   *wait(e)*;   ...;   }

Which is suitable for blank (3)?

单选题 (6 分)   6分

A. wait(a)

B. signal(a)

C. signal(c)

D. wait(c)

正确答案: B

15. Which of the following scheduling algorithms is based on time-sharing（分时）system?

单选题 (6 分)   6分

A. First-come-first-served scheduling

B. Shortest-job-first scheduling

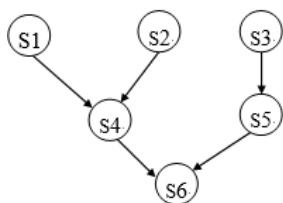C. Priority scheduling

D. Round-Robin scheduling

正确答案: D

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

单选题 (6 分)   6分

A. no process has entered the critical-section

B. two processes have entered the critical-section

C. a process has entered the critical-section,another process is waiting to enter the critical-section

D. a process has entered the critical-section, and no process is being blocked

正确答案: D

17. Forthe following questions,consider a set of code sections (S1-S6) executing concurrently.

Here is the incomplete solution for solving this synchronization problem:

Semaphore a = *(1)*, b = *(2)*, c = 0, d = 0, e = 0;
Section S1: { …;   *(3)*;   }
Section S2: { …;   *(4)*;   }
Section S3: { …;   *(5)*;   }
Section S4: { wait(a); (6); …;   *(7)*;   }
Section S5: { wait(c); …;   *(8)*;   }
Section S6: { *wait(d)*;   *wait(e)*;   …;   }

Which is suitable for blank (1)?

单选题 (5 分)   5分

A. 3

B. 0

C. 1

D. 6

正确答案: B

18. 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？

单选题 (6 分)　　6分

A. 3

B. 7

C. 0

D. 2

正确答案: C