

1. 考虑页面置换算法，系统有 $m$ 个页帧供调度，初始时全空；引用串长度为 $p$ ，包含了 $n$ 个不同的页面，无论用什么缺页算法，缺页次数不会少于\_\_\_\_\_。

单选题 (10 分) 10分

- A.  $m$
- B.  $p$
- C.  $n$
- D.  $\min(m,n)$

正确答案: C

2. In a virtual memory system , \_\_\_\_\_.

单选题 (10 分) 10分

- A. MMUs convert physical addresses to virtual addresses during execution
- B. determining how to map virtual addresses to physical addresses is of great importance
- C. when the system is ready to run a process, the system loads the process's code and data from main memory into cache
- D. each virtual address space is much smaller than the real address space

正确答案: B

3. 总体上说，请求分页(demand-paging)是个很好的虚拟内存管理策略。但是，有些程序设计技术并不适合于这种环境。例如，\_\_\_\_\_。

单选题 (10 分) 10分

- A. 矢量运算
- B. 堆栈
- C. 二分法搜索
- D. 线性搜索

正确答案: C

4. If a system use the banker's algorithm to avoid deadlock, which of the following statement is correct?

单选题 (10 分) 10分

- A. If the system is in an unsafe state, it must cause a deadlock.
- B. If the system is in a safe state, it may cause a deadlock.

C. If the system is in an unsafe state, it may cause a deadlock.

D. If the system is in a safe state, it must cause a deadlock.

正确答案: C

5. A computer system has a device with  $n$  mutually exclusive instances. Three concurrent processes require 3, 4 and 5 instances. To ensure deadlock not to occur, what is the minimum number  $n$ ?

单选题 (10 分) 10分

A. 12

B. 9

C. 10

D. 11

正确答案: C

6. In a paging memory management system, there is a pagetable as following:

Page No.	Frame No.
0	2
1	1
2	6
3	3
4	7

If the page size is 4KB, then paging address hardware will convert logical address **12388** into physical address \_\_\_\_\_。

单选题 (10 分) 10分

A. 4196

B. 24676

C. 12388

D. 9292

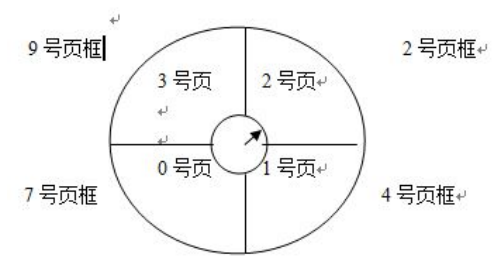
正确答案: C

7. 设某计算机的逻辑地址空间和物理地址空间均为64KB，按字节编址。若某进程最多需要6页（Page）数据存储空间，页的大小为1KB，操作系统采用固定分配局部置换策略为此进程分配4个页框（PageFrame）。在时刻260前的该进程访问情况如下表所示（访问位即使用位）。

页号	页框号	装入时刻	访问位
0	7	130	1
1	4	230	1
2	2	200	1
3	9	160	1

当该进程执行到时刻260时，要访问逻辑地址为17AFH的数据。请回答下列问题：

- (1) 该逻辑地址对应的页号是 ① ？
- (2) 若采用先进先出（FIFO）置换算法，该逻辑地址对应的物理地址是 ② H（填写4位十六进制数，且字母为大写A、B、C、D、E、F）？
- (3) 若采用时钟（CLOCK）置换算法，该逻辑地址对应的物理地址是 ③ H？（填写4位十六进制数，且字母为大写A、B、C、D、E、F）（设搜索下一页的指针沿顺时针方向移动，且当前指向2号页框，示意图如下。）



填空题 (30 分) 30 分 （请按题目中的空缺顺序依次填写答案）

① 5

② 1FAF

③ 0BAF

正确答案:

- ① 5
- ② 1FAF
- ③ 0BAF
- BAF

8. In a demanding paging system, the size of a page is 4KB. A process accesses the logical address 12345 (0x3039) will \_\_\_\_\_ if the page table is as the following:

Page #	Frame #	Validity
0	3	V
1	4	V
2	2	V
3	—	I

单选题 (10 分) 10分

- A. access physical address  $3 \times 4096 + 57$
- B. access physical address  $2 \times 4096 + 57$
- C. access physical address  $4 \times 4096 + 57$
- D. cause a page-fault interrupt

正确答案: D

