

長庚大學112學年度第一學期 作業系統 第一次小考 滿分100

系級:

姓名:

學號:

1. Assume that the fork() function is always successful, please provide the output of the following program. (40%)

```
#include<sys/types.h>
#include<stdio.h>
#include<unistd.h>
int main()
{
    pid_t pid, pid2;
    printf("Statement 1 !\n");
    pid = fork();
    if (pid > 0)
    {
        wait(NULL);
    }
    else
    {
        pid2 = fork();
        if (pid2 == 0)
        {
            printf("Statement 2 !\n");
        }
        else
        {
            wait(NULL);
            printf("Statement 3 !\n");
        }
        printf("Statement 4 !\n");
    }
    printf("Statement 5 !\n");
    return 0;
}
```

Statement 1 !  
Statement 2 !  
Statement 4 !  
Statement 5 !  
Statement 4 !  
Statement 5 !  
Statement 5 !

2. Assume that the fork() function is always successful, please provide the output of the following program. (60%)

```
#include<sys/types.h>
#include<stdio.h>
#include<unistd.h>
int main()
{
    pid_t pid, pid2;
    printf("A");
    pid = fork();
    if (pid == 0)
    {
        printf("B");
        pid2 = fork();
        if (pid2 == 0)
        {
            printf("C");
        }
        else
        {
            wait(NULL);
            printf("D");
        }
        printf("E");
    }
    else
    {
        wait(NULL);
        printf("F");
    }
    printf("G");
    return 0;
}
```

ABCEGDEGFG

or

ABCEGABDEGAFG

Both are correct