長庚大學107學年度第二學期 作業系統實務 第三次小考

系級: 姓名: 學號:

1. (40%) In our lab exercises, before we connect the TI OMAP 5912 evaluation board to the PC, we have to set up the TFTP and NFS servers on PC. What are the purposes of the TFTP server and the NFS server.

Answer:
The TFTP server is used for downloading the Linux kernel image to the evaluation board.
The NFS server is used for sharing the root filesystem so that PC can easily share files with the evaluation board.

2. (30%) Please refer to the following sample code. What are the purposes of the last two lines?

```
#include <linux/init.h>
#include <linux/module.h>
MODULE_LICENSE("License for you");
static int mymodule_init(void)
{
    printk("Instert My Module to the Linux Kernel!\n");
    return 0;
}
static void mymodule_exit(void)
{
    printk("My Module is Unloaded!\n");
}
module_init(mymodule_init);
module_exit(mymodule_exit);
```

Answer:
module_init(mymodule_init); => when inserting this kernel module, run function “mymodule_init”
module_exit(mymodule_exit); => when removing this kernel module, run function “mymodule_exit”

3. (30%) As Halting Problem tells us that we can not use an algorithm to decide whether another algorithm *m* halts on a specific input *x*, WCET is also undecidable. However, we still need a number to represent the execution time of a real-time task when conducting real-time scheduling. What is the substitute of WCET when we schedule real-time tasks?

Answer:
An upper bound of the WCET is then used to represent the execution time for real-time scheduling, and we would like to make the upper bound as tight as possible.