Due Tuesday September 26, 2017
Please print or write using pen! Make sure you are using the right edition of the textbook.

A. Exercises: 3.1, 3.12 3.13, 3.17

B. Consider the following code sequence:

```c
char buf1[400], buf2[300], buf3[1500];
int x,y,z,w;
x = (open 'xyz', 2);
if (x < 0) { printf('error 1'); exit(-1)}
w=1seek(x,700,1);
if (w < 0) { printf('error 2'); exit(-2)}
y = read(x,buf1,200); // the first read system call
if (y < 0) { printf('error 2'); exit(-3)}
y = read(x,buf2,100); // the second read system call
if (y < 0) { printf('error 2'); exit(-3)}
z = read(x,buf3,1500); // the third read system call
if (z < 0) { printf('error'); exit(4)}
```

Assume that it takes 3 milliseconds and 4 milliseconds to perform read and write disc operation, respectively, and that it takes 0.25 millisecond and 0.2 millisecond for operating system to process a system call and hardware interrupt, respectively. Also, assume that that the given process is the only active process in the system and that no error happens during the execution of system calls or I/O operations. For how long this process will be blocked after issuing:

a. `lseek system call`. Explain.
b. `the first read system call`? Explain.
c. `the second read system call`? Explain.
d. `the third read system call`? Explain.

C. The clock interrupt handler on a certain computer system requires 0.01 millisecond (including CPU switch). If the clock routine is activated 60 times per second, what is a fraction of the CPU time devoted to the clock?

D. Exercises: 6.10, 6.12, 6.19, 6.21

E. Assume the following arrivals in a ready state. Process P1 with burst=28 arrives at t=0, P2 with burst 9 arrives at t=3, P3 with burst=4 arrives at t=17 and P4 with burst 12 arrives at t=25. Show Gantt chart and average waiting time for this situation if processes are served according to the multilevel feedback queues scheduling graphed in Figure 6.7. Remember this scheduling is preemptive.