

## ASSIGNMENT 2

1. What is the difference between multiprocessing, multiprogramming, multitasking and multithreading?
2. What is the output of the following code:

```
#include <sys/types.h>
#include <stdio.h>
#include <unistd.h>

int value=5;

int main() {
    pid_t pid;
    pid = fork();
    if (pid == 0) {
        value += 15;
    }
    else if (pid > 0) {
        wait(NULL);
        printf("Parent: value is %d\n", value);
        exit(0);
    }
}
```

3. Describe the actions taken by a kernel to switch between processes.
4. Describe the actions taken by a kernel to switch between threads belonging to the same application.
5. Describe the actions taken by a user-level threads package to switch between threads.
6. What can be done on both the hardware and software level to minimize the overhead associated with a context switch?
7. How many priority levels does Windows XP have? Why not one number greater or lesser?
8. Name a process with priority 0 in Windows XP? When is it scheduled to run?
9. Which of the following components of program state are shared across threads in a multithreaded process? Register values, heap values, global variables, stack memory.
10. What is the difference between short-term, medium-term and long-term scheduler?