# Operating System and System Administration

**Tutorial 03 Year 02 Semester 01 2018**

**Department of Information Technology, Faculty of Computing**

1) Describe the actions taken by a kernel to context switch between processes.

2) A process is a program in execution, and therefore a process is more than just the program. Explain why a process is different from a program.

3) Consider the following program. What will be the output in Line A?

```
int value = 60;
int main()
{
      pid_t pid;
      pid = fork();
      if (pid == 0) {
            value = value + 20;
           }
      else if (pid > 0) {
            value = value -20;
            printf("PARENT: value= %d \n", value); //Line A
            wait (NULL);
           }
}
```

4) Consider the following C program.

// Assume variables i and pid, have been properly defined, and/or initialized and there is no syntax error.

```
int main ( ) {
    for(i =0; i <3; i++) {
              pid=fork ();
             }
 }
```

How many child processes are created when the program is executed?

5) Describe the difference among short-term, medium-term and long- term scheduling.

6) Describe the actions a kernel takes to context switch between processes.

7) Draw the diagram showing all possible process states and describe them.

8) Give two reasons for the system to select a new process to run.

9) What is the process control block? List at least four pieces of information that are included in the PCB.