1. Which command shows some attributes of a process?  
a) pid  
b) $$  
c) ps  
d) HOME

Answer: c  
Explanation: ps command is used to show some attributes of a process. This command reads through the kernel’s data structures and process tables to fetch the characteristics of a process. By default, ps command displays the processes owned by the user running the command.

2. Which of the following attribute is not shown by ps command?  
a) PID  
b) PPID  
c) tty  
d) size

Answer: d  
Explanation: ps command displays the processes owned by the user running the command. If we execute the command immediately after logging in, it may produce an output like this:

$ ps

PID TTY TIME CMD

291 console 0:00 bash // login shell of this user

4. Which option is used by the system administrator for displaying processes of a user?  
a) -f  
b) -u  
c) -a  
d) -e

Answer: b  
Explanation: The system administrator needs to use the -u (user) option to know the activities of a user

9. A system call is a programmatic way in which the program requests for the service from the kernel of an operating system.  
a) True  
b) False

Answer: a  
Explanation: A system call often referred to as kernel call, is a request from a computer program for the services of the operating system. Basically, to access the resources or to utilize the services of the operating system, system calls are used by computer programs.

10. Which of the following system call is used for creating a new process?  
a) read  
b) fork  
c) wait  
d) new

Answer: b  
Explanation: A process in UNIX is created using fork() system call. It creates an exact copy of the process that invokes it. Now there will be two processes, one parent process and one child process. The process which invokes the fork system call is called parent process and the new process created is called child process.

11. When fork() is invoked, the child process created gets a new PID.  
a) True  
b) False

Answer: a  
Explanation: The process created using fork is practically identical to that of calling process except for a few parameters like PID. When a process is forked in this manner, the child process gets a new PID.

12. What is the value returned by fork system call, when the creation of child process is unsuccessful?  
a) positive integer  
b) negative integer  
c) zero  
d) fractional value

Answer: b  
Explanation: fork() system call is used in UNIX for creating new processes. It takes no parameters and returns an integer value. The value returned depends on the following cases:  
Positive value: returned to the parent process. The value contains PID of child process which is created.  
Negative value: returned if the creation of child process is unsuccessful.  
Zero: returned to the newly created child process.

13. Which system call is used to run a new program?  
a) fork  
b) wait  
c) exec  
d) exit

Answer: c  
Explanation: Forking creates a new process but it is not enough to run a new program. To do so, the forked child needs to overwrite its own images with the code and data of the new program. This mechanism is called exec and the child process is said to exec a new program.

14. Which system call is used by the parent process to wait for the child process to complete?  
a) wait  
b) exec  
c) fork  
d) exit

Answer: a  
Explanation: The parent process executes the wait() system call to wait for the child process to complete. It picks up the exit status of the child and then continues with its other functions.

1. We can run the jobs in the background in UNIX.  
a) True  
b) False

Answer: a  
Explanation: Since UNIX is a multitasking system, it allows the user to do more than one job at a time. But there can be only one process in the foreground and the rest of jobs have to run in the background.

2. Shell \_\_\_ operator is used for running jobs in the background.  
a) $  
b) #  
c) |  
d) &

Answer: d  
Explanation: The & is the shell operator used to run a process in the background. All we have to do is to terminate the command line with a & symbol, the command will automatically run in the background. For example,

$ sort -o emp.lst & // emp.lst will be sorted but the command will run in background

3. Which command is used for premature termination of a process?  
a) signal  
b) nice  
c) kill  
d) nohup

Answer: c  
Explanation: The kill command is used for premature termination of a process. It usually sends a signal with the intention of killing one or more processes. kill is an internal command in most shells. Kill command uses one or more PID’s as its arguments. For example,

$ kill 105 // terminates the job having PID 105

4. Which one of the following command is used for killing the last background job?  
a) kill $  
b) kill $$  
c) kill $!  
d) kill !

Answer: c  
Explanation: For most shells, the system variable $! Stores the PID of the last background job. So we can kill any process by using kill command. The PID of the job can be seen when & is affixed to a command. For example,

$ sort -o emp.lst &

467

$ kill $! // kills the sort command