

Name:

CSE

When answering the questions below, make sure to show all of your work. Pay attention to the point values on each question. State your assumptions, and explain your answers thoroughly. Remember that an explanation is expected with every answer except the multiple choice and true/false questions when the answer is true. Use blank paper if you do not have enough room.

Time: 09:00 to 12:00 | Total Marks: 75

1. Which call sends a signal to a process? [1]
 - a) kill()
 - b) signal()
 - c) raise()
 - d) exec()
2. Which system call is used to wait for a child process to terminate? [1]
 - a) wait()
 - b) kill()
 - c) exit()
 - d) fork()
3. What does the `exit()` system call do? [1]
 - a) Terminates the current process
 - b) Creates a child process
 - c) Waits for child
 - d) Sends signal
4. Which system call is used to create a new child process? [1]
 - a) fork()
 - b) clone()
 - c) exec()
 - d) wait()
5. Which header is needed for using fork? [1]
 - a) unistd.h
 - b) stdio.h
 - c) stdlib.h
 - d) string.h
6. What happens if `fork()` fails? [1]
 - a) Returns -1
 - b) Returns 0
 - c) Returns 1
 - d) Terminates system
7. What is the default action of the SIGKILL signal? [1]

- a) Terminates the process
- b) Ignores the signal
- c) Suspends the process
- d) Restarts process

8. Which function is used to duplicate a file descriptor? [1]

- a) dup()
- b) copy()
- c) link()
- d) open()

9. Which system call renames a file? [1]

- a) rename()
- b) move()
- c) unlink()
- d) link()

10. Which system call is used to terminate a process forcefully? [1]

- a) kill()
- b) exit()
- c) abort()
- d) terminate()

11. Which file descriptor represents standard input? [1]

- a) 0
- b) 1
- c) 2
- d) 3

12. Which system call can suspend process until signal is received? [1]

- a) pause()
- b) sleep()
- c) wait()
- d) alarm()

13. What does `execvp()` do? [1]

- a) Searches for the program in PATH and executes it
- b) Creates new process
- c) Waits for process
- d) None of the above

14. What is the file descriptor for standard output? [1]

- a) 1
- b) 0
- c) 2
- d) -1

15. Which call registers a handler for a signal? [1]

- a) signal()

b) kill()

c) exec()

d) wait()

16. Explain the term linking.

[5]

17. What is an operating system?

[5]

18. Define context switching.

[5]

19. Explain how to compile and execute a C program using `gcc`.

[5]

20. What is a loader in system programming?

[5]

21. Define system software with examples?

[5]

22. What are the implications of orphan and zombie processes?

[7]

23. What happens when a process ignores SIGCHLD?

[7]

24. What are signals in Unix?

[7]

25. How does a kernel handle interrupts from hardware?

[9]

