

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 file descriptor represents standard input? [1]
 - a) 0
 - b) 1
 - c) 2
 - d) 3
2. Which system call provides information about a file? [1]
 - a) stat()
 - b) info()
 - c) ls()
 - d) view()
3. Which call sends a signal to a process? [1]
 - a) kill()
 - b) signal()
 - c) raise()
 - d) alarm()
4. Which system call is used to create a new child process? [1]
 - a) fork()
 - b) clone()
 - c) exec()
 - d) wait()
5. What is the role of the `exit()` system call? [1]
 - a) Terminates the current process
 - b) Starts a new process
 - c) Closes all file descriptors
 - d) Restarts the OS
6. Which system call closes a file descriptor? [1]
 - a) close()
 - b) end()
 - c) exit()
 - d) unlink()
7. Which of the following system calls is used to create a new process in Linux? [1]

- a) fork()
- b) exec()
- c) clone()
- d) None of Above

8. Which of the following is not a system call? [1]

- a) printf()
- b) fork()
- c) exec()
- d) wait()

9. Which system call ends the execution of a process? [1]

- a) exit()
- b) fork()
- c) kill()
- d) wait()

10. What are Linux commads [1]

- a) cd
- b) ls
- c) mkdir
- d) All

11. What does 'O_TRUNC' flag do in 'open'? [1]

- a) Truncates file to 0 length
- b) Appends to file
- c) Prevents overwrite
- d) Renames file

12. What is a zombie process? [1]

- a) A terminated child not yet waited for
- b) A sleeping process
- c) A paused process
- d) A killed process

13. Which signal is used to interrupt a process (e.g., Ctrl+C)? [1]

- a) SIGINT
- b) SIGKILL
- c) SIGTERM
- d) SIGHUP

14. Which signal cannot be caught or ignored? [1]

- a) SIGKILL
- b) SIGTERM
- c) SIGINT
- d) SIGSTOP

15. Which system call replaces the current process image? [1]

- a) exec()

b) fork()

c) exit()

d) wait()

16. What is mean by linux?

[5]

17. Define a compiler and an assembler.

[5]

18. What is grep command?

[5]

19. (True/Flase) Is cd a command in Linux?

[5]

20. What is a loader in system programming?

[5]

21. Define system call. Provide one common example.

[5]

22. What is the role of the linker in system programming?

[7]

23. Describe the potential consequences of minor inefficiencies in system-critical software.

[7]

24. Explain why even minor inefficiencies can have a significant impact on performance in system-critical software, providing specific examples. [7]

25. Describe a scenario where the use of assembly language would be absolutely necessary or highly advantageous in a system-level programming project, justifying your choice with specific examples related to hardware interaction or performance bottlenecks. [9]

