

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. What does the `exec()` system call do? [1]
 - a) Creates a new process
 - b) Replaces current process image
 - c) Terminates a process
 - d) All the above
2. What happens if `fork()` fails? [1]
 - a) Returns -1
 - b) Returns 0
 - c) Returns 1
 - d) Terminates system
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. What is returned by `fork()` in the child process? [1]
 - a) 0
 - b) -1
 - c) PID of child
 - d) PID of parent
5. Which system call checks the accessibility of a file? [1]
 - a) `access()`
 - b) `read()`
 - c) `open()`
 - d) `stat()`
6. Which system call replaces the current process image? [1]
 - a) `exec()`
 - b) `fork()`
 - c) `exit()`
 - d) `wait()`
7. List correct command in linux [1]

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

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

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

9. 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

10. What does the `read()` system call return upon successful read? [1]

- a) Number of bytes read
- b) 0
- c) -1
- d) File descriptor

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

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

12. Which system call replaces the current process image with a new process image? [1]

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

13. What does a return value of -1 from `fork()` indicate? [1]

- a) Fork failed
- b) Child process
- c) Parent process
- d) Normal execution

14. Which system call is used to wait for a child process to terminate? [1]

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

15. What is the maximum number of file descriptors a process can have? [1]

- a) System-defined limit

b) 10

c) Unlimited

d) 256

16. What is mean by linux?

[5]

17. What are the functions of system programs?

[5]

18. Name a programming language commonly used in system-level programming.

[5]

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

[5]

20. List some commands

[5]

21. What is a loader in system programming?

[5]

22. Differentiate between static and dynamic linking, with examples?

[7]

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

[7]

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[7]

25. Explain reentrant code and its importance in interrupt service routines.

[9]

