1. One of the main goals of the OS is to: a) Allow user programs to control the system b) Isolate the programmer from the hardware complexity c) Change user programs to machine instructions to run d) Provide program optimizations through libraries

2. Storing several processes in main memory to alternate their execution when another is blocked due to I/O operations is called: a) Parallelism b) Multiprogramming c) Batch processing d) Spooling

3. What is the role of the Dispatcher? a) Giving control of the CPU to the process selected by the mid-term scheduler b) Giving control of the CPU to the process selected by the short-term scheduler c) Applying the priority policy of the Operating System d) Providing interruption processing for the clock.

4. A process is: a) A set of several threads b) A program in execution c) A microprogram d) An executable program stored in a file

5. How does the OS provide services to external programmers? a) Using system programs b) Through system calls c) Using processes d) Providing system objects to be instantiated.

6. What is the CPU execution mode reserved to the OS? a) Kernel or privileged mode b) Major mode c) User mode d) Service mode

7. What is the heap used for? a) Storing temporary variables. b) Storing global variables. c) Storing constants. d) None of the above.

8. Compared to a single layer OS, a multiple layer operating system is: a) Less safe. b) More efficient. c) Easier to debug. d) Easier to implement.

9. What is not considered as being part of the kernel? a) Communication service b) Shell c) System calls d) Virtual memory.

10. Having a very small *quantum of* time to schedule processes is: a) Good, as more processes can be executed in the same amount of time b) Good, as the user may handle more processes at the same time c) Bad, as the overhead of the switch may be bigger than the execution time itself d) Bad, as one process may interfere with other one while the context switch is being performed.

11. Which of the following statements is NOT understood as one of the OS goals? a) Execute user programs b) Make the computer system easy to use c) Allow the user to accomplish any desired task, even if it comprises the OS protection mechanisms, just for user satisfaction purposes d) Use the computer hardware in an efficient manner.

12. Can any computer instruction be executed in user mode? a) Yes, the user mode allows the user to execute any instruction b) Yes, system mode comprises exactly the same number of instructions as in the user mode c) Yes, the user is the co-owner of the system and hence has full privileges to access all the systems instructions d) No, system mode has more privileges than user mode, and hence, access to a privileged instruction set.

13. What is always running in the computer? a) System Services b) Kernel c) BIOS d) Task Manager

14. If you increase the Security and Protection of a computer what will most likely happen? a) Increase performance b) Decrease performance c) Increase capability d) Decrease stability

15. Threads of the same process share: a) Code, Registers and Data b) Stack, Data, and Registers c) Code, Stack, and Open Files d) Code, Data, and Open Files

16. How can internal fragmentation be solved? a) Defragmenting b) Increasing memory block size c) Decreasing memory block size d) None of the above

17. When could be appropriate for the operating system to “waste” resources and make active waiting? a) In the GUI, to optimize the user’s interaction with the system b) To execute system calls faster c) In the hard disk drive, to make programmed I/O d) Never.

18. How does changing between kernel mode and user mode function as a form of protection system? a) Certain instructions can be executed only when the CPU is in kernel mode b) Hardware devices can be accessed only when the program is executing in kernel mode c) Control over interrupts can be made only when a program is executing in kernel mode d) All of them are true.

19. Which of the following instructions should be privileged? a. Set value of timer b. Read the clock c. Clear memory d. Issue a trap instruction e. Turn off interrupts f. Modify entries in device-status table g. Switch from user to kernel mode h. Access I/O device

1. a, c, g, f, h
2. b, c, e, g, h
3. a, c, e, f, h
4. c, d, f, g, e

20. Which of the following information is not stored in an i-node. a) Owner ID b) Pointer to the current file read position c) The creation date d) The RWX bits