**Operating System MCQ (Multiple Choice Questions)**

1. What is an operating system?  
a) interface between the hardware and application programs  
b) collection of programs that manages hardware resources  
c) system service provider to the application programs  
d) all of the mentioned

Answer: d  
Explanation: An Operating System acts as an intermediary between user/user applications/application programs and hardware. It is a program that manages hardware resources. It provides services to application programs.

2. What is the main function of the command interpreter?  
a) to provide the interface between the API and application program  
b) to handle the files in the operating system  
c) to get and execute the next user-specified command  
d) none of the mentioned

Answer: c  
Explanation: The main function of a command interpreter is to get and execute the next user-specified command. Command Interpreter checks for valid command and then runs that command else it will throw an error.

3. In Operating Systems, which of the following is/are CPU scheduling algorithms?  
a) Priority  
b) Round Robin  
c) Shortest Job First  
d) All of the mentioned

Answer: d  
Explanation: In Operating Systems, CPU scheduling algorithms are:  
i) First Come First Served scheduling  
ii) Shortest Job First scheduling  
iii) Priority scheduling  
iv) Round Robin scheduling  
v) Multilevel Queue scheduling  
vi) Multilevel Feedback Queue scheduling  
All of these scheduling algorithms have their own advantages and disadvantages.

4. To access the services of the operating system, the interface is provided by the \_\_\_\_\_\_\_\_\_\_\_  
a) Library  
b) System calls  
c) Assembly instructions  
d) API

Answer: b  
Explanation: To access services of the Operating System an interface is provided by the System Calls. Generally, these are functions written in C and C++. Open, Close, Read, Write are some of most prominently used system calls.

5. CPU scheduling is the basis of \_\_\_\_\_\_\_\_\_\_\_  
a) multiprogramming operating systems  
b) larger memory sized systems  
c) multiprocessor systems  
d) none of the mentioned

Answer: a  
Explanation: None.

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6. Which one of the following is not true?  
a) kernel remains in the memory during the entire computer session  
b) kernel is made of various modules which can not be loaded in running operating system  
c) kernel is the first part of the operating system to load into memory during booting  
d) kernel is the program that constitutes the central core of the operating system

Answer: b  
Explanation: Kernel is the first program that is loaded in memory when OS is loading as well as it remains in memory till OS is running. Kernel is the core part of the OS which is responsible for managing resources, allowing multiple processes to use the resources and provide services to various processes. Kernel modules can be loaded and unloaded in run-time i.e. in running OS.

7. Which one of the following errors will be handle by the operating system?  
a) lack of paper in printer  
b) connection failure in the network  
c) power failure  
d) all of the mentioned

Answer: d  
Explanation: All the mentioned errors are handled by OS. The OS is continuously monitoring all of its resources. Also, the OS is constantly detecting and correcting errors.

8. Where is the operating system placed in the memory?  
a) either low or high memory (depending on the location of interrupt vector)  
b) in the low memory  
c) in the high memory  
d) none of the mentioned

Answer: a  
Explanation: None.

9. If a process fails, most operating system write the error information to a \_\_\_\_\_\_  
a) new file  
b) another running process  
c) log file  
d) none of the mentioned

Answer: c  
Explanation: If a process fails, most operating systems write the error information to a log file. Log file is examined by the debugger, to find out what is the actual cause of that particular problem. Log file is useful for system programmers for correcting errors.

10. Which one of the following is not a real time operating system?  
a) RTLinux  
b) Palm OS  
c) QNX  
d) VxWorks

Answer: b  
Explanation: VxWorks, QNX & RTLinux are real-time operating systems. Palm OS is a mobile operating system. Palm OS is developed for Personal Digital Assistants (PDAs).

11. What does OS X has?  
a) monolithic kernel with modules  
b) microkernel  
c) monolithic kernel  
d) hybrid kernel

Answer: d  
Explanation: OS X has a hybrid kernel. Hybrid kernel is a combination of two different kernels. OS X is developed by Apple and originally it is known as Mac OS X.

12. In operating system, each process has its own \_\_\_\_\_\_\_\_\_\_  
a) open files  
b) pending alarms, signals, and signal handlers  
c) address space and global variables  
d) all of the mentioned

Answer: d  
Explanation: In Operating Systems, each process has its own address space which contains code, data, stack, and heap segments or sections. Each process also has a list of files that is opened by the process as well as all pending alarms, signals, and various signal handlers.

13. In a timeshare operating system, when the time slot assigned to a process is completed, the process switches from the current state to?  
a) Suspended state  
b) Terminated state  
c) Ready state  
d) Blocked state

Answer: c  
Explanation: In a time-sharing operating system, when the time slot given to a process is completed, the process goes from the running state to the Ready State. In a time-sharing operating system, unit time is defined for sharing CPU, it is called a time quantum or time slice. If a process takes less than 1 time quantum, then the process itself releases the CPU.

14. Cascading termination refers to the termination of all child processes if the parent process terminates \_\_\_\_\_\_  
a) Normally or abnormally  
b) Abnormally  
c) Normally  
d) None of the mentioned

Answer: a  
Explanation: Cascading termination refers to the termination of all child processes if the parent process terminates Normally or Abnormally. Some systems don’t allow child processes to exist if the parent process has terminated. Cascading termination is normally initiated by the operating system.

15. When a process is in a “Blocked” state waiting for some I/O service. When the service is completed, it goes to the \_\_\_\_\_\_\_\_\_\_  
a) Terminated state  
b) Suspended state  
c) Running state  
d) Ready state

Answer: d  
Explanation: Suppose that a process is in “Blocked” state waiting for some I/O service. When the service is completed, it goes to the ready state. Process never goes directly to the running state from the waiting state. Only processes which are in ready state go to the running state whenever CPU allocated by operating system.

16. Transient operating system code is a code that \_\_\_\_\_\_\_\_\_\_\_\_  
a) stays in the memory always  
b) never enters the memory space  
c) comes and goes as needed  
d) is not easily accessible

Answer: c  
Explanation: None.

17. The portion of the process scheduler in an operating system that dispatches processes is concerned with \_\_\_\_\_\_\_\_\_\_\_\_  
a) assigning ready processes to waiting queue  
b) assigning running processes to blocked queue  
c) assigning ready processes to CPU  
d) all of the mentioned

Answer: c  
Explanation: None.

18. The FCFS algorithm is particularly troublesome for \_\_\_\_\_\_\_\_\_\_\_\_  
a) operating systems  
b) multiprocessor systems  
c) time sharing systems  
d) multiprogramming systems

Answer: c  
Explanation: In a time sharing system, each user needs to get a share of the CPU at regular intervals.

19. For an effective operating system, when to check for deadlock?  
a) every time a resource request is made at fixed time intervals  
b) at fixed time intervals  
c) every time a resource request is made  
d) none of the mentioned

Answer: a  
Explanation: In an effective operating system, we must verify the deadlock each time a request for resources is made at fixed time intervals.

20. A deadlock avoidance algorithm dynamically examines the \_\_\_\_\_\_\_\_\_\_ to ensure that a circular wait condition can never exist.  
a) operating system  
b) resources  
c) system storage state  
d) resource allocation state

Answer: d  
Explanation: Resource allocation states are used to maintain the availability of the already and current available resources.

21. Swapping \_\_\_\_\_\_\_ be done when a process has pending I/O, or has to execute I/O operations only into operating system buffers.  
a) must never  
b) maybe  
c) can  
d) must

Answer: a  
Explanation: None.

22. The main memory accommodates \_\_\_\_\_\_\_\_\_\_\_\_  
a) cpu  
b) user processes  
c) operating system  
d) all of the mentioned

Answer: c  
Explanation: None.

23. The operating system is responsible for?  
a) bad-block recovery  
b) booting from disk  
c) disk initialization  
d) all of the mentioned

Answer: d  
Explanation: None.

24. The operating system and the other processes are protected from being modified by an already running process because \_\_\_\_\_\_\_\_\_\_\_\_  
a) every address generated by the CPU is being checked against the relocation and limit registers  
b) they have a protection algorithm  
c) they are in different memory spaces  
d) they are in different logical addresses

Answer: a  
Explanation: None.

25. Using transient code, \_\_\_\_\_\_\_ the size of the operating system during program execution.  
a) maintains  
b) changes  
c) increases  
d) decreases

Answer: b  
Explanation: None.

26. The operating system maintains a \_\_\_\_\_\_ table that keeps track of how many frames have been allocated, how many are there, and how many are available.  
a) memory  
b) mapping  
c) page  
d) frame

Answer: d  
Explanation: None.

27. To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called. For implementing dynamic loading \_\_\_\_\_\_\_\_\_\_\_\_  
a) special support from operating system is essential  
b) special support from hardware is required  
c) user programs can implement dynamic loading without any special support from hardware or operating system  
d) special support from both hardware and operating system is essential

Answer: c  
Explanation: None.

28. The \_\_\_\_\_\_\_\_\_ presents a uniform device-access interface to the I/O subsystem, much as system calls provide a standard interface between the application and the operating system.  
a) Device drivers  
b) I/O systems  
c) Devices  
d) Buses

Answer: a  
Explanation: None.

29. In real time operating system \_\_\_\_\_\_\_\_\_\_\_\_  
a) process scheduling can be done only once  
b) all processes have the same priority  
c) kernel is not required  
d) a task must be serviced by its deadline period

Answer: d  
Explanation: None.

30. Hard real time operating system has \_\_\_\_\_\_\_\_\_\_\_\_\_\_ jitter than a soft real time operating system.  
a) equal  
b) more  
c) less  
d) none of the mentioned

Answer: c  
Explanation: Jitter is the undesired deviation from the true periodicity.

31. For real time operating systems, interrupt latency should be \_\_\_\_\_\_\_\_\_\_\_\_  
a) zero  
b) minimal  
c) maximum  
d) dependent on the scheduling

Answer: b  
Explanation: Interrupt latency is the time duration between the generation of interrupt and execution of its service.

32. Which one of the following is a real time operating system?  
a) Windows CE  
b) RTLinux  
c) VxWorks  
d) All of the mentioned

Answer: d  
Explanation: None.

33. The priority of a process will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ if the scheduler assigns it a static priority.  
a) depends on the operating system  
b) change  
c) remain unchanged  
d) none of the mentioned

Answer: c  
Explanation: None.

34. What are the characteristics of Host based IDS?  
a) Logs are analysed to detect tails of intrusion  
b) The host operating system logs in the audit information  
c) Logs includes logins, file opens, and program executions  
d) All of the mentioned

Answer: d  
Explanation: None.

35. What are the characteristics of stack based IDS?  
a) It is programmed to interpret a certain series of packets  
b) It models the normal usage of the network as a noise characterization  
c) They are integrated closely with the TCP/IP stack and watch packets  
d) The host operating system logs in the audit information

Answer: c  
Explanation: None.

36. If the sum of the working – set sizes increases, exceeding the total number of available frames \_\_\_\_\_\_\_\_\_\_\_\_  
a) the operating system selects a process to suspend  
b) the system crashes  
c) then the process crashes  
d) the memory overflows

Answer: a  
Explanation: None.

37. The information about all files is kept in \_\_\_\_\_\_\_\_\_\_\_\_  
a) operating system  
b) separate directory structure  
c) swap space  
d) none of the mentioned

Answer: b  
Explanation: None.

38. The operating system keeps a small table containing information about all open files called \_\_\_\_\_\_\_\_\_\_\_\_  
a) file table  
b) directory table  
c) open-file table  
d) system table

Answer: c  
Explanation: None.

39. What will happen in the single level directory?  
a) All files are contained in the same directory  
b) All files are contained in different directories all at the same level  
c) Depends on the operating system  
d) None of the mentioned

Answer: a  
Explanation: None.

40. The operating system \_\_\_\_\_\_\_ the links when traversing directory trees, to preserve the acyclic structure of the system.  
a) deletes  
b) considers  
c) ignores  
d) none of the mentioned

Answer: c  
Explanation: None.

41. To recover from failures in the network operations \_\_\_\_\_\_\_\_\_\_\_\_\_ information may be maintained.  
a) operating system  
b) ip address  
c) stateless  
d) state

Answer: d  
Explanation: None.

42. On systems where there are multiple operating system, the decision to load a particular one is done by \_\_\_\_\_\_\_\_\_\_\_\_\_  
a) process control block  
b) file control block  
c) boot loader  
d) bootstrap

Answer: c  
Explanation: None.

43. Whenever a process needs I/O to or from a disk it issues a \_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) system call to the operating system  
b) a special procedure  
c) system call to the CPU  
d) all of the mentioned

Answer: a  
Explanation: None.

44. The two steps the operating system takes to use a disk to hold its files are \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_  
a) caching & logical formatting  
b) logical formatting & swap space creation  
c) swap space creation & caching  
d) partitioning & logical formatting

Answer: d  
Explanation: None.

45. The \_\_\_\_\_\_\_ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory, and then starts the operating system.  
a) bootstrap  
b) main  
c) bootloader  
d) rom

Answer: a  
Explanation: None.

46. In SCSI disks used in high end PCs, the controller maintains a list of \_\_\_\_\_\_\_\_\_ on the disk. The disk is initialized during \_\_\_\_\_\_\_\_ formatting which sets aside spare sectors not visible to the operating system.  
a) destroyed blocks, partitioning  
b) bad blocks, low level formatting  
c) destroyed blocks, high level formatting  
d) bad blocks, partitioning

Answer: b  
Explanation: None.

47. Which principle states that programs, users, and even the systems be given just enough privileges to perform their task?  
a) principle of least privilege  
b) principle of process scheduling  
c) principle of operating system  
d) none of the mentioned

Answer: a  
Explanation: None.

48. Network operating system runs on \_\_\_\_\_\_\_\_\_\_\_  
a) every system in the network  
b) server  
c) both server and every system in the network  
d) none of the mentioned

Answer: b  
Explanation: None.

49. What are the types of distributed operating systems?  
a) Zone based Operating system  
b) Level based Operating system  
c) Network Operating system  
d) All of the mentioned

Answer: c  
Explanation: None.

50. In Unix, which system call creates the new process?  
a) create  
b) fork  
c) new  
d) none of the mentioned

Answer: b  
Explanation: In UNIX, a new process is created by fork() system call. fork() system call returns a process ID which is generally the process id of the child process created.