

Self Assessment Sheet1: Operating System

1. The term 'operating system' means:
 - a) the way a computer operator works.
 - b) conversion of high level languages into machine code.
 - c) a set of programs which controls computer working.
 - d) none of the above.

2. What is the name of the operating system that reads and reacts in terms of actual time:
 - a) Batch system
 - b) Time sharing system
 - c) Real time system
 - d) all of the above.

3. The primary job of the operating system of a computer is to:
 - a) command resources
 - b) manage resources
 - c) be user friendly
 - d) only one of the above.

4. Multiprogramming systems:
 - a) are easier to develop than single programming systems.
 - b) execute more jobs in same time period.
 - c) are used only on large mainframe computers.
 - d) all of the above

5. Which of the following is not an advantage of multiprogramming?
 - a) Increased throughput
 - b) Shorter response time
 - c) Ability to assign priorities to jobs.
 - d) Decreased operating system overhead.

6. What is the name of the techniques in which the operating system of a computer executes several programs concurrently by switching back and forth between them?
 - a) Partitioning
 - b) Multitasking
 - c) Windowing
 - d) Multithreading

7. A form of code that uses more than one process and processor, possibly of different types, and that may on occasions have more than one process or processor active at the same time, is known as:
 - a) multiprogramming.
 - b) multithreading.
 - c) timesharing.
 - d) multiprocessing.

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

9. Process is:
 - a) a program in high language kept on disk.
 - b) contents of mainmemory.
 - c) a program in execution.
 - d) a job in secondary memory

10. The processes that are residing in main memory and are ready and waiting to execute are kept on a list called:
 - a) job queue
 - b) ready queue
 - c) execution queue
 - d) process queue

11. The address of the next instruction to be executed by the current process is provided by the:
 - a) CPU registers
 - b) program counter
 - c) process stack
 - d) pipe

12. In operating system, each process has its own:

- a) address space and global variables
- b) open files
- c) pending alarms, signals and signal handlers
- d) all of the mentioned

13. The interval from the time of submission of a process to the time of completion is termed as:

- a) waiting time
- b) turnaround time
- c) response time
- d) throughput

14. Waiting time is:

- a) the total time in the blocked and waiting queues
- b) the total time spent in the ready queue
- c) the total time spent in the running queue
- d) the total time from the completion till the submission of a process

15. An I/O bound program will typically have:

- a) a few very short CPU bursts
- b) many very short I/O bursts
- c) many very short CPU bursts
- d) a few very short I/O bursts

16. A process is selected from the _____ queue by the _____ scheduler, to be executed.

- a) blocked, short term
- b) wait, long term
- c) ready, short term
- d) ready, long term

17. The strategy of allowing processes that are logically runnable to be temporarily suspended is called:

- a) preemptive scheduling
- b) non preemptive scheduling
- c) shortest job first
- d) first come first served

18. FIFO algorithm:

- a) executes first the job that last entered the queue.
- b) executes first the job that first entered the queue.
- c) executes first the job that has been in the queue longest time.
- d) executes first the job with the least processor needs

19. The dispatcher:

- a) actually schedules the task into the processor.
- b) puts tasks in I/O wait.
- c) never changes task priority.
- d) none of the above.

20. An SJF algorithm is simply a priority algorithm where the priority is:

- a) the predicted next CPU burst
- b) the inverse of the predicted next CPU burst
- c) the current CPU burst
- d) anything the user wants

21. In priority scheduling algorithm:

- a) CPU is allocated to the process with highest priority
- b) equal priority processes can not be scheduled
- c) CPU is allocated to the process with lowest priority
- d) none of the mentioned

22. In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of:

- a) all process
- b) currently running process
- c) parent process
- d) init process

23. The SJF algorithm executes first the job:

- a) that last entered the queue.
- b) that first entered the queue.
- c) that has been in the queue for the longest time.
- d) with the least processor needs.

24. Which of the following scheduling algorithms gives minimum average waiting time?

- a) FCFS
- b) SJF

c) Round – robin

d) Priority

25. The main function of dispatcher is:

- a) swapping a process to the disk.
- b) suspending some of the processes when the CPU load is high.
- c) assigning ready process to the CPU.
- d) bringing process from the disk to the main memory.

26. Poor response time are caused by:

- a) processor being busy.
- b) high I/O rate.
- c) any of the above.
- d) none of the above.

27. Scheduling is:

- a) allowing processes to use the processor.
- b) unrelated to performance consideration.
- c) not required in uniprocessor systems.
- d) the same regardless of the purpose of the system.

28. Time quantum is defined in:

- a) shortest job scheduling algorithm
- b) round robin scheduling algorithm
- c) priority scheduling algorithm
- d) multilevel queue scheduling algorithm

29. Round-Robin scheduling:

- a) allows interactive tasks quicker access to the processor.
- b) is quite complex to implement.
- c) gives each process the same chance at the processor.
- d) allows processor-bound processes more time in the processor.

30. With round robin scheduling algorithm in a time shared system ____.

- a) using very large time slices converts it into First come First served scheduling algorithm.
- b) using very small time slices converts it into First come First served scheduling algorithm.
- c) using extremely small time slices increases performance.
- d) using very small time slices converts it into Shortest Job First algorithm.

31. Process are classified into different groups in:

- a) shortest job scheduling algorithm
- b) round robin scheduling algorithm
- c) priority scheduling algorithm
- d) multilevel queue scheduling algorithm

32. Orders are processed in the sequence they arrive if _____ rule sequences the jobs.

- a) earliest due date
- b) slack time remaining
- c) first come, first served
- d) critical ratio

33. Which of the following is a pre-emptive scheduling algorithm?

- a) Round robin
- b) Shortest job next
- c) Priority base
- d) all of the above

34. Which of the following statements is false?

- a) a process scheduling algorithm is preemptive if the CPU can be forcibly removed from a process.
- b) time sharing systems generally use preemptive CPU scheduling.
- c) response time are more predictable in preemptive systems than in non preemptive systems.
- d) real time systems generally use non-preemptive CPU scheduling.

35. Which of the following statements are true?

- I. Shortest remaining time first scheduling may cause starvation
- II. Preemptive scheduling may cause starvation
- III. Round robin is better than FCFS in terms of response time

- a) I only
- c) II and III only

- b) I and III only
- d) I, II and III

36. Which of the following condition is required for deadlock to be possible?

- a) mutual exclusion
- b) a process may hold allocated resources while awaiting assignment of other resources
- c) no resource can be forcibly removed from a process holding it
- d) all of the mentioned

37. Four necessary conditions for deadlock to exist are :

- a) mutual exclusion, preemption, deadlock avoidance, circular wait.
- b) mutual exclusion, no preemption, deadlock avoidance, circular wait .
- c) mutual exclusion, preemption, hold and wait, circular wait.
- d) mutual exclusion, no preemption, hold and wait, circular wait.

38. The circular wait condition can be prevented by

- a) defining a linear ordering of resource types
- b) using thread
- c) using pipes
- d) all of the mentioned

39. What problem is solved by Dijkstra's Banker's Algorithm?

- a) Mutual exclusion
- b) Deadlock recovery
- c) Deadlock prevention
- d) Deadlock avoidance

40. What is the drawback of banker's algorithm?

- a) in advance processes rarely know that how much resource they will need
- b) the number of processes changes as time progresses
- c) resource once available can disappear
- d) all of the mentioned

41. The number of resources requested by a process :

- a) must always be less than the total number of resources available in the system.
- b) must always be equal to the total number of resources available in the system.
- c) must not exceed the total number of resources available in the system.
- d) must exceed the total number of resources available in the system.

42. To ensure that the hold and wait condition never occurs in the system, it must be ensured that :

- a) whenever a resource is requested by a process, it is not holding any other resources
- b) each process must request and be allocated all its resources before it begins its execution
- c) a process can request resources only when it has none
- d) All of these

43. Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?

- a) Resource allocation graph
- b) Starvation graph
- c) Inversion graph
- d) None of the mentioned

44. A system is in the safe state if:

- a) the system can allocate resources to each process in some order and still avoid a deadlock
- b) there exist a safe sequence
- c) both (a) and (b)
- d) none of the mentioned

45. Given a priori information about the _____ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

- a) minimum
- c) maximum

- b) average
- d) approximate

46. The wait-for graph is a deadlock detection algorithm that is applicable when:

- a) all resources have a single instance
- b) all resources have multiple instances
- c) both a and b
- d) none of the above

47. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is :

- a) 1
- b) 2
- c) 3
- d) 4

48. The two ways of aborting processes and eliminating deadlocks are : (choose all that apply)

- a) Abort all deadlocked processes
- b) Abort all processes
- c) Abort one process at a time until the deadlock cycle is eliminated
- d) All of these

49. Which of the following factors are responsible for choosing the process that has to be aborted:

- I. Priority of the process.
- II. Process is interactive or batch.
- III. How long the process has computed
- IV. How much more long before its completion
- V. How many more resources the process needs before its completion
- VI. How many and what type of resources the process has used
- VII. How many resources are available in the system

- a) I, II, III, IV, VI, VII
- b) I, II, III, IV, V, VI
- c) I, II, III, V, VI, VII
- d) all of these

50. If the resources are always preempted from the same process, _____ can occur.

- a) deadlock
- b) system crash
- c) aging
- d) starvation

Answers: 1) c. 2) c. 3) b. 4) b. 5) d. 6) b. 7) b. 8) c. 9) c. 10) b.

11) b. 12) d. 13) b. 14) b. 15) c. 16) c. 17) a. 18) b. 19) a. 20) a.

21) a. 22) b. 23) d. 24) b. 25) c. 26) d. 27) a. 28) b. 29) c. 30) a.

31) d. 32) c. 33) d. 34) d. 35) d. 36) d. 37) d. 38) a. 39) d. 40) d.

41) c. 42) d. 43) a. 44) c. 45) c. 46) a. 47) b. 48) a,c. 49) b. 50) d.