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Course Code: MCA-105

Course Name: Operating Systems with Linux

**Practice Questions (Theory)**

**A. Choose the correct option.**

1. The high paging activity is called ...
  - a) Inter process communication
  - b) Thrashing
  - c) Context switch
  - d) None of the above
  
2. The Hardware mechanism that enables a device to notify the CPU is called ...
  - a) Polling
  - b) Interrupt
  - c) System call
  - d) None of the above
  
3. In the running state, ...
  - a) only the process which has control of the processor is found
  - b) all the processes waiting for I/O to be completed are found
  - c) all the processes waiting for the processor are found
  - d) None of the above
  
4. Which of the following is crucial time while accessing data on the disk?
  - a) Seek time
  - b) Rotational time
  - c) Transmission time
  - d) Waiting time
  
5. Process state is a part of
  - a) Process control block
  - b) Inode
  - c) File allocation table
  - d) None of the above

6. Who is called a supervisor of computer activity?
  - a) CPU
  - b) Operating system
  - c) Control unit
  - d) Application program
  
7. Virtual memory is ...
  - a) An extremely large main memory
  - b) An extremely large secondary memory
  - c) An illusion of extremely large main memory
  - d) A type of memory used in super computers
  
8. The kernel keeps track of the state of each task by using a data structure called
  - a) Process control block
  - b) User control block
  - c) Memory control block
  - d) None of the above
  
9. Which of the following disk scheduling techniques has a drawback of starvation?
  - a) SCAN
  - b) SSTF
  - c) FCFS
  - d) LIFO
  
10. A binary semaphore ...
  - a) has the values one or zero
  - b) is essential to binary computers
  - c) is used only for synchronization
  - d) is used only for mutual exclusion
  
11. ... .. page replacement algorithm suffers from Belady's anomaly.
  - a) LRU
  - b) MRU
  - c) FIFO
  - d) LIFO
  
12. ... .. does the job of allocating a process to the processor.
  - a) Long term scheduler
  - b) Short term scheduler
  - c) Medium term scheduler
  - d) Dispatcher

13. In the multi-programming environment, the main memory consists of ... number of process.
- Greater than 100
  - Only one
  - Greater than 50
  - More than one
14. In a multithreaded environment, ...
- each thread is allocated with new memory from main memory
  - main thread terminates after the termination of child threads
  - every process can have only one thread
  - None of the above
15. Which of the following statement is not true?
- Multiprogramming implies multitasking.
  - Multi-user does not imply multiprocessing.
  - Multitasking does not imply multiprocessing.
  - Multithreading implies multi-user.
16. In the ... .. method of data transfer, the participation of the processor is eliminated during data transfer.
- Buffering
  - Caching
  - Direct memory access
  - Indirect memory access
17. A thread is a ... .. process.
- heavy weight
  - mutli-process
  - inter-thread
  - light weight
18. CPU Scheduling is the basis of ... .. operating system.
- batch
  - real time
  - Multiprogramming
  - Monoprogramming
19. A major problem with priority scheduling is ...
- Definite blocking
  - Starvation
  - Low priority

- d) None of the above
20. ... .. scheduler selects the jobs from the pool of jobs and loads into the ready queue.
- a) Long term
  - b) Short term
  - c) Medium term
  - d) None of the above
21. Saving the state of the old process and loading the saved state of the new process is called ...
- a) Context switch
  - b) State
  - c) Multi programming
  - d) None of the above
22. Resource locking ...
- a) allows multiple tasks to simultaneously use resource
  - b) forces only one task to use any resource at any time
  - c) can easily cause a dead lock condition
  - d) is not used for disk drives
23. The kernel of the operating system remains in the primary memory because ...
- a) it is mostly called (used)
  - b) it manages all interrupt calls
  - c) it controls all operations in process
  - d) it is low level
24. The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by ...
- a) editors
  - b) compilers
  - c) system call)
  - d) caching
25. Which of the following is not the state of the process?
- a) Blocked
  - b) Running
  - c) Ready
  - d) Privileged

**B. Answer the following questions in brief.**

1. What are the three main purposes of an operating system?
2. Discuss the services of operating system.
3. Describe the following types of operating systems:
  - a) Batch Operating System
  - b) Multi-Programmed Operating System
  - c) Time-Shared Operating System
  - d) Real Time Operating System
  - e) Distributed Operating Systems
4. What is Semaphore?
5. Describe different types of CPU scheduling algorithms.
6. What is deadlock? Discuss deadlock prevention and avoidance.
7. Explain paging and fragmentation.
8. Describe different types file access methods.
9. Discuss the working of different disk scheduling algorithms.
10. Explain RAID.