Short Questions

1. What is an operating system?
2. Name three essential functions of an operating system.
3. What is a Simple Batch System?
4. Define Multiprogrammed Batch Systems.
5. What is Time-sharing?
6. Name an example of a Time-sharing operating system.
7. What is a Personal Computer Operating System?
8. Name two popular Personal Computer Operating Systems.
9. Define Parallel Systems.
10. What is a Distributed System?
11. Give an example of a Distributed Operating System.
12. What are Real-Time Systems?
13. Name an example of a Real-Time Operating System.
14. What are the main components of an operating system?
15. Define the operating system kernel.
16. Name two types of user interfaces in operating systems.
17. What is a device driver?
18. What is a system call?
19. Name three services provided by operating systems.
20. What is the purpose of the file system in an operating system?

21. Define process in the context of operating systems.
22. What is virtual memory?
23. Name two scheduling algorithms used in operating systems.
24. What is a deadlock in operating systems?
25. Define a semaphore.
26. What is the purpose of an interrupt in operating systems?
27. Define paging in the context of memory management.
28. Name two types of file systems.
29. What is a shell in the context of operating systems?
30. Define spooling.
31. What is a page fault in virtual memory systems?
32. Name two security features provided by modern operating systems.
33. Define fragmentation in the context of file systems.
34. What is RAID in storage systems?
35. Name two types of backup strategies.
36. Define the term "context switch."
37. What is a file descriptor?
38. Define a process control block (PCB).
39. What is the purpose of the BIOS in a personal computer?
40. Name two types of system software.
41. What is the purpose of a device manager in an operating system?
42. Define the term "interrupt handler."

43. Name two types of user accounts in operating systems.
44. What is the role of the file allocation table (FAT) in file systems?
45. Define logical addressing in the context of memory management.
46. What is a command interpreter or shell?
47. Define a mutex in the context of synchronization.
48. What is the purpose of a file server in a networked operating system?
49. Name two types of system calls related to file management.
50. What is a fork bomb in the context of operating systems?
51. What is a process?
52. Define CPU scheduling.
53. What is the purpose of process scheduling?
54. Explain process states.
55. What is a context switch?
56. Define preemptive scheduling.
57. Explain the difference between a program and a process.
58. What is a PCB (Process Control Block)?
59. Define deadlock.
60. What are the essential operations on processes?
61. What is inter-process communication (IPC)?
62. Define a thread.
63. Explain the concept of cooperating processes.
64. What is a race condition?

65. Define a critical section.
66. What is mutual exclusion?
67. Explain the concept of a semaphore.
68. What is a thread-safe program?
69. Define scheduling criteria.
70. Explain CPU burst time.
71. What is turnaround time in scheduling?
72. Define response time.
73. What is the purpose of a ready queue?
74. Explain First-Come-First-Serve (FCFS) scheduling.
75. What is the main drawback of FCFS scheduling?
76. Define Shortest Job Next (SJN) scheduling.
77. What is priority scheduling?
78. Explain Round Robin (RR) scheduling.
79. Define Multilevel Queue Scheduling.
80. What is a time-sharing system?
81. Define System Call.
82. Explain the 'fork' system call.
83. What does the 'exit' system call do?
84. Define 'wait' system call.
85. Explain the 'exec' system call.
86. What is the purpose of the 'waitpid' system call?

87. Define process hierarchy.
88. What is a zombie process?
89. Define orphan process.
90. Explain the 'pthread_create' function.
91. What is thread cancellation?
92. Define inter-process communication (IPC).
93. Explain message passing in IPC.
94. What is a race condition in multi-threading?
95. Define the critical section problem.
96. Explain the purpose of a mutex.
97. What is a deadlock in multi-threading?
98. Define thread-safe code.
99. What is the main advantage of multi-threading?
100. Explain the concept of a thread pool.
101. What is a system model?
102. Define deadlock.
103. What are the four necessary conditions for deadlock?
104. How can deadlocks be characterized?
105. What are the methods for handling deadlocks?
106. What is deadlock prevention?
107. What is deadlock avoidance?
108. How does deadlock detection work?

109. Explain deadlock recovery.
110. What is the critical section problem?
111. What is synchronization hardware?
112. What are semaphores?
113. Name a classical problem of synchronization.
114. What is the purpose of critical regions?
115. Define monitors in the context of synchronization.
116. What is interprocess communication (IPC)?
117. How does IPC work between processes on a single computer system using pipes?
118. What is a FIFO in IPC?
119. How do message queues facilitate IPC?
120. Explain IPC using shared memory.
121. What is a system call in the context of IPC?
122. How does IPC work between processes on different systems?
123. What is a critical region in the context of synchronization?
124. Name an advantage of using semaphores for synchronization.
125. What is the purpose of the hold and wait condition in deadlock?