UNIT I

1. What is an Operating system? Explain the main purpose of an operating system?

2. What are the functions of an Operating System?

3. What are the advantages of an Operating System?

4. Explain different types of operating system in brief.

5. Explain batch operating system. Write its advantages.

6. Explain time-sharing operating system. Write its advantages.

7. What is a multiprogramming operating system?

8. What is a Real time operating system?

9. What are the advantages and disadvantages of multiprogramming?

10. What are the advantages and disadvantages of Real Time Operating System?

11. What are the advantages and disadvantages of Distributed Operating System.

12. What is a distributed operating system?

13. Explain types of distributed operating system.

14. What is a system call?

15. Explain different types of system calls.

16. What is a process?

17. What is process management?

18. What is context switch?

19. Compare different types of schedulers.

20. What is CPU burst?

21. Explain:

    1) Throughput

    2) Turnaround Time

    3) Waiting time

    4) Response Time

22. What is CPU scheduling?

23. What is Preemptive scheduling?

24. What is non-preemptive scheduling?

25. Explain priority scheduling and its characteristics.

Long

1. What is an operating system? Explain its functions.

2. Explain batch operating system. Write its advantages and disadvantages with example.

3. Explain multitasking operating system. Write its advantages and disadvantages with example.

4. What is multiprogramming operating system. Write its advantages and disadvantages with example.

5. Explain Real time operating system. Write its advantages and disadvantages and types with example.

6. What is a distributed operating system? Write its advantages and disadvantages.

7. Explain all the services provided by Operating system.

8. Explain process life cycle.

9. What are system calls? Why do we need system calls in OS? Explain with example?

10. Explain process control block.

11. What is process scheduling? Explain process scheduling queues.

12. What are schedulers? Explain different types of process schedulers.

13. What is a process? Explain its layout inside main memory? Also explain its management.

14. Why do we need scheduling? Explain CPU scheduling criteria.

15. Explain any three types of scheduling algorithms briefly.

16. Explain FCFS scheduling algorithm with example.

17. Explain SJF scheduling algorithm with example.

18. Explain STRN scheduling algorithm with example.

19. Explain round robin scheduling algorithm with example.

20. What is priority scheduling? Explain types and characteristics of priority scheduling.

21. Explain multilevel queue scheduling algorithm.

22. Explain event driven scheduling algorithm with example.

23. What is CPU burst? Explain I/O burst cycles.

24. Explain peer-to-peer operating system.

25. Explain client server operating system.

OTHER QUESTIONS

1. Discuss the role of operating system.

2. Discuss the various scheduling technique of operating system.

3. Explain various directory structure used in operating system for storing files give its merits and demerits?

4. How File System is organized with UNIX? Explain with an example.

5. Explain the following:
   i.   Multitasking
   ii.   Real time operating system
   iii. Distributed system

6. Describe the shortest–job-first scheduling algorithm.

7. Discuss the structure of directory and its implementation in detail.

8. Describe Directory Structure of a file system.

9. Describe the need for device management.

10. Explain the different methods for allocating disk space to files.

11. Explain 'File Concept'. What are the different operations performed on files.

12. Write four optimizing criteria for CPU scheduling.

13. What is system calls? Give several examples of system calls.

14. What is Process Control Block?

15. What do you mean by process? Discuss its states in brief.

16. Define the difference between preemptive and non-preemptive scheduling.

17. Discuss file attributes in brief.

18. What are the three main purposes of an operating system?

19. What do you understand about process scheduling? Why is it important? Explain various process scheduling techniques with example.

20. What constitutes a state of a system? What is safe state describe an algorithm to check whether a given state is safe or not?

21. What is round robin scheduling? Explain taking an example.

22. What are the mechanisms to evaluate an algorithm related to CPU scheduling? Discuss any one of them.

UNIT II
Short

1. What do you understand by process?

2. What is inter-process communication?

3. Explain Message passing model in inter process communication.

4. Explain shared memory system in inter process communication.

5. What is a Deadlock?

6. How can you prevent a deadlock?

7. How can we avoid a deadlock?

8. How can we detect a deadlock has occurred?

9. How can we recover data if it is deleted because of a deadlock?

10. What do you understand by address binding?

11. What is difference in physical and logical address binding?

12. What is meant by Swapping?

13. What is contagious memory allocation?

14. What is concept of partitioned memory?

15. What do you mean by Fragmentation?

16. What is the difference between internal and external fragmentation?

17. Describe Non-contagious memory allocation.

18. Describe Paging.

19. Describe Segmentation.

20. Explain difference between Paging and Segmentation.

21. Give example of deadlock state.

22. Give an example of Paging.

23. Give an example of Segmentation.

24. Describe Shared memory system with an Example.

25. Describe Message passing model with an example.

26. Describe deadlock in brief.

Long

1. Explain inter process communication and describe its type in detail.

2. Explain deadlock with prevention, detection, avoidance and recovery.

3. Explain logical and physical address binding in detail.

4. Explain contagious and non-contagious memory allocation.

5. Explain internal and external fragmentation in detail.

6. Explain Paging in detail.

7. Explain Segmentation in detail.

8. Is Non-contagious memory allocation is better than contagious memory allocation? Give reason.

9. Describe Paging and Segmentation in Detail.

10. How can we characterize a deadlock?

OTHER QUESTIONS

1. What is deadlock?

2. What is a Deadlock? How it is detected? What are the necessary conditions for a deadlock to occur?

3. Describe the dining-philosopher's problem and provide its solution.

4. What is the critical section problem? What are its various solutions?

5. Explain Semaphores?

6. What is Deadlock Detection? Explain how to recover from deadlock?

7. Define mutual exclusion.

8. What is virtual memory? What hardware supports are needed to implement virtual memory?

9. What are condition that lead to deadlock.

10. Explain critical section problem and discuss various algorithm to solve synchronization problem. List advantages and disadvantages of each.

11. What is virtual memory?

12. What is swapping?

13. What constitutes a state of a system? What is safe state describe an algorithm to check whether a given state is safe or not?

14. What is Swap Space Management?

15. What is boot strapping?

16. Explain the difference between spooling and buffering.

17. Discuss banker's algorithm in detail. Also provide an example for the same.

UNIT III

Short

1. What do you understand by Demand Paging?

2. What are the basic concepts of Demand Paging?

3. Write short note on Page Fault.

4. Explain FIFO Page Replacement Algorithm.

5. Explain LRU Page Replacement Algorithm.

6. Explain Optimal Page Replacement Algorithm.

7. Write short note on Thrashing.

8. Explain Page-Fault Frequency.

9. Explain Disk Structure.

10. Explain contiguous & non-contiguous allocation strategies.

11. What are the Security Problem of a computer system?

12. How many levels are required to take security measures to protect a system?

13. What are Program Threats explain?

14. What are System and Network Threats?

15. What do you understand by Authentication? What are the methods of Authentication?

16. Explain Security Policy.

17. Explain dedicated devices & shared devices.

18. What is disk scheduling algorithm? Name different types of disk scheduling algorithm.

19. Explain FCFS Scheduling.

20. Explain SSTF Scheduling.

21. Explain SCAN Scheduling.

22. Explain C-SCAN Scheduling.

23. Explain LOOK Scheduling.

Long

1. What is demand paging? Explain basic concepts of demand paging.

2. What is page replacement also explain FIFO page replacement algorithm?

3. What is thrashing? What are causes of Thrashing?

4. What is disk scheduling? Explain FCFS Scheduling, C-Scan Scheduling & Look Scheduling.

5. Explain the following Scheduling algorithms.

6. A) SSTF   B) SCAN

7. Explain security problem with the security measures we must take to protect a system.

8. Briefly explain device management also explain dedicated devices & shared devices.

9. Explain program threat & viruses.

10. What are system and network threats? Explain Worms.

11. Explain authentication and types of authentication techniques briefly.

OTHER QUESTIONS

1. What is disk scheduling?
2. Discuss FCFS, SCAN, and CSCAN DISK scheduling algorithm.
3. What is the difference between dedicated and virtual devices?
4. Discuss the following disk scheduling algorithm with example • Scan • Look
5. What is disk scheduling? What are its main objectives?
6. Discuss Contiguous, Linked, Indexed disk block allocation method with their merits and demerits.
7. What is file allocation table?
8. Explain the structure of inverted page table?

UNIT IV

Short/Long

1. What are Needs and Advantage of Computer Networks?

2. Define LAN, WAN and MAN?

3. Define Server based, Peer and Hybrid networks?

4. Define the following topology (any 3)

1. Bus
2. Star
3. Ring
4. Star ring
5. Mesh.

5. What is guided Media?

6. What is unguided media?

7. Explain different types of network in detail?

8. Explain network topology in detail?

9. Explain different types of transmission Media with examples?

10. What is Digital signaling and analog signaling?

11. What is OSI model?

12. What is TCP/IP model?

13. With a neat diagram, explain OSI reference model.

14. What are the objectives of computer communication networks? What are the network components? Explain.

15. Explain the bus type topology and ring type topology networks. Compare their performance.

16. Explain the applications of computer networks.

17. Explain the various media used for data transmission in computer networks.

18. Explain network architecture in detail

19. Define Data communication

20. What are the five important components of data communications?

21. What are the various forms of data?

22. What are the various types of data flow?

23. List two advantages of layering principle in computer networks.

24. With the example define half duplex communication.

25. Name four topologies of computer networks.

26. Suggest two points to improve the performance of network.

27. Define Distributed Systems and Distributed Processing

28. What are the design factors for transmission media?

29. Define Network architecture

30. Why are protocols needed and what are the key elements?

31. Define Topology.

32. Define OSI model and what are the seven layers of OSI Model?

33. Explain ISO/ OSI reference model with neat diagram

34. What is meant by topology? Explain the topologies of the network.

35. Explain the categories of networks.

36. What are the responsibilities of network layer?

37. What are the duties of the transport layer?

38. What is the difference between network layer delivery and the transport layer delivery?

39. Explain the duties of transport layer.

40. Explain the function of TCP/IP protocol.

41. Explain the design issues of data link layers.

42. Describe the structure of network layer in the internet.

43. Discuss the services offered by the application layer.

44. Write short notes on the following a. World wide web b. High speed LANs.

Unit – V

Short/Long

1. What is difference between active and passive hub?

2. What are different types of Bridges?

3. What is ISP?

4. What is IP?

5. What is DNS and URL?

6. What is ftp and NNTP?

7. How to send and receive e-mail?

8. What is SMTP?

9. Explain any five networking devices in brief?

10. What are the advantages and disadvantages of circuit switching?

11. What are the advantages and disadvantages of packet switching?

12. What are different layers of internet?

13. What is a bridge? What are the functions of bridges?

14. What is a loop problem in bridges?

15. How does a given bridge learn whether it should forward a multicast frame over a given port?

16. What are the limitations of bridges?

17. In what way bridges differs from switches?

18. Discuss the TCP connections needed in FTP.

19. Discuss the basic model of FTP.

20. What is the function of SMTP?

21. Define Routers.

22. How the routers get the information about neighbor?

23. Define IP address.

24. Define Gateway.

25. Explain IP addressing method.

26. Define routing & explain distance vector routing and link state routing.

27. Define Routers and explain the type of routers.

28. Name four factors needed for a secure network.

29. How is a secret key different from public key?

30. What is a digital signature?

31. Define substitution & transposition encryption.

32. What is meant by cryptography?

33. Explain the functions of SMTP.

34. Write short notes on FTP.

35. Explain about HTTP.

36. Explain the WWW in detail.

37. Explain the type of Conventional encryption/decryption method.

38. Write short notes on a. Packet Switching b. Message Switching c. Circuit Switching

39. What is the use of switches?

40. Differentiate circuit switching and packet switching.

41. Define IP.

42. Explain bridges and switches in brief.

43. Write short notes about repeaters, routers and gateways.