Important Question Bank-2010

9115 – Operating System

CHAPTER-1 : INTRODUCTION

1. What is mean by Operating System? Write difference between multitasking and multiprogramming.
2. Explain following terms
    a. Multiprocessor systems. ii) Distributed systems. ii) Clustered Systems.
3. What is Operating System? Explain the concept of time sharing.
4. Differentiate between sequential and batch processing.
5. Differentiate between multitasking and multiprogramming.
6. State real time and multiprocessor system.
7. Explain generations of operating system.
8. Explain each operating structure in detail with the help of suitable diagram
9. What is spooling and Buffer describe both.
10. State the hardware requirements for multiprogramming operating system.
11. State real time and multiprocessor system.
12. Explain Batch Monitoring functions.
13. What is multitasking operating system? State advantages of multitasking operating system.
14. State and explain six major components of systems.
15. What are the parts of computer system. Explain with the help of diagram.
16. Explain multi-processor system in detail.
17. Describe real time systems. State any two examples of its applications.
18. Explain distributed system in detail,

CHAPTER-2 : OPERATING SYSTEM STRUCTURE

1. Write different types of Operating System structure. Explain any two in detail.
2. State and explain different Operating System services.
3. What is mean by system call? Write system calls for process control?State use of system call
4. Explain file management.
5. Explain with suitable diagram layered and monolithic operating system structures.
6. What is booting? What are the steps involved in booting.
7. Explain the concept of device management.
8. Compare monolithic kernels with microkernel's
9. What is booting? Explain the concept of device management.
10. Write any four services provided by operating system.
11. What is a system call ? Enlist any four system calls related to files.
12. Describe device management of operating system.
13. Describe layered approach to system design. Also write its advantages and disadvantages.
14. What is the purpose of system calls ? State two systems calls with its functions.
15. Explain one to one multithreading model of operating system.
16. Explain the I/O system management component of OS. State different function required in I/O system management.
17. Explain following operating system structure in detail.
    1. Monolithic ii) Microkernel

CHAPTER-3 : PROCESS MANAGEMENT

1. Explain process & block with suitable diagram.
2. Define thread. State the benefits of threads.
3. State and explain different process states.
4. Explain in detail multithreading models with suitable example.
5. State and explain operations on processes.
6. State the concept of mutual exclusion.
7. Write in brief about threading and list Its advantages.
8. Explain process control block? Draw Neat Diagram for the same
9. Explain Inter process communication in detail
10. What is a process scheduler ? Write in brief about the priority scheduling method for scheduling processes. State its advantages over the Round Robin method of process scheduling
11. What are the benefits of multithreading.
12. Explain process management in detail.
13. State and explain any four process states.
14. State and explain multithreading models with diagram.
15. Explain different process scheduling criteria.
16. What is process ? How is it different from a program?
17. Draw process state diagram and state its meaning.
18. What is a thread ? Explain many-to-many threading model with sample diagram.
19. What process management ? State four function to be performed by OS for process management.
20. What is process ? Explain process indetail with the help of state diagram.
21. Explain process termination in detail.

CHAPTER-4 : SCHEDULING

Q1. Explain Round Robin (RR) scheduling algorithm with suitable example.
Q2. What is Deadlock? How to prevent Deadlock?
Q1. State the concept of mutual exclusion.
Q2. What do mean by scheduler? State types of scheduler.
Q3. Explain concept of critical region and Deadlock handling.
Q4. Differentiate between Pre-emptive and Non-emptive scheduling.
Q5. Explain CPU and I0 Burst cycle with suitable diagram.
Q6. Solve the following problem

Processes	Burst Time
1	27
2	6
3	3

by using following scheduling algorithms

i. i) FCFS. ii)SJF iii) Round Robin.

Q1. Solve the following problem

Processes	Burst Time
1	25

2	8
3	10
4	30
5	20
6	25

by using following scheduling algorithms

i) FCFS. ii)SJF iii) Round Robin.

Q2. What is FCFS algorithm ? Explain with example

Q3. Describe the priority process scheduling algorithm.

Q4. Describe the difference between short term, medium and long term scheduling.

Q1. What is deadlock? What are the conditions for deadlocking?

Q2. State and explain criteria in Cpu scheduling.

Q3. Explain Direct methods of deadlock preventions in detail.

Q4. What is FCFS algorithm? Explain with example.

Q1. Describe the shortest job first scheduling method. Illustrate with example.

Q2. Solve the following problem by using following scheduling algorithm.

Processes	**Burst Time**
P1	5
P2	15
P3	12
P4	25
P5	5

i) SJF ii)FCFS

Q1. Explain the pre-emptive and non-pre-emptive type of scheduling. State when pre-emptive and non pre-emptive scheduling should be used.

Q2. Consider the following set of processes with the length of the Cpu burst time given in milliseconds.

Process	Burst time	Priority
P11	20	4
P12	6	1
P13	15	2
P21	8	3
P22	12	2
P23	5	4

Find the waiting time for each process using the SJF algorithm.

Q3. Compare the FCFS and SW scheduling algorithms with respect to following:

i. Turn around lime ii) Waiting time iii) Through put

Q1.Explain the concept of mutual exclusion and in detail.

Q2.List scheduling algorithms. Explain any two with example.

Q3.Explain Bankar's algorithm for deadlock prevention.

Chapter-5 : File System and Memory Management

1. Explain the following terms.
2. Sequential access method. ii) Direct access method.
3. What is Virtual Memory? Explain the concept of Paging.
4. Explain the following terms.
5. First in First Out (FIFO). ii) Least Recently Used (LRU).
6. Explain any two allocation methods.

7. Explain concept of swapping with diagram.
8. Differentiate between the following terms
9. i)Contiguous and Linked allocation. ii) Linked and indexed allocation.
10. Explain different free space management techniques.
11. Explain the FIFO, Optimal and LRU page replacement algorithm for the reference string, 7 0 1 2 0 3 0 4 2 3 1 0 3.

12. Describe the contiguous allocation methods for file. State its any two merits and demerits.
13. Consider a swapping system in which memory consists of the following hole sizes in memory order: 10KB, 4KB, 20KB. 18KB, 7KB, 9KB. 12KB and 15KB. Which hole is taken for successive segment requests for (1) 12 KB, (2) 10KB, (3) 9 KB for first fit, best fit and worst fit

14. Explain basic memory management techniques like Partitioning, Fixed &Variable.
15. Explain static and dynamic memory partitioning with advantages and drawbacks.
16. Explain page replacement algorithms with their advantages and disadvantages.
17. Explain following memory allocation methods
18. (i) Contiguous (ii) Linked (iii) Indexed
19. Explain resource request algorithm with example.
20. State the rules for naming files. How is file security achieved?
21. What are the different responsibilities of memory management ? Explain.

22. Explain the tree structured directory system used for files with diagram.
23. Explain the least recently used page replacement algorithm used in memory management.
24. Compare the paging and segmentation memory management techniques.
25. Explain the six file operations performed by the OS for a disk file.
26. List system component. Explain file management in details.
27. Mention memory allocation methods. Explain any one.
28. What is Partioning ? With neat diagram explain variable memory Partioning technique. Also state its advantages.
29. What is file ? List and explain attributes of files.

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