

1. Distinguish between internal and external fragmentation
2. Differentiate between paging and segmentation

	INTERNAL FRAGMENTATION	EXTERNAL FRAGMENTATION
Definition	The difference between memory allocated and required space or memory.	The unused spaces formed between non-contiguous memory fragments are too small to serve a new process.
Sized memory	fixed-sized memory blocks.	variable-sized memory blocks.
Happens	When the method or process is larger than the memory.	When the method or process is removed.
Solution of external fragmentation	Best-fit block.	Compaction, paging and segmentation.

Basis	Paging	Segmentation
Division of program	The program is divided into fixed-size pages in paging.	Program is divided into the variable-size partition in segmentation.
Speed	Paging is faster than segmentation.	Segmentation is slower than paging.
Fragmentation	Internal fragmentation.	External fragmentation.
Protection	Very difficult to apply for protection in paging.	Easier to apply protection in segmentation.
Handling of data structure	Difficult to handle the data structure.	Segmentation efficiently handles the data structure.
Visibility to the user	It is not visible to the user.	It is visible to the user.
Accountability	The operating system is accountable for paging.	Compiler is accountable here.
Determining the size	Hardware determines the page size.	The user determines the section size.
Storing the type of data	Page table stores page data.	Section table stores section data.
Sharing	Difficult to share the procedures between processes.	Easier to share the procedures between processes.

3. Explain segmentation with an example
4. Explain Paging with example.
5. Explain the different techniques to structure the page table.
Hierarchical
Inverted
Hashed
6. Explain contiguous and non-contiguous memory allocation in detail.
7. Explain fragmentation, swapping, demand paging

8. Consider the following page reference string 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6 Find out the number of page faults if there are 4 page frames, using the following page replacement algorithm i) LRU ii) FIFO iii) Optimal

9. Differentiate between the following a) Paging and Segmentation b) Page table and segment table

10. Explain Belady's anomaly and thrashing.
11. Explain any two page replacement algorithms
12. Explain the best fit, first fit and worst fit algorithm
13. Explain virtual memory .
14. Explain the different IPC mechanisms available in Linux system
15. Discuss about scheduling in Linux system.
16. Explain the components of Linux system with a neat diagram.
17. Discuss structure of page table with suitable diagram.
18. Discuss the various directory structures with suitable diagrams
19. Explain the various operations performed on files.
20. What is Thrashing? How it can be controlled?
21. Describe the different Linux Kernel modules.