

- Note: i) All questions are compulsory.  
ii) Draw neat diagram wherever needed.  
iii) Figures to right indicate full marks.

- Q.1 Attempt any two.** (10)  
a) Define Operating system and Explain Structure of Computer System.  
b) Explain Clustered Operating System with advantages and disadvantages.  
c) Explain Role of compiler with its different phases.  
d) Write Short note on Linker and loader.
- Q.2 Attempt any two.** (10)  
a) What are the different operating system services?  
b) Explain layered structure of operating system.  
c) Explain work of kernel in detail.  
d) What are the different types of system calls?
- Q.3 Attempt any two.** (10)  
a) Difference between process and threads.  
b) Explain Producer consumer problem.  
c) What are the benefits of multithreading?  
d) Explain different types of scheduler.
- Q.4 Attempt any two.** (10)  
a) Explain Concept of Demand paging.  
b) Write a short note on segmentation.  
c) Calculate page fault for following reference string using LRU page replacement algorithm.  
7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1  
d) Write a short note on logical v/s physical address space.
- Q.5 Attempt any two.** (10)  
a) Write short note on File mounting.  
b) Explain deadlock with its four necessary conditions.  
c) Explain file operations.  
d) Explain concept of NFS Protocol.
- Q.6 Attempt any two.** (10)  
a) Explain Application IO interface.  
b) Explain Domain structure.  
c) Explain Different types of virus.  
d) Write short note on worm.



Q.7 Attempt any three.

(15)

- a) Difference between compiler and interpreter.
- b) Explain System boot process.
- c) Calculate turnaround time according to SJF preemptive and non preemptive algorithm.

Process	Burst Time	Arrival time
P1	5	0
P2	2	1
P3	8	2
P4	4	3

- d) Write a short note on swapping
- e) Explain Resource allocation graph.
- f) Explain Access Control Matrix.

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