

## Previous year Question paper questions

1. What are semaphores? Explain two primitive semaphore operations. What are its advantages? Jun 15/jan16
2. Explain any one synchronization problem for testing newly proposed sync scheme Jun 14/jun16
3. Explain three requirements that a solution to critical –section problem must satisfy. Jun 15/ Jun 16
4. State dining PHILOSOPHER'S problem and give a solution using semaphores. Write structure of philosopher. Jun 15
5. What do you mean by binary semaphore and counting semaphore? With C struct, explain implementation of wait() and signal. Jun 14/Jan 14. Semaphore as General Synchronization Tool. Jun 14/Jan 15
6. Describe term monitor. Explain solution to dining philosophers. Jun 14.
7. Explain synchronization? Jun 14/Jan 15
8. What are semaphores? Explain solution to producer-consumer problem using semaphores Jan 16

## Module 3

- 1) What is paging and swapping? Jun 15/Jan 16
- 2) With a diagram discuss the steps involved in handling a page fault? Jun 14
- 3) What is address binding? Explain the concept of dynamic relocation of addresses? Jun15
- 4) Define external fragmentation? what are the causes? Jun 14/ Jan 15
- 5) what is paging ?explain the paging hardware? Jun 15/Jan
- 6) Memory partitions of 100kb,500 kb,200 kb,300kb,600 kb are available how would best worst, first fit algorithm to place processes 212,417,112,426 in order. Which is the best algorithm? Jun16/Jan 14

Soln.

First fit

100	212	112	176		200		300		417	183
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There is no free space to insert 426.

Best fit

100		417	83	112	88	212	88		426	170
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Worst fit

100		212	288		200	112	300		417	183
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There is no free space to insert 426.

**7. Differentiate between internal and external fragmentation? Jun15/Jan 15**  
**8. consider the reference stream 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. how many page faults while using fcfs and lru? Jun 14**

**9. What are the methods of handling the page faults? Jun 16**

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### **Module 2 Process Synchronization**

1. What do you mean by process synchronization?
2. What are the requirements for critical section problem.
3. Give solution to the critical section problem
4. Explain semaphores in detail
5. Explain producer-consumer problem.
6. Explain Readers-Writers problem and its solution using semaphores.
7. State dining philosophers problem and give a solution using semaphores. Write structure of philosopher i.
8. What do you mean by binary semaphore and counting semaphore? With C struct, explain implementation of wait() and signal().
9. Describe term monitor. Explain solution to dining philosophers problem using monitor.
10. What are semaphores? Explain solution to producer-consumer problem using semaphores.
11. What are monitors? Explain in detail with its appropriate syntax.

### **Module 3 Memory management**

1. What is paging ? Give advantages and disadvantages.
2. What is segmentation? Give advantages & disadvantages.
3. Differentiate between paging & segmentation.
4. What are the different methods of implementing page table?
5. How can you ensure protection & sharing in paging?
6. What is fragmentation? Explain different types of fragmentation.
7. Explain swapping .
8. How to satisfy a request of size n from a list of free holes? Explain.
9. Explain the following:  
a) privileged instruction      b) transient code      c) 50-percent rule  
d) Roll in, roll out      e) Compaction
10. How can you ensure hardware address protection with base & limit registers?
11. Explain address binding using base & limit registers.
12. What is dynamic loading ? Give advantages.
13. Explain the following:  
a) Frame table      b) Hit ratio      c) Re-entrant code      d) Legal page      e) TLB
14. Give a brief idea on dynamic linking & shared libraries.
15. Write a note on virtual memory
16. Explain demand paging
17. Write a note on thrashing
18. What is Belady's anomaly. Describe the working set model.

19. Explain the need of page replacement algorithms.
20. What is frame allocation policy.