



III Semester B.C.A. Degree Examination, November/December 2017  
(CBCS) (F + R) (2015-16 and Onwards)  
BCA 305 : OPERATING SYSTEMS

Time : 3 Hours

Max. Marks : 100

**Instruction:** Answer *all* Sections.

SECTION – A

Answer **any ten** questions :

(10×2=20)

1. What are the main functions of operating system.
2. What is Convoy effect ?
3. Differentiate process and program.
4. What is mutual exclusion ?
5. What are the necessary conditions for deadlock ?
6. What is compaction ?
7. Define virtual memory.
8. What is demand paging ?
9. Mention any four file operations.
10. Define seek time.
11. Write any two antivirus softwares.
12. What is disk formatting ?

SECTION – B

Answer **any five** questions :

(5×5=25)

13. Explain time sharing system.
14. What is system call ? Explain types of system calls.



15. Explain different process states with a neat diagram.
16. What is semaphore ? Explain different types of semaphores.
17. Explain Banker's algorithm.
18. Explain the terms first-fit, best-fit and worst-fit.
19. Explain LRU page replacement algorithm with an example.
20. What is virus ? Explain different types of viruses.

### SECTION – C

Answer **any three** questions :

(3×15=45)

21. a) Explain different types of schedulers.  
b) Explain FCFS and Round Robin scheduling algorithms with example. (7+8)
22. a) Explain different methods of deadlock prevention.  
b) Explain Dining-Philosophers problem. (8+7)
23. a) Write a note on segmentation.  
b) Explain any three disk scheduling algorithms with example. (7+8)
24. a) Write a note on file allocation methods.  
b) Explain various file accessing methods. (8+7)
25. a) Explain user authentication in detail.  
b) Write a note on fragmentation. (7+8)

### SECTION – D

Answer **any one** question :

(1×10=10)

26. Write short notes on :
  - a) Multilevel queue scheduling.
  - b) Operating system components. (5+5)
27. Write short notes on :
  - a) Overlays.
  - b) Optimal page replacement algorithm. (5+5)