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 :

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 :

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: \[3 \times 15 = 45\]

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: \[1 \times 10 = 10\]

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. \[5 + 5\]