



**III Semester B.C.A. Degree Examination, November/December 2013
(Y2K8 Scheme) (F+R)
BCA 304 : OPERATING SYSTEMS**

Time : 3 Hours

Max. Marks : 90/100

- Instructions :**
- i) Answer **all** questions.
 - ii) Section **D** is applicable only to students who have taken admission in **2012-13** onwards.
 - iii) **100** marks for students of 2012-13 and onwards.
 - iv) **90** marks for repeater students prior to 2012-13.

SECTION – A

Answer **any 10** questions.

(10×2=20)

1. Define time sharing system.
2. What is a cooperating process ?
3. Define long term and short term schedules.
4. What is meant by mutual exclusion ?
5. What does a wait for graph represent ?
6. Give pictorial representation of circular wait condition in a deadlock state.
7. Define logical and physical address.
8. What is hit ratio ?
9. List any 4 different types of file.
10. What is a bit vector ?
11. What are the goals of protection ?
12. Define seek time.

SECTION – B

Answer **any 5** questions.

(5×5=25)

13. Explain spooling with neat diagram.
14. Give a brief note on various CPU scheduling criteria.
15. Explain the Resource-Allocation graph.
16. Differentiate between internal and external fragmentation.



17. What is segmentation ? What are its advantages and disadvantages ?
18. Explain neatly the different directory structures.
19. Explain indexed sequential access method in accessing a file.
20. Describe the frame allocation algorithms.

SECTION – C

Answer **any 3** questions.**(15×3=45)**

21. a) Explain the functions of an operating system. **7**
b) Explain the FCFS and priority CPU scheduling algorithms with an example each. **8**
22. a) Explain how do you evaluate the CPU scheduling algorithms. **10**
b) Write Peterson's algorithm for mutual exclusion problem. **5**
23. a) Write the necessary conditions for the occurrence of a deadlock. How to prevent deadlock ? **10**
b) How is memory protection given in memory management system with neat diagram ? **5**
24. a) Explain segmentation. **8**
b) Describe multi programming with fixed-size partitions. **7**
25. a) Explain any two page replacement algorithms with an example each. **8**
b) Explain the various disk scheduling algorithms. **7**

SECTION – D

Answer **any 1** question.**(10×1=10)**

26. Write short notes on :
 - i) Paging **5**
 - ii) PCB **5**
 27. Write short notes on :
 - i) File allocation methods
 - ii) Semaphore
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