

**15U668**

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Name: .....

Reg. No.....

**SIXTH SEMESTER B.C.A. DEGREE EXAMINATION, MARCH 2018**

(CUCBCSS - UG)

**CC15U BCA6 B15 - OPERATING SYSTEMS**

Computer Application – Core Course

(2015 Admission)

Time: Three Hours

Maximum: 80 Marks

**Part A**

Answer *all* questions. Each question carries 1 mark.

1. The interval from the time of submission of a process to the time of completion is termed as \_\_\_\_\_
2. Give an example of time sharing operating system.
3. A parent process calling \_\_\_\_\_ system call will be suspended until children processes terminate.
4. To avoid race condition, the maximum number of processes that may be simultaneously inside the critical section is \_\_\_\_\_
5. For Optimal page replacement algorithms with 3 frames, the number of page fault is:
6. A file control block is also known as \_\_\_\_\_
7. An example for disk scheduling policy is \_\_\_\_\_
8. Data structure used for free space management is \_\_\_\_\_
9. Give an example for non-preemptive scheduling algorithm
10. \_\_\_\_\_ is a piece of code which only one process executes at a time.

**(10 x 1 = 10 Marks)**

**Part B**

Answer *all* questions. Each question carries 2 marks.

11. Why an operating system can be viewed as a resource manager?
12. Define a PCB.
13. What are the different file attributes?
14. What is a device directory?
15. Differentiate logical and physical address space.

**(5 x 2 = 10 Marks)**

**Part C**

Answer any *five* questions. Each question carries 4 marks.

16. Distinguish between Real time and Time sharing systems.
17. Write an algorithm to implement mutual exclusion using Test and Set () instruction.

18. What is a deadlock? What are the conditions necessary for deadlock?
19. Briefly discuss about the file accessing methods.
20. Discuss about any one of the classical problem of Mutual exclusion.
21. Explain the various techniques for device management.
22. Define the states of a process with a neat diagram.
23. What is thrashing? Explain the working set model.

**(5 x 4 = 20 Marks)**

#### **Part D**

Answer any *five* questions. Each question carries 8 marks.

24. Explain the different types of operating systems.
25. Explain deadlock detection and deadlock avoidance with necessary algorithms.
26. What are the different scheduling criteria's? Explain any preemptive scheduling and non-preemptive scheduling algorithms.
27. Explain in detail various disk scheduling strategies.
28. What is page replacement? Explain any two page replacement algorithms with examples.
29. What is demand paging? Explain the basic concept and performance of demand paging.
30. Explain with the help of necessary diagrams file system and directory implementation.
31. Compare and contrast segmentation and paging.

**(5 x 8 = 40 Marks)**

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