

C.B.C.S.S B.Sc Degree Examination, April 2010

Fourth Semester
Computer Science

Core – Operating Systems

Time : Three Hours

Total Weight : 25

Part A

Answer all questions

Each bunch of four questions carries a weight of one

Fill in the Blanks:

- I) 1. Distributed systems depend on _____ for their functionality.
2. A process is represented in the operating system by a _____.
3. The string of memory references is called a _____.
4. The _____ brings all the file block pointers together in to one location called index block.
- II) 5. Multiprogramming increases _____ by organizing jobs.
6. The segment of code in which a process may be changing a common variable is called a _____.
7. _____ is a memory management scheme that supports user's view of memory.
8. In a _____ directory all files are contained in the same directory.
- III) 9. The Operating system structure with a small kernel is called
(a) monolithic (b) layered (c) microkernel(d) none of these
10. When the process is waiting to be assigned to a processor it is in the state called
a) waiting b) ready c) new d) running
11. Choose the one which is not contained in a Process Control Block?
a) process state b) program counter c) instruction set d) registers
12. Which scheduling algorithm is especially designed for time sharing systems
a) round robin b) FIFO c) LRU d) SRTF
13. When a semaphore can have integer values ranging over an unrestricted domain it is called
(a) binary (b) integer (c) decimal (d) counting
14. Banker's algorithm is used for
a) mutual exclusion b) finding shortest path c) deadlock prevention d) dead lock avoidance
15. The memory allocation scheme which allocates the smallest hole that is big enough is called
a) first fit b) best fit c) worst fit d) smallest fit
16. The high paging activity is called
a.) demand paging b.) page out c.) page in d) thrashing

Part B

*Answer five questions out of eight
Each bunch of four questions carries a weight of one*

17. Describe batch processing.
18. What is POST?
19. What is meant by file control block?
20. How is bit vector used to manage free sapce?
21. What is internal fragmentation?
22. Write about SJF scheduling?
23. What is a short term scheduler?
24. What is Belady's anomaly?

Part C

*Answer four questions out of six
Each bunch of four questions carries a weight of two*

25. Compare and contrast a multiprogramming system and a time sharing system.
26. What are the CPU scheduling criteria. Explain.
27. Explain the necessity of mutual exclusion.
28. Briefly explain the various file operations.
29. Explain tree structured directories.
30. Write note on MACROS?

Part D

*Answer two questions out of three
Each bunch of four questions carries a weight of four*

31. Explain any five CPU scheduling algorithms?
32. What is deadlock? What are the necessary conditions? Which are the methods of prevention?
33. Explain the different types of operating systems?