

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2013

(CCSS)

Computer Science

CS 6B 21—OPERATING SYSTEM

Time : Three Hours

Maximum : 30 Weightage

I. Answer all 12 questions. (12 x ¼ = 3 weights)

1. The operating system of a computer serves as a software interface between the user and the _____.
 - a. Software
 - b. Hardware
 - c. Peripheral
 - d. Memory
2. Say true or false : Windows operating is an example of Batch systems.
3. Which of the following is characteristic of an OS?
 - a. Resource management
 - b. Error management
 - c. Memory management
 - d. All of the above
4. Which of the following is not an advantage of multiprogramming?
 - a. Increased throughput
 - b. Shorter response time
 - c. Ability to assign priorities to jobs
 - d. None of the above
5. A thread is a _____ process
 - a. Multiple
 - b. Heavy weight
 - c. Inter thread
 - d. Light weight
6. The dispatcher,
 - a. Actually schedules the task onto the processor
 - b. Puts task in I/O wait
 - c. Is always small and simple
 - d. None of the above
7. Say true or false : Virtual memory increases memory speed.
8. The problem of thrashing is effected scientifically by _____
 - a. Program structure
 - b. Program size
 - c. Primary storage size
 - d. None of the above
9. The LRU algorithm replaces
 - a. Pages that have not been used recently
 - b. Pages that have been least used
 - c. First page in a given area
 - d. Pages that have been used recently
10. Say true or false : If none of the processes involved in a circular wait are making progress, it indicates starvation.

Turn over

11. Part of a program where the shared memory is accessed and which should be executed invisibly is called _____.
- Semaphore
 - Mutual exclusion
 - Spooling
 - None of the above
12. Say true or false: Banker's algorithm is used to detect deadlock in a system.

II Answer all 9 questions. (9 x 1 = 9 weights)

- Compare and contrast the features of Multiprocessor and Time Sharing Systems.
- Explain the functions of a loader.
- Explain the process state diagram.
- Mention the criteria that a process needs to hold before entering the critical section.
- "Memory management is central to the design of an OS". Justify the statement.
- What is demand paging?
- How do you recover from a deadlock?
- What are the different structures in which the files are stored?
- Discuss the features of a Windows OS.

III Answer any 5 questions. (5 x 2 = 10 weights)

- Define an Operating System. "Operating System is the brain of the Computer". Justify.
- Discuss the dynamic memory allocation algorithms with examples for each:
 - First Fit
 - Best Fit
 - Worst Fit
- Explain Concurrency control in detail.
- Discuss and differentiate between the various schedulers, scheduling queues for processor scheduling in detail.
- Discuss the Resource Allocation Graph in detail.
- Elaborate on any one allocation method for files.
- Explain threads, multithreads and its advantages.

IV Answer any 2 questions. (2 x 4 = 8 weights)

- Explain briefly the various schemes that can be adopted to manage memory.
- Discuss Deadlock and its characteristics. Also explain the methods of handling deadlocks briefly.
- Explain the UNIX OS in detail.