

Seat No: _____

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
BCA., Winter 2018 – 19 Examination

Semester: 4
Subject Code: 05101252
Subject Name: Operating System

Date: 11-12-2018
Time: 02:00 pm to 04:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Answer the followings.

A. Define the following.

(05)

1. Mutual Exclusion
2. Segmentation
3. Race Condition
4. Page fault
5. Deadlock.

B. Multiple choice type questions/ Give the sentence true or false. (Each of 01 marks)

(10)

1. Process is _____
 - a) Program in high level language
 - b) Program in execution
 - c) Contents of main memory
 - d) A job in secondary memory
2. The LRU algorithm is _____
 - a) Pages out pages that have been used recently
 - b) Pages out pages that have not been used recently
 - c) Pages out pages that have been least used recently
 - d) Pages out of the first page in given area.
3. Which of the following functions are performed by the loader?
 - a) Allocate space in memory for the programs and resolve symbolic references between object decks
 - b) Adjust all address dependent locations, such as address constants, to correspond to the allocated space.
 - c) Physically place the machine instructions and data into memory.
 - d) All of the above
4. Which command is used to display the operating system name
 - a) Os
 - b) Unix
 - c) Kernel
 - d) Uname
5. Page table length register indicates size of _____
 - a) Page table
 - b) Paging file
 - c) Main memory
 - d) Virtual memory
6. Which of the following is not the approach to handling deadlock _____
 - a) Deadlock prevention
 - b) Deadlock avoidance
 - c) Detect & recover
 - d) Virtual memory

7. When a thread waits indefinitely for some resource, but other thread are actually using it is called_____
 - a) Starvation
 - b) Demand paging
 - c) Segmentation
 - d) None
8. Operating system manages_____
 - a) Memory
 - b) Processor
 - c) I/O devices
 - d) All
9. What are the requirements for the solution to critical section problem?
 - a) Mutual exclusion
 - b) Progress
 - c) Bounded waiting
 - d) All
10. Which of the following is the allocation method of disk space?
 - a) Contiguous allocation
 - b) Linked allocation
 - c) Indexed allocation
 - d) All

Q.2 Answer the followings. (Any Five)

(15)

1. Give the differences between multiprogramming and multitasking.
2. What do you mean by virtual memory and physical memory? Explain.
3. What is device driver? Explain its functions.
4. What is Operating System? Give the functions of Operating System.
5. What is thread? Explain thread structure.
6. Give the functions of following UNIX commands: grep, cat, chmod

Q.3 Answer the following. (Any three)

(15)

1. What is deadlock? Explain the Banker's algorithm for deadlock avoidance.
2. Explain various Disk Scheduling Algorithms with illustration.
3. What is Virtual Memory? Explain Demand Paging.
4. What is RAID? Explain Different RAID levels.

Q.4 Answer the following.

A. Explain various file attributes and file operations in brief

(05)

B. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130 Starting from the current head position, what is the total distance ((in cylinders) that the disk arm moves to satisfy all the pending requests, for each of the following disk scheduling FCFS SCAN SSTF LOOK C-SCAN C-LOOK.

(10)

OR

B. Explain the different types of operating system.

(10)