Visit www.brpaper.com for

downloading previous year question papers of B-tech, Diploma, BBA, BCA, MBA, MCA, Bsc-IT, Msc-IT, M-Tech, PGDCA, B-com

Roll No.					Total No. of Pages: 0
					1000110101010

Total No. of Questions: 09

B.Tech.(CSE) / (IT) (Sem.-4)
OPERATING SYSTEM
Subject Code : CS-202
Paper ID : [A0458]

Time: 3 Hrs. Max. Marks: 60

INSTRUCTION TO CANDIDATES:

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION A

1. Write briefly:

- a) Define the term operating system.
- b) Name various algorithms used to schedule processes.
- c) Why there is a need to synchronize processes?
- d) Differentiate between binary semaphore and counting semaphore.
- e) How preemptive scheduling is different from non-preemptive scheduling? Give one example of each type.
- f) Consider a logical address space of 4 pages of 512 addressable words each, mapped onto a physical memory of 16 frames.
 - i. How many bits are there in the logical address?
 - ii. How many bits are there in the physical address?
- g) Define the term Virtual memory.
- h) What do you understand by critical section?
- i) What are the advantages of using distributed operating system?
- j) What is meant by graceful degradation?

1 | M - 5 6 5 1 3 (S 2) - 1 0 4 8

Visit www.brpaper.com for

downloading previous year question papers of B-tech, Diploma, BBA, BCA, MBA, MCA, Bsc-IT, Msc-IT, M-Tech, PGDCA, B-com

SECTION B

- 2. What is the role of scheduler? Differentiate among short, medium and long term scheduler.
- 3. Find the number of page faults using First In First Out (FIFO) and Least Recently Used(LRU) page replacement algorithm for given series of page references if the size of frame is 4.

- 4. Discuss ways by which deadlock can be detected and explain an algorithm for detected deadlocks?
- 5. Explain the FCFS disk-scheduling algorithm. Find out number of head movements for FCFS for a queue from 0-199 and current head pointer is at 53.

6. Explain the implementation of semaphores in attaining process synchronization.

SECTION C

- 7. What is File System and what are the various File access methods?
- 8. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:

Process	Burst Time	Arrival time
P_1	5	0
P_2	3	
P_3	1	2
P_4	3	3
P_5	5	4

The processes are assumed to have arrived in the order P1, P2, P3, P4, and P5.

- a. Draw two Gantt charts illustrating the execution of these processes using FCFS and a preemptive SJF (Shortest Job First).
- b. What is the turnaround time of each process for each of the scheduling algorithms in part a?
- c. What is the waiting time of each process for each of the scheduling algorithms in part a?
- 9. a) Describe the differences between symmetric and asymmetric multiprocessing. What are three advantages and one disadvantage of multiprocessor systems?
 - b) Why is memory protection important in a multiprogramming system?

2 | M - 5 6 5 1 3 (S 2) - 1 0 4 8