Tribhuvan University

Institute of Science and Technology

2076

Bachelor level/ Second Year/ Third Semester/ Science
Computer Science and Information Technology (CSC259)
(Operating Systems)

Candidates are required to give their answers in their own words as for as practicable.

All figures in the margin indicate full marks.

Attempt any two questions:

Section A

Long Answer Questions

Attempt any Two Questions

1. Defined interactive system goal? List various interactive scheduling algorithms. Consider following process data and compute average waiting time and average turnaround time for RR(quantum 10) and priority scheduling algorithms.

PID	Brust Time	Arrival Time	Priority
A	16	0	1
B	37	12	2
C	25	7	3

2. How second chance page replacement algorithm differs from FIFO page replacement policy? Discuss the concept of Belady's anomaly with suitable example.
3. What is the main objective of disk scheduling algorithms? Why SSTF is not practically feasible? Assume that we have disk with 100 tracks and currently head is at track number 35. What will be the seek time for the algorithms SCAN and LOOK for processing IO requests queue: 52, 67, 27, 11, 43, 85, 18, 75, 92, 8?

Group 'B'

Short Answer Questions
Attempt any Eight questions.

4. What are two modes of OS? Discuss different OS structures briefly.
5. When threads are better than processes? Explain the concept of user level threads in detail.
6. Differentiate between multi programming and Mono programming. What will be the CPU utilization with 6 processes with 60% IO waiting time are in memory?
7. How can you manage free disk space? Explain the linked list approach of managing free disk space with example.
8. When programmed IO is suitable than other IO handling techniques? Explain the process of IO handling using DMA.
9. Differentiate between deadlock and starvation? Discuss the process of detecting deadlocks when there are multiple resources of each type.
10. What is problem associated with semaphores? Explain the concept of monitors in brief.
11. Why program relocation and protection is important? Explain the technique of achieving program relocation and protection.
12. Write short notes on
    Linux File System
    Resource Allocation Graph