9/11/13

(21)

B.E./B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC2013

ELECTRONICS AND COMMUNICATION ENGINEERING BRANCH

SIXTH SEMESTER

EC 501 / EC 9077 – OPERATING SYSTEMS

(REGULATIONS 2004 / 2008)

Duration: 3 Hours **Max.marks:100**

Answer ALL questions

PART-A (10x2=20 Marks)

1. What is time sharing?
2. State the general roles of an OS.
3. What is test-and-set instruction?
4. Give the structure of a Readers-Writers problem.
5. Graphically how does number of frames and page faults vary?
6. Describe any two methods to keep track of free blocks.
7. How does a DMA increase system concurrency?
8. Distinguish between a STREAMS driver and a STREAMS module.
9. Define real time operating system.
10. Write down some basic Linux\Unix\Windows commands with description.

PART-B (5X16=80 Marks)

11.(i)Explain the six services provided by an operating system that helps the programmers to ease their programming task and the services provided for enhancing the system performance. **(6)**

(ii)Explain the various operating system structures with neat sketches. **(10)**

12.(a)(i)What is racing ?Give an illustration. **(6)**

(ii)What is a semaphore? Explain in detail the solution for Dining philosopher's problem using semaphore. **(10)**

OR

12.(b)Explain the differences between priority scheduling and round robin scheduling. **(16)**

13.(a)(i)Explain Bankers' algorithm with your example data structures. **(10)**

(ii)Draw the segmentation hardware scheme and explain. **(6)**

OR

13.(b)Explain the concept of demand paging. How is demand paging implemented with virtual memory? **(16)**

14.(a)(i)How can you improve the efficiency of I/O? Also explain device functionality progression. **(10)**

(ii) Draw a life cycle of an I/O request. **(6)**

OR

14.(b)(i)Suppose that the head of a moving hard disk with 192 tracks, numbered 0 to 191 is currently serving a request at track 80 and has just finished a request at track 62,the queue of requests is kept in the FIFO order:119,58,114,28,111,55,103,30,75.What is the total number of tracks traversed by head movements needed to satisfy these requests for the following disk scheduling algorithms?

i)FCFS
ii)SSTF
iii)Elevator (SCAN)
iv)Modified elevator (C-SCAN) **(16)**

15.(a)(i)Explain in detail about the concept of distributed operating systems with neat sketch. **(10)**

(ii)List the failures of distributed system. How can you overcome? **(6)**

OR

15.(b)Explain the architecture of LINUX operating system with neat diagram. **(16)**