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Question Paper Code: 31025

B.E. / B.Tech. DEGREE EXAMINATION, OCTOBER 2014.

Third Semester

Computer Science and Engineering

01UCS305 - OPERATING SYSTEMS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Write the advantage of microkernel over monolithic kernel.
2. What is system call? Give examples.
3. What is busy - waiting? Is it preferable over blocking wait? Give reason.
4. What is non - preemptive scheduling? Write two examples for non-preemptive scheduling algorithms
5. What is Belady's anomaly?
6. Write the impacts in choosing page size.
7. List out the different types of file access methods.
8. What is disk stripping?
9. What are the objects present in Windows kernel?
10. Write down the contents present in the registration table of Linux kernel.

PART - B (5 x 16 = 80 Marks)

11. (a) Write a note on the following operating systems

(i) Mainframe systems (5)

(ii) Multiprogramming systems (5)

(iii) Distributed systems. (6)

Or

(b) (i) Discuss about the services provided by the operating system. (8)

(ii) What are the different types of Multithreading models? Explain. (8)

12. (a) (i) Explain how an operating system controls the processes and manage the resources for processes. (8)

(ii) With a help of diagram discuss the structure of a monitor. (8)

Or

(b) Consider the following set of processes.

Processes	Arrival Time	Burst Time	Priority
P1	0	3	2
P2	1	5	1
P3	3	2	4
P4	9	5	5
P5	12	5	3

Draw the Gantt chart and calculate the average waiting time and average turnaround time for each of the scheduling algorithm.

(i) FCFS (ii) Pre-emptive priority scheduling

(iii) SRTF (iv) Round robin scheduling (Time quantum = 3 ms) (16)

13. (a) (i) Write a deadlock avoidance algorithm and explain it using an example. (10)

(ii) What is circular wait? How to avoid circular wait condition? (6)

Or

(b) Discuss the hardware support for segmentation and explain the mapping of logical address to physical address. (16)

14. (a) (i) What are the different ways of defining a directory structure logically? Explain each. (8)

(ii) Discuss the different types of file allocation methods on secondary storage device. (8)

Or

(b) Discuss about different types of disk scheduling algorithm. (16)

15. (a) Explain about the following in a LINUX system.

(i) Block Devices (8)

(ii) Character Devices. (8)

Or

(b) With a neat diagram explain the system components of Windows 2000. (16)

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