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Question Paper Code: 31235

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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. What do you mean by Time-Sharing systems?
2. What is system call? Give examples.
3. What is busy - waiting? Is it preferable over blocking wait? Give reason.
4. Give two hardware instructions and their definitions which can be used for implementing mutual exclusion.
5. What is Belady's anomaly?
6. Write the impacts in choosing page size.
7. In indexed allocation scheme, how can the index blocks be implemented? Mention the advantages of indexed allocation scheme.
8. What is disk stripping?
9. Define rotational latency and disk bandwidth?
10. Write down the contents present in the registration table of Linux kernel.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain in detail about inter process communication and threading issues. (16)

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) Explain the FCFS, preemption and non-preemption versions of shortest job first and round robin (time slice = 2) scheduling algorithm with gant chart for the four process given and compare their average turn around time and waiting time. (16)

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

13. (a) Give the basic concepts about paging and give a note on techniques for structuring the page table. (16)

Or

- (b) Discuss the hardware support for segmentation and explain the mapping of logical address to physical address. (16)
- 14.(a) Enumerate why file protection is necessary? Write notes about the protection strategies provided for files. (16)

Or

- (b) Discuss about different types of disk scheduling algorithm. (16)
15. (a) Outline the concept kernel I/O subsystem. (16)

Or

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