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Question Paper Code: 34804

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fourth Semester

Information Technology

01UIT404 - PRINCIPLES OF OPERATING SYSTEMS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define Context switch.
2. Write the procedure of Remote Method Invocation in brief.
3. Define Monitors.
4. List the conditions that raises deadlock in multi-process system.
5. What is an overlay?
6. Define Thrashing.
7. What are file attributes?
8. What do you mean by distributed file system? Give its purpose.
9. List any two principles to improve the efficiency of I/O system.
10. What is Sector sparing?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the execution process of RPC and RMI with a neat diagram. (16)

Or

- (b) What are the types of system calls? Explain the functions of each. (16)

12. (a) Explain Critical Section Problem and explain the contributions of Monitors and Semaphores? (16)

Or

(b) Discuss in detail about the methods for handling Deadlocks. (16)

13. (a) Discuss about the basic concepts about Paging and explain techniques for structuring the page table. (16)

Or

(b) (i) Consider the page-reference string: 2 3 2 1 5 2 4 5 3 2 5 2. How many page faults occur for the FIFO, LRU and Optimal replacement algorithms, assuming three frames? (12)

(ii) Compare segmentation and paging. (4)

14. (a) Discuss the schemes for defining the logical structure of a directory. (16)

Or

(b) What are the various free space management techniques? Explain. (16)

15. (a) Explain the various process scheduling algorithms with suitable example. (16)

Or

(b) (i) Explain in detail about Swap Space Management. (6)

(ii) Write Short notes on RAID. (4)

(iii) Discuss briefly about Kernel I/O Subsystem. (6)