Reg. No. : | | | | | | | | | | |

Question Paper Code: 34804

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. What is Graceful degradation?
2. What is meant by Privileged instructions?
3. What is called Safe and Unsafe state?
4. Name the various classical problems of synchronization.
5. Define Page fault.
6. What is thrashing?
7. What are file attributes?
8. What do you mean by distributed file system? Give its purpose.
9. List the various registers in an I/O port.
10. Give the most common examples for tertiary-storage devices.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) What are the types of system calls? Explain the functions of each. (10)

(ii) Explain the various states of a process. (6)

Or

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

12. (a) (i) Discuss in detail about the Process Control Block . (8)

(ii) Explain Critical Section Problem and explain the contributions of Monitors and Semaphores? (8)

Or

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

13. (a) Explain the most common 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) (i) Explain directory structure in file system implementation. (8)

(ii) Write notes about the Protection strategies provided for files. (8)

Or

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

15. (a) (i) Discuss application I/O interface in detail. (8)

(ii) Explain how I/O system is managed in Linux system. (8)

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)

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