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

Question Paper Code: 31844

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

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. List out the reasons for allowing co-operating processes.
3. What is called Safe and Unsafe state?
4. Define scheduling.
5. Define Page fault.
6. What is meant by local replacement algorithm?
7. Define Spooling
8. Define Seek time and Latency time.
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) Write in detail about Thread Management. (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) Consider the following page-reference string: 1, 2, 3, 4, 2, 1, 5 ,6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2 ,3, 6. How many page faults would occur for the LRU, FIFO and Optimal replacement algorithms, assuming one, two, three, four, five, six or seven frames? Remember that all frames are initially empty, so your first unique pages will all cost one fault each. (16)

Or

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

14. (a) Explain in detail about the schemes for defining the Logical structure of a directory. (16)

Or

(b) Discuss about the most common schemes for defining the logical structure of a directory. (16)

15. (a) Discuss in detail about the disk scheduling algorithms with relevant examples and diagrams. (16)

Or

(b) Explain in detail the services provided by Kernel related to I/O system. (16)

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