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

Question Paper Code: 41082

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

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. Define busy waiting and Spinlock.
5. Define Page fault.
6. Why should we use virtual memory?
7. Define Spooling
8. Define Seek time and Latency time.
9. What is low level formatting?
10. What is Sector sparing?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Discuss briefly about (a) Multi processor Systems (b) Distributed Systems (c) Time Sharing Systems (d) Client Server Computing (12)

(ii) Write shortly about the various services of Operating Systems. (4)

Or

(b) (i) Discuss the various system calls for operating system services. (6)

(ii) Write in detail about Thread Management. (10)

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) (i) What is Deadlock? What are the necessary conditions for deadlock to occur? (4)

(ii) Discuss in detail about the methods for handling Deadlocks. (12)

13. (a) (i) What is the need for Memory management Unit and Explain background details with it? (6)

(ii) Write in detail about the Contiguous Memory Allocation with neat diagram. (10)

Or

(b) (i) Discuss about the basic concepts about Paging and explain techniques for structuring the page table. (10)

(ii) Explain the various Page replacement strategies. (6)

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

Or

(b) (i) Discuss in detail about the Free space management with necessary diagrams. (8)

(ii) Write short notes on file protection strategies. (8)

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