

- 12. What is deadlock prevention? Explain Banker's algorithm for deadlock prevention with suitable example.
- 13. Describe various interprocess communication mechanisms in UNIX.
- 14. Name one feature of the Windows NT architecture that supports each of the following design goals: Compatibility, reliability, portability, scalability, performance, extensibility, and distributed processing.
- 15. Describe the Linux process management in detail.

Register Number :  
Name of the Candidate :

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**B.Sc. DEGREE EXAMINATION, 2013**

( COMPUTER SCIENCE )

( SECOND YEAR )

( PART - III )

**220 / 250 / 210. OPERATING SYSTEMS**

( Common to B.Sc., [ I.T. ] & B.C.A. )

( Double Degree )

December ] [ Time : 3 Hours

Maximum : 100 Marks

**PART - A** ( 8 × 5 = 40 )

*Answer any EIGHT questions.*

*ALL questions carry EQUAL marks.*

- 1. What is critical section problem and what are the requirements for solution to the critical section problems?
- 2. Describe multiprogrammed systems and time-sharing systems.

**Turn Over**

3. With block diagram, explain how logical address is converted into physical address in paged memory management system.
4. Explain various disk free space management techniques in detail.
5. Explain the structure of the UNIX inode in detail.
6. What is user interface? Explain the features of UNIX user interface.
7. Explain how does Windows NT's hardware abstraction layer increase the operating system's portability?
8. Explain the advantages of the layered device driver and file system design in Windows NT.
9. Briefly compare the similarities and the difference between UNIX and LINUX.
10. What are the basic components of Linux? Explain in detail.

**PART – B** (3 × 20 = 60)

*Answer any THREE questions.*

*ALL questions carry EQUAL marks.*

11. Consider the following set of processes with the length of the CPU-burst time given in milliseconds. Assume arrival time of all the processes is zero.

Process	Burst Time	Priority
A	12	2
B	4	1
C	8	4
D	6	5
E	4	3

Draw Gantt chart, illustrating the execution of these processes using FCFS, SJF, RR and Priority. Also, find the turnaround time and waiting time of each process for each of the above scheduling algorithms.

**Turn Over**