22/3/2018

Q.P. Code : 00894

[Time: $2\frac{1}{2}$ Hours] **[Marks:75]**

N.B: Please check whether you have got the right question paper.
1. All questions are Compulsory.
2. Make suitable assumptions wherever necessary and state the assumptions made.
3. Answer to the same question must be written together.
4. Numbers to the right indicate marks.
5. Draw neat labeled diagrams wherever necessary.
6. Use of Non-programmable calculators is allowed.

Q.1 Attempt any three of the following: (15)
a. What is an Operating system? Explain its functions.
b. List and explain the system calls for file management.
c. With suitable diagram explain the structure of disk drive.
d. List various states of processes. Explain with neat diagram.
e. What is race condition? How mutual exclusion handles race condition?
f. With suitable example explain the shortest job first scheduling algorithm.

Q. 2 Attempt any three of the following: (15)
a. Explain the concept of address space in memory management
b. What is the purpose of swapping? Explain with example.
c. Explain the first in first out page replacement algorithm. Give example.
d. List and explain different file structures.
e. Write various operations of file explain in short.
f. Explain the linked list allocation method for storing the files.

Q. 3 Attempt any three of the following: (15)
a. Write a short note on memory mapped IO.
b. What is RAID? Explain in short.
c. Write a short note on soft timers.
d. List two types of resources. Explain with suitable example.
f. What is deadlock? Explain with suitable example.
g. Explain any one way to avoid deadlock.

Q. 4 Attempt any three of the following: (15)
a. What is the need of virtualization?
b. What do you mean by cloud? Write the essential characteristics of cloud.
c. Write a short note on I/O virtualization.
d. With the help of neat diagram explain the working of message passing multicomputer system.
e. Explain UMA multicomputer system using crossbar switch.
f. Explain the working of master slave multiprocessor system.

TURN OVER

Q. 5 Attempt any three of the following:

a. List categories of Linux utility programs. Explain any two.
b. Explain various process management system calls in Linux.
c. Explain the booting process of Linux.
d. Explain the concept of caching in Windows.
e. Write the fundamental concept of process in Windows.
f. Explain in short how memory is managed in Windows.