APRIL- 2016

<u>M.C.A. Semester:- 3 Examination</u>

Paper Code: 3606   Paper Title: Operating System Principles

<u>Time: 02:30 Hours</u>   Marks: 70

[10]

Q1   Answer any FIVE from the following:

a.   What do you mean by 50 percent rule?

b.   What is the structure and use of open file table?

c.   Differentiate hard real time and soft real time system.

d.   Differentiate logical and physical memory address.

e.   Explain dual mode hardware protection.

f.   Define terms : resource allocation graph and wait for graph

g.   What is virtual memory?

[15]

Q2   Answer any FIVE from the following:

a.   What are the different components of operating system?

b.   Write a note on Context switching.

c.   Discuss multi-threaded system with its advantages.

d.   Give the structure of Unix file system.

e.   Write down advantages and disadvantages of each CPU scheduling algorithm.

f.   What are the different methods of free space management?

g.   Methods used to recover from deadlock situation.

[25]

Q3   Answer any FIVE from the following:

a.   Explain buffering and caching with example.

b.   Discuss medium term scheduler with its use.

c.   Give solutions of external fragmentation with its advantages and disadvantages.

d.   Explain use of different types of queues managed by operating system.

e.   Give advantages and limitations of each file allocation method.

f.   Discuss banker's algorithm.

g.   Define page fault. Calculate total number of page faults when we apply FIFO
page replacement algorithm on given data.
Reference String:- 1 2 3 4 1 2 5 1 2 3 4 5
Free Frames:- 3 and 4

APRIL - २०१६

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Q4   Answer any TWO from the following: [20]

a. Explain use of different registers which are associated with I/O port. What is the use of DMA?

b. Define seek time and rotational latency. Apply SSTF, C-SCAN and C-LOOK disk scheduling algorithm and calculate total head movement. Consider that 200 cylinders are there. Currently head is on cylinder 100.
Queue:- 20 295 117 88 225 135 40

c. What do you mean by segmentation? Explain segmentation with paging.