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U-181

B.C.A. IIIrd Semester Examination, 2012-13

Operating System

Paper - BCA-304

Time : 3 Hours]

[Maximum Marks : 85

Note :- Attempt all the questions.

Section-A

Objective Type Questions 1.5×10=15

1. (i) Distributed OS words on the.....Principle :
- (A) File foundation (B) Single system image
(C) Multisystem image (D) Networking image
- (ii) Which of the following is not advantage of multiprogramming :
- (A) Increased throughput
(B) Shorter response time
(C) Decreased operating system overhead

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- (D) Ability to assign priorities to jobs
- (iii) Information about a process is maintained in a.....
- (A) Stack
(B) Translation look a side buffer
(C) Process control block
(D) Program control block
- (iv) Round robin scheduling is essentially the preemptive version of
- (A) FIFO onlineBU.com
(B) Shortest job first
(C) Shortest renaming
(D) Longest time first
- (v) A page fault occurs :
- (A) When the page is not in the memory
(B) When the page is in the memory
(C) When the process enters the blocked state
(D) When the process is in the ready state
- (vi) The mechanism that brings a page into memory only when it is needed is called

- (A) Segmentation (B) Fragmentation
(C) Demand Paging (D) Page replacement

(vii) FIFO scheduling is

- (A) Preemptive scheduling
(B) Deadline scheduling
(C) Non preemptive
(D) Fair share scheduling

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(viii) The primary job of operating system is :

- (A) Manage commands (B) Manage users
(C) Manage programs (D) Manage resources

(ix) Which of the following memory allocation scheme suffers external fragmentation ?

- (A) Segmentation (B) Pure demand paging
(C) Swapping (D) Paging

(x) Which file system does DOS Typically use :

- (A) FAT 16 (B) FAT 32
(C) NTFS (D) WNFS

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Section-B

Short Answer Type Questions

2. Explain various operating system services in brief. 4

OR

Write short notes on multiprogramming and real time operating system.

3. What are schedulers ? Describe the various types of schedulers ? 4

OR

What is process ? Explain different possible operations on process.

4. Explain logical and physical address spaces. 4

OR

What is fragmentation ? How it can be overcome ?

5. Write short notes on disk controller and disk driver. 4

OR

What do you mean by hash table and hash function.

6. What is interprocess communication. 4

OR

What are the major security threats and goals.

Section-C**Long Answer Type Questions**

7. What is operating system ? Explain the basic functions of operating system. 8

OR

Explain the difference between a distributed system and a parallel system.

8. Assume you have the following jobs to execute with one processor
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Job	Arrival Time	Burst Time	Priority
P1	0	10	3
P2	1	1	1
P3	2	2	3
P4	3	1	4
P5	4	5	2

Give the Gantt chart and calculate the average turn around time for each job using the following scheduling algorithm :

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- (i) FCFS
- (ii) RR (q=1) scheduling.
- (iii) SJF Scheduling.

OR

What is meant by Pre-emptive scheduling ? Compare it with Non pre-emptive scheduling.

9. Explain the following : 8

- (i) Demand paging.
- (ii) Segmentation.

OR

What are different types of page replacement algorithms.

10. Write the notes on following : (any four) 8

- (i) Disk management.
- (ii) Disk mirroring.
- (iii) Chaing and Indering.
- (iv) Directory structure.
- (v) Contiguous and non contiguous allocation.
- (vi) Disk scheduling Algorithm.
- (vii) Disk caching.

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11. Discuss the problem of deadlocks. What are the necessary conditions for a deadlock to occur ?

OR

Explain the following :

- (i) Safe and unsafe state.
- (ii) Security policies and mechanism.

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