



AF-3109

BCA (Part - II)
Term End Examination, 2017-18

Paper - III

Operating System

Time : Three Hours] [*Maximum Marks* : 100
 [*Minimum Pass Marks* : 33

Note : Answer **all** questions. There is internal choice in each Unit. The figures in the right-hand margin indicate marks.

1. Answer the following short answer type questions : 25
- (a) Explain different state of process.
 - (b) Explain parallel operating system.
 - (c) What is deadlock ?
 - (d) What is meant by binary semaphore ?
 - (e) What is thrashing ?
 - (f) Explain demand paging.

(2)

- (g) What is buffering ?
- (h) Explain Disk Management.
- (i) What is file system ?
- (j) What is directory structure ?

Unit-I

- 2. Describe the two general goals of an operating system. 15

OR

Compare multitasking and multiprogramming.

Unit-II

- 3. What is a process ? Draw a state transition diagram to show the various states through which it may pass during execution. 15

OR

Consider the following set of process :

Process	Arrival Time	Burst Time
P1	0.0	8
P2	0.4	4
P3	1.0	1

Calculate average turnaround time using :

- (a) SJF (Pre-emptive)
- (b) SJF (Non Pre-emptive)

(3)

Unit-III

4. Discuss the difference between logical address space and physical address space. 15

OR

Consider the following reference string : 7, 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. How many page faults would occur for the following replacement algorithms, assuming 3 frames ?

- (a) FIFO replacement
- (b) CRU replacement
- (c) Optimal replacement

Unit-IV

5. Suppose a disk drive has 200 cylinders, numbered 0 to 199. The drive is currently serving a request at cylinder 53 and the previous request was at cylinder 60. The queue of pending requests in FIFO order is 98, 183, 37, 122, 14, 124, 65, 67. Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following Disk Scheduling algorithms ? 15
- (a) FCFS

(4)

- (b) SSTF
- (c) SCAN

OR

What do you mean by Shared devices ?
Explain in detail.

Unit-V

6. Explain any **two** of the following : 15
- (a) Directory implementation
 - (b) Physical file system
 - (c) Protection
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