

BCA (Honours) 3rd Semester Examination, 2020

Subject: Operating System

Paper: BCA-301

Time: 3 Hours

Full Marks: 80

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

A. Answer any five questions

5x10=50

1. Explain the concept of Demand Paging with the help of a suitable example.
2. Consider the following snapshot of a system:

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P ₀	0	0	1	2	0	0	1	2	1	5	2	0
P ₁	1	0	0	0	1	7	5	0				
P ₂	1	3	5	4	2	3	5	6				
P ₃	0	6	3	2	0	6	5	2				
P ₄	0	0	1	4	0	6	5	6				

Is the system in safe state?

3. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending request, in FIFO order is:

86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130

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?

- (i) FCFS
 - (ii) SCAN
4. Discuss Multilevel Queue and Multilevel feedback queue scheduling algorithm.
 5. Explain Batch Processing Operating System.

6. Discuss different file allocation techniques.
7. Discuss the concept of Spooling.

B. Answer any six questions

6x5=30

1. Define Process? Write the differences between Process and Program . Discuss Life cycle of a Process.
2. Define Binary Semaphore. Discuss the advantages and disadvantages of binary Semaphore.
3. What are the steps taken by Operating System when a page fault occurs?
4. Discuss the idea of Multiprogramming and Multiprocessing
5. Explain the concept of Virtual Memory.
6. Define Operating System. What are the major functions of Operating system?
7. Define race condition in the context of process synchronization . Explain with an example
8. Write short note on Time Sharing Operating system.