

S.No. : 462

BCA 3202R

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 31115

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B. C. A. Examination 2021-22

(Even Semester)

BASICS OF OPERATING SYSTEM

Time : Three Hours]

[Maximum Marks : 60

Note :- Attempt all questions.

SECTION – A

1. Attempt all parts of the following. Explain the following : $1 \times 8 = 8$

- (a) Define mutual exclusion.
- (b) What is throughput?
- (c) Define non-preemptive scheduling.
- (d) What is critical section?
- (e) Define paging.

[P. T. O.

- (f) What is thread?
- (g) Define a file.
- (h) Name any two file access method.

SECTION -B

2. Attempt any two parts of the following: $2 \times 6 = 12$

(a) Define the critical section problem. How critical section problem can be handle by using semaphore?

(b) What are the main services provided by operating system? Discuss each.

(c) Describe the following memory allocation scheme :

(i) First fit

(ii) Best fit

(iii) Worst fit.

(d) What is address binding during processing of a user program? Describe different types of address binding.

SECTION -C

Note:- Attempt all questions. Attempt any two parts from each questions. $5 \times 8 = 40$

3. (a) Four jobs to be executed on a single processor system at time 0+ in the order A, B, C, D. Their burst CPU time requirements are 4, 1, 8, 1 time units respectively. What will be the completion time of "A" under round robin scheduling with time slice of one unit?

(b) Describe multiprogramming and batch processing.

(c) What is critical section problem? Give a solution to critical section problem.

4. (a) Explain producer-consumer problem of synchronization.

(b) Explain banker's algorithm with example.

(c) What is resource allocation graph? Describe use of resource allocation graph.

5. (a) Differentiate in between paging and segmentation.

[P. T. O.]

- (b) Explain the concept of swapping with an example.
 - (c) What do you mean by bage replacement? Describe the need of bage replacement.
6. (a) What is file system? Explain its functions.
- (b) Suppose that a disk has 5000 cylinders. The drive is currently serving at 143. The queue of pending request FIFO order is 80, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. What will be the total distance that the disk arm move for FCFS and SSTF. disk scheduling algorithm?
- (c) Name different file attributes. What does these attribute describe?
