

Roll No.

Total No. of Questions : 09]

Paper ID [CS202]

[Total No. of Pages : 02

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Semester - 4th)

OPERATING SYSTEM (CS - 202)

Time : 03 Hours

Maximum Marks : 60

Instruction to candidates :

- 1) Section - A is **compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

(10 × 2 = 20)

- Q1)** a) Explain the advantages of swapping.
b) What is an interrupt? What happens when an interrupt occurs?
c) Comments on the merits and demerits of bat files of MS DOS with comparison to batch processing.
d) List the conditions under which memory allocation decisions can delay initiation or scheduling of a program.
e) Comment on "There would be no need for linkers if all the programs are coded as self relocating programs".
f) What are different operating system services?
g) What is page fault? Why does it occur?
h) What is threading?
i) What is the difference between cache memory and auxiliary memory?
j) What are the shortcomings of FCFS scheduling policy?

Section - B

(4 × 5 = 20)

- Q2)** What is multiprogramming? What are the factors effecting the degree of multiprogramming?
Q3) What are the reasons for internal fragmentation and external fragmentation?

Q4) Why do we say that FCFS disk head scheduling is fair?

Q5) List down various protection problems that an operating system might have to deal with.

Q6) A timesharing system is to be designed to support a large number of users. List all the considerations which influence the choice of time slice. Justify each consideration.

Section - C

($2 \times 10 = 20$)

Q7) Compare RPC and remote evaluation on the basis of flexibility, efficiency and security.

Q8) (a) A memory manager for a variable size region strategy has a free list of blocks of size 600, 1400, 1000, 2200, 1600 and 1050 bytes. What block size will be selected to honor a request for 1605 bytes using best fit policy?
(b) What is thrashing? How is it eliminated?

Q9) (a) Consider the following page reference string :

1, 4, 2, 1, 5, 6, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 5

Find the number of page faults for the reference string for LRU replacement assuming 4 frames. All frames are initially empty.

(b) Comment on the following context of interacting processes in unix :
"Implementation of wait call using PCB data structures"