

- ① Give the principles, mutual exclusion in critical section problem. Also discuss how well these principles are followed in Dekker's Solution.

### Critical Section :-

- 1) A Critical section is a code segment in a process in which a shared resource is accessed.
- 2) Each process has a segment of code called a critical function. Critical section used to avoid race condition on data items.
- 3) In critical section, the process may be changing common variable, updating table, writing a file and so on. At any moment at most one process can execute in critical section (C.S)

## Mutual Exclusion :-

- 1) Mutual exclusion is a way to ~~way~~ make sure that if one process is using a shared modifiable data, the other process will be excluded from doing the same thing.
- 2) Formally, while one process executes the shared variable, all other process desiring to do so that the same time should be kept waiting. When that process has finished executing the shared variable, one of the process waiting to do should be allowed to proceed.

## Dekker's Solution :-

- 1) Dekker's Solution is for two processes based solely on software.

- 2) Each of these process loop indefinitely repeatedly entering and reentering its critical section.
- 3) A process ( $P_0$  and  $P_1$ ) that wishes to execute its critical section first enters the igloo and examines the blackboard.
- 4) The process number is written on the blackboard and that process leaves the igloo and proceeds the critical section.
- 5) otherwise that the process will wait for its turn.