(b) A distributed system using mailboxes has two IPC primitives, send (pid. msg) and receive (pid, msg). The receive primitive blocks if no message from process pid is available, even though message may be waiting from other processes. There are no shared resources. Processes communicate frequently. Is deadlock possible ? Discuss.

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OR

2 If there are a large number of processes resident in memory, there will almost always be a ready process when a page fault occurs. Hence. CPU utilization will be high. If a large amount of memory is allocated to each of a few processes, then page faults will be infrequent. Hence, CPU utilization will be high.

(i) Which of these arguments is correct ?

(ii) What is the best policy ?

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UNIT - III

3 (a) How does a semaphore solve the critical section problem ? Discuss whether semaphores satisfy the three requirements for a solution to the critical section problem.

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(b) A barbershop consists of a waiting room with 'n' chairs and the barber room containing the barber chair. If there are no customers to be served, the barber goes to sleep. If a customer enters the barbershop and all chairs are occupied, then the customer leaves the shop. If the barber is busy but chairs are available then the customer sits in one of the free chairs. If the barber is asleep the customer wakes up the barber. Write a program to coordinate the barber and the customer.

8

OR

3 Explain the Banker's algorithm for dead-lock avoidable.

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