The resources involved must be unshareable; otherwise, the processes would not be prevented from using the resource when necessary.

2. hold and wait or partial allocation
   The processes must hold the resources they have already been allocated while waiting for other (requested) resources. If the process had to release its resources when a new resource or resources were requested, deadlock could not occur because the process would not prevent others from using resources that it controlled.
3. no pre-emption
   The processes must not have resources taken away while that resource is being used. Otherwise, deadlock could not occur since the operating system could simply take enough resources from running processes to enable any process to finish.
4. resource waiting or circular wait
   A circular chain of processes, with each process holding resources which are currently being requested by the next process in the chain, cannot exist. If it does, the cycle theorem (which states that "a cycle in the resource graph is necessary for deadlock to occur") indicated that deadlock could occur.