3.1 What is a semaphore? How is it different from a mutex?

Answer: A non-negative variable that is shared between threads is called as semaphore, It is initialized with a non-negative number that is available in the OS and is a process synchronization tool. It is also a signaling mechanism weather to indicate the resource is being acquired or released.

This is different than mutex because in this Multiple threads can be achieved and there is no wastage of time because they are waiting for the threads that are waiting in queue’s and it is machine/computer independent and here it will be having integer variable.