

```

semWait(s)
{
    while (compare_and_swap(s.flag, 0 , 1) == 1)
        /* do nothing */;
    s.count--;
    if (s.count < 0) {
        /* place this process in s.queue*/;
        /* block this process (must also set s.flag to 0)
    */;
    }
    s.flag = 0;
}

semSignal(s)
{
    while (compare_and_swap(s.flag, 0 , 1) == 1)
        /* do nothing */;
    s.count++;
    if (s.count <= 0) {
        /* remove a process P from s.queue */;
        /* place process P on ready list */;
    }
    s.flag = 0;
}

```

(a) Compare and Swap Instruction

```

semWait(s)
{
    inhibit interrupts;
    s.count--;
    if (s.count < 0) {
        /* place this process in s.queue*/;
        /* block this process and allow interrupts*/;
    }
    else
        allow interrupts;
}

semSignal(s)
{
    inhibit interrupts;
    s.count++;
    if (s.count <= 0) {
        /* remove a process P from s.queue*/;
        /* place process P on ready list */;
    }
    allow interrupts;
}

```

(b) Interrupts

Figure 5.17 Two Possible Implementations of Semaphores