**Part 1) MODEL 1A**

**Replications (min)**

1 2 3 4 5

**Total Part Time**  43.32 45.49 38.46 79.66 208.5

**Number Waiting in Queue** 11.80 12.34 10.27 23.20 61.035

**Time in Queue** 43.32 42.326 35.19 76.36 205.12

**The Utilization of the Server** 0.940 0.9451 0.9517 0.9967 0.9919

**Part 2) MODEL 1B**

**Replications (min)**

1 2 3 4 5

**Total Part Time**  3.3298 3.33 3.3281 3.3322 3.3273

**Number Waiting in Queue** 0 0 0 0 0

**Time in Queue** 0 0 0 0 0

**The Utilization of the Server** 0.1779 0.1785 0.1806 0.18 0.1747

**Question**

Compare the results and explain the difference

**Solution**

The system of Model 1B) has a lot of idle time in comparison to Model 1A as “time in queue” and “number waiting in queue” is 0. Model 1A also has a much higher utilization since the system is always busy. This can be explained by the spacing of inter arrival times (3.7 -34.1 in minutes) as this is really large causing no time in the queue.

**Part 3)**

Total Part Time 27.2320

Number Waiting in Queue (Process 1) 6.5252

Number Waiting in Queue (Process 2) 5.7571

Total Number Waiting in Queue (Process 1 + Process 2) 12.2823