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**Course Title: Operating Systems**

**Class: BSCS-0(S)**

***Instruction: Attach the solution file in pdf format***

**Assignment 03**

1. Suppose that we have 3 queues in the Multi-level feedback queue, 1st queue uses Round Robin with 3 quantum, 2nd queue have Round Robin scheduling with 6 quantum and 3rd queue uses FCFS scheduling. Show how the processes execute using Gantt chart. Calculate the average waiting and turnaround time.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Process** | **P1** | **P2** | **P3** | **P4** | **P5** |
| Burst Time | 11 | 4 | 14 | 09 | 21 |
| Arrival Time | 5 | 0 | 0 | 1 | 2 |

1. Why is it necessary to synchronize the processes? And where we don’t need synchronization among the processes?