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| **KING SAUD UNIVERSITY**  **COLLEGE OF COMPUTER AND INFORMATION SCIENCES Computer Science Department** | | |
| **CSC 227: Operating System** | **Tutorial# 7**  **Due: Sun, April23(12-1)** | **2nd Semester 1437-1438**  **Spring 2017** |

**Question#1:**

*Select (T) for true or (F) for False.*

|  |  |  |  |
| --- | --- | --- | --- |
|  | True/False | | Statement |
| 1 | **T** | F | p1 and p2 are cooperative process sharing a common variable, so critical section problem may arise. |
| 2 | **T** | F | Dividing the code into critical section and remainder section helps on solving critical section problem. |
| 3 | T | **F** | A cooperating process can capture and release the shared variable at any time. |
| 4 | T | **F** | If process Pi is executing in its critical section, then no other processes can be executing in their critical sections. |
| 5 | **T** | F | To avoid endless waiting for a cooperative process, waiting bound condition must be satisfied for the CS problem. |
| 6 | T | **F** | In Peterson’s solution, releasing the shared data is done by updating *turn* variable. |
| 7 | T | **F** | The maximum waiting bound in Peterson solution is 2. |
| 8 | T | **F** | To solve the critical section problem, two announcements are required one in the critical section and the other in remainder section. |
| 9 | **T** | F | In Peterson solution, we cannot predict which process will enter its critical section first if flag[0]=true and flag[1]=true. |
| 10 | **T** | F | Peterson’s solution can be applied on two processes. |

**Question#2:**

Suppose the following tabled of three processes p1,p2,p3:

|  |  |  |  |
| --- | --- | --- | --- |
| Process # | The entry section start at | Burst time | priority |
| P1 | 25 | 10 | H |
| 40 | 8 |
| P2 | 37 | 10 | M |
| 50 | 10 |
| P3 | 45 | 10 | L |
| 80 | 15 |

Assume that in every negotiation to enter the critical section the decision is given to higher priority process.

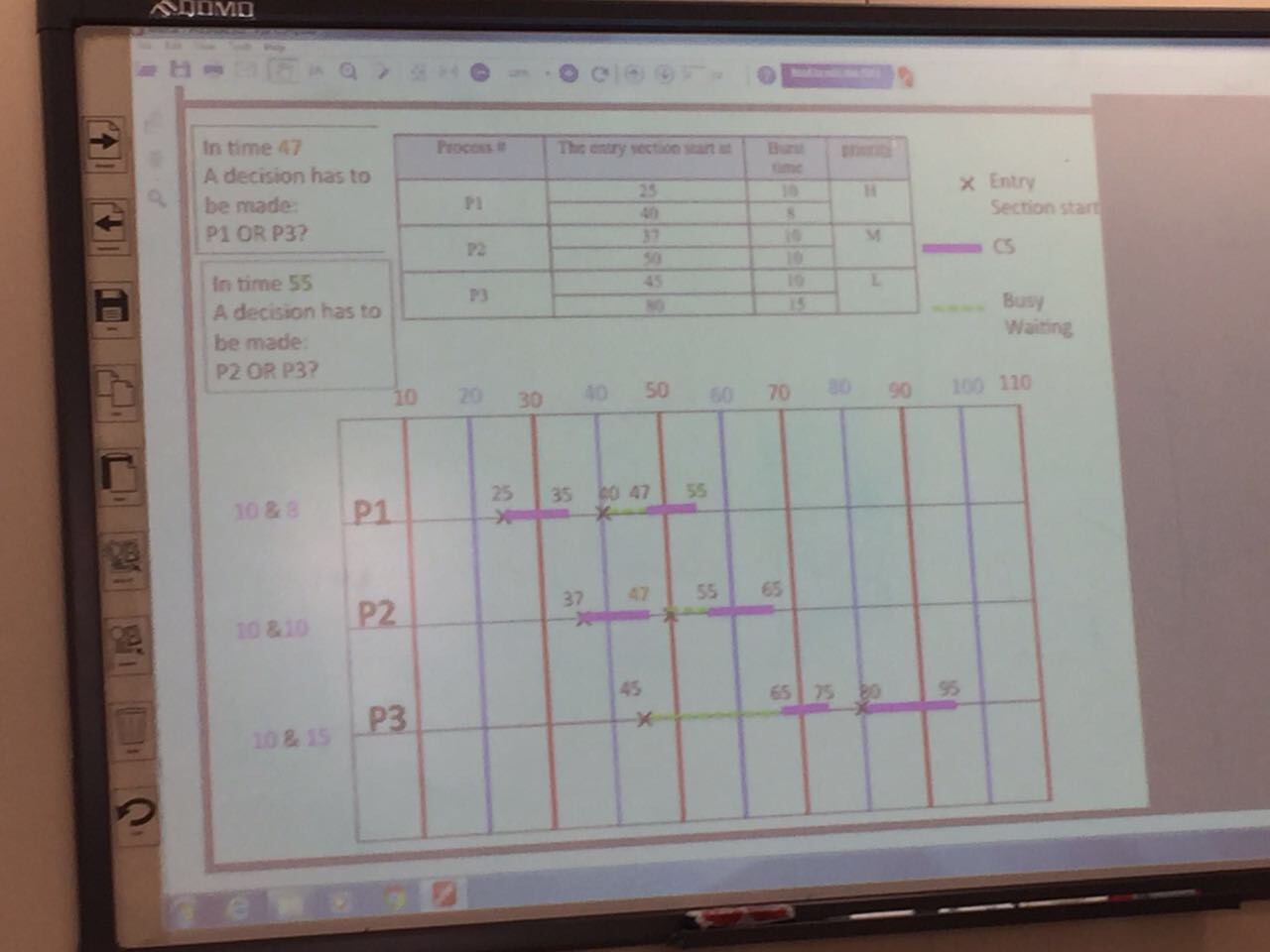
You are required to give a simple timing diagram to illustrate the behavior of the four processes. Mention the status of each of the four processes in each stage. Use the following legend:

• Remainder Section

• Critical Section

• Busy Waiting

**Solution:**

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