Real-Time Operating Systems

1 Question

Explain the advantages and disadvantages of partitioned scheduling (respect to global scheduling).

2 Question

Consider the following task set: $\Gamma = \{\tau_1 = (5, 26, 28), \tau_2 = (3, 8, 8), \tau_3 = (7, 33, 33), \tau_4 = (2, 5, 5)\}$. The tasks are implemented using the POSIX API, and scheduled on a POSIX compliant OS (using the optimal priority assignment). The worst case response time of task τ_1 is measured, and results to be $R_1 = 30$. Is this result compatible with theory? Can you explain it?

3 Question

Explain the advantages (and disadvantages) of HLP respect to NPP.

4 Question

Explain how a dual-kernel system (such as RTAI, Xenomai, and similar) reduces the kernel latency.