

# Real-Time Operating Systems

## Written Exam

### 1 Question

Consider the task set  $\Gamma$  composed by:

- 2 periodic tasks  $\tau_1$  and  $\tau_2$  with WCETs  $C_1 = 12$ ,  $C_2 = 15$  and periods (equal to relative deadlines)  $T_1 = 23$ ,  $T_2 = 60$
- a sporadic task  $\tau_3$  with WCET 8 and minimum inter-arrival time (equal to the relative deadline) 30

Is  $\Gamma$  schedulable in a POSIX compliant OS with a worst case latency  $L = 7$ ?

## 2 Question

Explain how IRQ threads can help in decreasing the kernel latency.

### **3 Question**

Explain how to implement a periodic task behaviour using the POSIX API, describing possible issues that can occur if a “relative sleep” function is used.

## 4 Question

Describe the Dhall's effect, with an example.