

## **Answers -**

### **1. What changes you would make to this interfaces for use in an RTOS environment?**

- a. Using Asynchronous I/O. Lets tasks continue execution while waiting for I/O operations to complete.
- b. Thread safe access. Usage of mutex to ensure the proper sharing of I2C bus to avoid race conditions.
- c. Error handling and recovery, this ensures robustness and fault tolerance in case of communication failures.

### **2. How might be the I2C Api be improved?**

- a. Error handling mechanism to be incorporated providing proper error codes.
- b. Configurable I2C parameters such as frequency, addressing mode to adapt to different hardware configurations.
- c. Having a higher layer abstraction layer which would provide apis like init, transfer mode, slave settings.