Shape

Description automatically generated with medium confidence

RMIT University

EEET2490 – Embedded System: OS and Interfacing, Semester 2022B

**ASSESSMENT 1 – TEST QUESTIONS**

Student Name: Student ID:

Date:

Test Duration: 90 mins (+ 15 mins for submission)

Submission: *source code (****whole project for each question 1 and 2****), this document (short answers if required + screen capture of output).*

**Question 1 (11 points)**

Create a project for **uart1**. Organize your source codes as below:

**./source** : *folder* to store **start.S main.c uart1.c uart1.h gpio.h**

**./script** : *folder* to store **link.ld**

**./object** : *folder* to store **all object files**

**./Makefile** : your Makefile *file* to build the project

Hint: ./ : refer to current folder ../ : refer to parent folder

1. Write the **Makefile** so that it can build the whole project with the structure as above. *The final image file (****kernel8.img****) must be placed in* ***object*** *folder.*
2. Modify the code to make the **uart1** runs with **baud rate 57600.** Test it with the real RPi4 board.

**Question 2 (14 points)**

1. Create driver for **uart5** mapping on **GPIO12-13** with **baud rate 57600**. Test it on the real RPi4 board.
2. Put both uart1 and uart5 drivers in the same project. Modify the **Makefile** so that

* “**make**” or “**make all**” will build the project with **uart1** by default
* **“make uart1**” will build the project with **uart1**
* **“make uart5**” will build the project with **uart5**

Note**:** *Attempt score may be given, thus, recommend to try doing both questions 1 & 2.*

ANSWERS - *For each question, take screenshots to demonstrate the output. In your code, provide appropriate comments for explanation (don’t need to capture code snippet here).*

**Question 1**

**Question 2**