1. How much memory and FLASH storage does the STM32F072R8 have?
The STM32F072R8 has 16 Kbytes of static RAM and 128 Kbytes of Flash memory for program and data storage.

2. What does the acronym "HAL" stand for?
The acronym “HAL” stands for hardware abstraction library.

3. What is the STM32CubeMX program used for?
The STM32CubeMX program used to graphically configure the project parameters and generate a ready-to-use µVision project.

4. Why can’t a "bare-metal" embedded application return from the main function?
In this application there is no way for the main function to return because there is not an operating system to catch the execution after the program exits.

5. In the system’s memory table, are the peripheral registers higher or lower in address than the SRAM?
The peripheral registers are higher in the address compared to the SRAM.

6. What information does each of the four main datasheets/manuals used in the labs provide?

- *(STM32F072RBT6 Datasheet) DM00090510.pdf*: the chip datasheet gives device-specific details on the processor. This includes the pin connectors for the chip packages that are available.
- *(Programming & Core Manual) DM00051352.pdf*: the core programming manual provides information on the ARM-core peripherals and information on the assembly instruction set; it is generic to all of the processors that belong to the STM32F0 family.
- *(Peripheral Manual) DM00031936.pdf*: the peripheral reference manual contains detailed information on all peripherals that are within an STM32F0 device; however, not all STM32F0 devices contain all the available peripherals. The chip datasheet is required to find which peripherals are available.
- *(Discovery Board Manual) DM00099401.pdf*: the Discovery board manual shows schematics and tables that detail the onboard devices and connectors attached to the STM32F0; also the Discovery board silkscreen also details many device connections.

7. Why do STM32F0 devices not recognize inputs/outputs on a chip by physical pin numbering?
Because different chip packages with differing numbers of pins, and the pin ordering between these is not consistent; GPIO pins are labeled with a port name (PA0 for example) which details where to go to configure it. Within the chip datasheet, we see a table mapping GPIO pin names to physical pin numbers on the specific chip package.

8. What is the name of ST’s header file that defines names for the peripheral registers?
The name of the ST’s header file is *stm32f0xx.h* that defines names for the peripheral registers.

9. What bitwise operator would you use to set a bit in a register?
To set bits inside the register, bitwise-OR its value with a bitmask

10. What peripheral enables the system clock to other peripherals?
The STM32F0 family has a dedicated peripheral known as the Reset and Clock Control (RCC) which enables or disables clock signals around the chip.

11. What peripheral do the HAL library delay functions use?
The SysTick timer peripheral is a device which raises a system signal at a configurable periodic rate; because the duration between the signals is a known quantity, the SysTick can be used as an application heartbeat. The HAL library uses the SysTick to trigger periodic tasks, for example, updating a global system time variable.

12. Why should you avoid floating-point values on an STM32F0?
Because many embedded devices, including the STM32F0, do not have support for the hardware for floating-point mathematics and must emulate it using large and slow code libraries. This can cause execution time to be slower and inefficient code.