Answer the following questions:

1. Refer to Tiva Launchpad User Guide: to which port are LEDs and buttons connected?

Ans: LEDs and buttons are connected to GPIO port F.

2. Refer to TM4C123G processor data sheet: what is the purpose of DIR, AFSEL and PCTL registers in GPIO?

Ans: DIR: specifies the direction of the pin whether it is an input or an output. Setting a bit as 1 configures the corresponding pin as output, whereas making it 0 configures the corresponding pin as input.
AFSEL: Controls the mode of the GPIO registers (alternate function select). If a bit is clear, the corresponding pin is used as GPIO and is controlled by GPIO registers. If a bit is set in this register, the corresponding GPIO line is configured to be controlled by an associated peripheral.
PCTL: Port control register is used to select one of the possible peripheral functions for the GPIO pins which are set to be controlled by an associated peripheral.

3. How much flash and RAM does Tiva board have? Specify the source of information.
Ans: The Tiva board has 256 kB flash memory, and 32 kB SRAM (Source: TIVA Launchpad User's Guide, p7).

4. What is the maximum clock speed supported by the processor? Specify the source of information.
Ans: Maximum clock speed supported by the processor Cortex-M4 is 400 MHz (Source: Cortex-M for Beginners, p4).

5. Refer to the memory model in TM4C123G processor data sheet. What are the addresses at which flash and RAM memory are mapped? (Confirm the same by trying to modify content of a memory location in the specified range. You should be able to modify a RAM location, but not a flash location. Use Memory Window in CCS for this purpose.)
Ans: Flash memory is mapped at address 0x0000.0000 to 0x0003.FFFF
RAM is mapped at address 0x2000.0000 to 0x2000.7FFF

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