REPORT

1. After you write 74 to /sys/class/gpio/export, will you receive an error when opening/sys/class/gpio/gpio74/direction? Explain your answer.

   A. The SPI controller driver in Linux is used for controlling the chip-select line and GPIO #10 is used as the chip select signal for Intel Galileo Gen 2. Thus, Linux doesnt want to use the GPIO #10 for configuration. From the GPIO muxing table, we can observe that GPIO #10 is multiplexed with GPIO74. So, the SPI controller driver is instructed on start-up by default to not use GPIO #10. Thus, we cannot set the direction of gpio74 on Linux.

2. Can we receive an interrupt when there is a rising edge on gpio38 which is connected to IO7 directly on Galileo Gen2 board? Explain your answer.

   A. From the muxing table of gpio pins, we can see that for IO7, the gpio pin is gpio38 and the interrupt modes column is left blank for it. Whereas, for all other pins, Low level, high Level, Rising, Falling edges are specified. Thus, we cannot receive an interrupt on gpio38.

3. After you export 3 to /sys/class/pwm/pwmchip0/export, what is the period of pwm3 signal? Can you modify it? Explain your answer.

   A. The period of PWM signals is 5000000 by default. In Intel Galileo Gen 2, the period of PWM signals cannot be modified individually. It has to be set for all channels at a time. Thus, when we type command to check for the period, there is a permission error. To modify this period, we need to specify the value in sys/class/pwm/pwmchip0/device directory.