

**List two things you can learn from a peripheral's functional description in the peripheral reference manual**

- You can learn what registers are associated with a peripheral and what functions the registers perform
- You can learn what the purpose of a peripheral is and how it can be used (sometimes even with examples given in the figures)

**What is the title of the first sub-section in the functional description of timers 2 and 3? • Not mentioned in the lab manual; look it up!**

- 18.1 TIM2 and TIM3 introduction

**What is the purpose of the Prescaler (PSC) register?**

- The PSC register controls a 16-bit counter that allows the clock for counters to be divided by factors between 1 and 65536

**What is the purpose of the Auto-Reload (ARR) register?**

- The Auto-Reload register contains the maximum value that a counter will count to before resetting to 0 and generating a “counter overflow” event.

**What is the purpose of the Capture/Compare (CCR<sub>x</sub>) register while the timer is operating in Output Compare mode?**

- In output capture mode, the capture/compare register is compared against the counter. When a match is found, the output compare function will assign a corresponding output pin to some assigned value defined by the output compare mode and the output polarity. It will also set a flag in the interrupt status register, generate an interrupt (if the corresponding interrupt mask is set) and send a DMA request if the corresponding enable bit is set.

**What does the duty-cycle of a PWM signal represent?**

- The duty-cycle of a PWM signal represents the relative amount of time that the signal will be “on”, and is expressed as a percentage of the total pulse length.

**What is the purpose of the Alternate Function mode for a GPIO pin?**

- For a GPIO pin, alternate function mode will allow data to be passed in or out via a peripheral rather than the input/output data registers.

**In what document can you find the documentation for what GPIO pins have which alternate functions?**

- The chip datasheet contains information on what GPIO pins have which alternate functions.