**Question 1: What starts the timer running?**

150000

**Question 2: What function executes when the timer interrupt occurs?**

blinkCopy = blinkCount;

**Question 3: What section of the code is interrupted by the timer interrupt?**

**Serial.print("blinkCount = ");**

**Serial.println(blinkCopy);  
delay(100);**

**Question 4: What is the purpose of the following functions:**

noInterrupts();

interrupts();

Because the the time for running different code may be the same, we want to make sure that the code running within the noInterrupt(); and interrupt(); will not be changed, or affected during that period. to read a variable which the interrupt code writes, we  
must temporarily disable interrupts, to be sure it will  
 not change while we are reading. To minimize the time  
 with interrupts off, just quickly make a copy, and then  
 use the copy while allowing the interrupt to keep working.  
 noInterrupts();  
 // critical, time-sensitive code here  
 interrupts();  
 // other code here

**Question 5: What is the purpose of bypass capacitors? Why might they be useful for this lab?**

In electronics, most of the circuits are digital in nature using direct current (DC). It has been observed that variations in voltage can cause problems to the circuit operation. A circuit may operate incorrectly due to voltage swing. In practical circuits, the voltage fluctuation is usually caused by the AC component that may ride over DC signal causing noise. Therefore, a bypass capacitor is needed to dampen the AC or noise present at all frequencies. Also, it prevents the unwanted communication between devices sharing the same power source.

this this lab, the signals transmitted from teensy board and received from potentiometer, or led can be more stable.

**Question 6: Is the LED affected by the period of the PWM output, or by the duty cycle (on time), or both? Can you run it too fast or too slowly?**

**LED will not be affected by the period, but the brightness of LED will be affected by the duty cycle. I can run it fast, but the difference of different color can not be so obvious, if we run it slow, we can obviously tell the different color and dimming effect.**