# Laboration 3 Task 1 Questions

1. What is the maximum value that the SysTick counter can start counting down from?   
Since the SysTick is a 24-bit counter, its highest starting value is 224 – 1, which is about 16.7 million.  
  
2. What are the addresses of the CTRL, LOAD and VAL registers?

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| **Registers** | **Addresses** |
| CTRL | 0xE000E010 |
| LOAD | 0xE000E014 |
| VAL | 0xE000E018 |

3. To use register names (CTRL, LOAD and VAL) in my assembly code, how to define them? (Hint: EQU)   
EQU - directive gives a symbolic name to a numeric constant, a register-relative value or a PC-relative value.  
Syntax (name EQU expr{, type})  
- Name: is the the symbolic name to assign the value  
- Expr: is a register-relative address, a PC-relative address, an absolute address, or a 32-bit integer constant  
- Type: is optional, (type) can be any of (arm, thumb, code32, code16, data)  
EQU basically gives names to different expressions(registers) which means u can give them the name of CTRL, LOAD, VAL etc.  
  
4. What is the value to be written in the LOAD register to activate the SysTick interrupt every 2 ms, in case the Clock Source is 12MHz?   
LOAD Value = (Clock Source(12MHz) \* Period(2ms)) – 1  
Which means the LOAD Value is going to be 23999.  
  
5. What are the clock sources that you choose from to configure the SysTick?   
Clock sources  
0 – External Clock  
1 – Processor Clock  
  
6. Write down an assembly program that enables SysTick interrupt with a period of 5 ms.  
See program