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| Course Title: **Microprocessor Laboratory** | Course code**: CSL1543** |
| Lab Session: **2** | Student Name:  USN :  Date : |
| Title: **Introduction to Keil and Cortex programming** |
| Faculty Signature: | Marks(out of 10): |

**Objective:** Differentiate between a Microprocessor and a Microcontroller, Devise the need of cross compilers(keil), write M0 processor assembly programs.

**Answer the following questions:**

**1) State the differences between a Microprocessor and a Microcontroller?**

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**2)List out some of the available cross compilers?**

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**3) Define assembler, compiler and linker?**

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**4) Write the naming conventions used with processor "NUC140VE3AN"?**

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| **Letter** | **Meaning** |
| NUC series in Nuvoton |  |
| 1 in letter 140 |  |
| 4 in letter 140 |  |
| 0 in letter 140 |  |
| V in VE3AN |  |
| E in VE3AN |  |
| 3 in VE3AN |  |
| A in VE3AN |  |
| N in VE3AN |  |

**5) Write the Significance of CMSIS?**

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**6) Write a Cortex M0 assembly programs for the given problem statements by adding suitable comments in the code.**

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| **i) program to perform addition of two 32-bit Hexadecimal numbers** |
| **ii) program to perform addition of two 64-bit Hexadecimal numbers** |
| **iii) Program to perform subtraction of two 64 bit Hexadecimal numbers** |
| **iv) program to perform swapping of two hexadecimal numbers** |