**B.N.M. Institute of Technology**

**An Autonomous Institution under VTU**

**Department of Information Science and Engineering**

**Microcontroller and Embedded System (22ISE142)**

**Question Bank for Module 1**

1. Compare and Contrast microprocessor and microcontroller.
2. Explain ARM core data flow model with a neat diagram.
3. Along with neat diagram of an ARM based embedded system (Microcontroller), explain the hardware components.
4. Explain the different processor modes provided by ARM7.
5. Give the schematic of a Current Program Status Register of ARM7 processor briefing the individual bits.
6. What s Pipelining. Explain in detail schematically.
7. Discuss the ARM design philosophy.
8. Describe conditional execution. Write the different code suffix.
9. Differentiate between RISC and CISC processors.
10. Explain the major design rules to implement the RISC philosophy.
11. Briefly describe the concept of exceptions, interrupts and the vector table.
12. Explain the programmer’s model of ARM processors with complete register sets available.
13. What is pipeline in ARM? Illustrate with an example. Show the pipeline stages of ARM7, ARM9 and ARM10.

**Question Bank for Module 2**

1. Explain the MOV instruction set provided by ARM7 with the example for each.
2. Write a program for forward and backward branch by considering an example.
3. Write and explain arithmetic instructions with respect to the ARM processor.
4. Design ARM assembly language program to perform the addition and multiplication of two 32 bit numbers.
5. Explain the different branch instructions of ARM processor
6. Explain the different barrel shifter operations with suitable examples.