EMBEDDED SYSTEMS

ASSIGNMENT QUESTIONS - 1

PART – A

**Answer all Questions.**

1. a) Define embedded system.

b) List the applications of embedded systems

1. Explain some of the features of ARM Processor.
2. Describe the features of RISC processors.
3. Name the classification of embedded system.
4. a) Mention two important points when selecting a CPU for designing an embedded system.

b) List any four examples of embedded systems

1. a) Give the ARM processor Architecture versions.

b) Mention few features of ARM processor versions with example ARM Cores.

1. a) What are the basic requirements while designing an embedded system?

b) List and explain the hardware units that must be present in the embedded systems.

1. a) What are the various modes of ARM core?

b) Differentiate ARM mode and Thumb mode.

1. a) What is thumb mode? Mention its importance.

b) What is pipeline?

1. a) Mention few differences between ARM7 and ARM9 Cores.
2. Differentiate between RISC and CISC processors.

PART – B

**Write answer for any four Questions.**

1. Draw the structure of embedded systems and explain its hardware components.
2. a) Explain Design metrics and Quality attributes of an embedded systems

b) Describe a system-on-chip.

1. a) Explain the challenges of designing an embedded system.

b) Explain characteristics of an embedded system.

1. a) Differentiate between embedded system and general purpose computing system.

b) Describe embedded hardware and embedded software.

1. Explain design process of an embedded system with example.

PART – C

**Write answer for any four Questions.**

1. a) Describe the ARM processor families.

b) Draw and explain the configuration of CPSR register.

1. Draw architecture of ARM7 processor and explain its blocks.
2. a) What are the pipelining stages of ARM7 & ARM9 CPU?

b) Classify the instruction set of ARM?

1. a) What is the need of link register and SPSR in ARM?

b) Explain any three data processing instructions of ARM processor.

1. a) Describe two branch instructions in ARM.

b) List the various interrupt sources of ARM and its corresponding addresses.

c) What is the importance of AMBA bus?