



N. B.: (1) All questions are compulsory.

(2) Make suitable assumptions wherever necessary and state the assumptions made.

(3) Answers to the same question must be written together.

(4) Numbers to the right indicate marks.

(5) Draw neat labeled diagrams wherever necessary.

(6) Use of Non-programmable calculators is allowed.

1. Attempt any three of the following:

15

- Differentiate between General Purpose and Embedded Systems.
- List and explain any 5 purposes of Embedded systems.
- Differentiate between Microprocessor and Microcontroller.
- Differentiate between RISC and CISC.
- What are Programmable logic devices?
- Explain the concept of Commercial Off The Shelf products (COTS).

2. Attempt any three of the following:

15

- Explain the working of Washing machine
- Write a note on memory map.
- What is SRAM (Static Random Access Memory)?
- What is DRAM (Dynamic Random Access Memory)?
- What is Programmable Read Only Memory (PROM)?
- What is Erasable Programmable Read Only Memory (EPROM)?

3. Attempt any three of the following:

15

- What are the various criteria for choosing a Microcontroller?
- Draw the block diagram for 8051. Also explain its various features.
- Write a note on 8051 oscillator and clock.
- What is Special Function Register (SFR)?
- Explain the concept of port1, port2, port3, port4.
- Write a note on external memory.

4. Attempt any three of the following:

15

- What are the factors to be considered in selecting a controller?
- What are the various power saving modes?
- Write a note on oscillator unit.
- Write a note on 8051 Interrupt system.
- Explain the role of an infinite loop in programming Embedded systems.
- Explain the build process of an Embedded system.

5. Attempt any three of the following:

15

- What are the functions of real time Kernal?
- List and explain the categories of real time operating system.
- List and explain the advantages and limitations of simulator based debugging.
- What are the various objectives of Embedded Development Life Cycle?
- List and explain various phases of embedded development life cycle.