

MA

Q.P. Code: 25313

[Time: 3 Hours]

[Marks: 80]

Please check whether you have got the right question paper.

- N.B:
1. Question no. 1 is compulsory
  2. Solve any three questions out of remaining questions.
  3. Figures to the right indicate full marks.
  4. Assume suitable data where necessary.

- Q. 1
- a) Explain the concepts of Cortex-A, Cortex-R and Cortex-M. 05
  - b) Compare instructions ACALL and LCALL of 8051. 05
  - c) What is significance of RESET in microcontroller? How to implement manual and power on reset in 8051? 05
  - d) Explain features of ARM 7. 05
- Q. 2
- a) Explain memory management mechanism in ARM 7. 10
  - b) Explain PORT 1 structure of 8051. 10
- Q. 3
- a) Write an assembly language program for 8051 to arrange series of ten 8 bit numbers in ascending order. Series starts from memory address 2500H onwards. 10
  - b) Interface DAC 0808 to 8051 and write assembly program to generate triangular waveform. 10
- Q. 4
- a) Design 8051 based system with following specifications. 10
    - i) 8051 is working at 10 MHz
    - ii) 8 KB External Program memory using 4 KB chips
    - iii) 16 KB External Data memory using 8 KB chips
  - b) Explain operating modes of ARM 7. 10
- Q. 5
- a) Explain characteristics of Embedded System with examples. 05
  - b) Explain Stepper motor controller as Embedded System. 05
  - c) Explain addressing modes of ARM 7. 10
- Q. 6
- a) Explain Interrupt structure of 8051. 10
  - b) Interface CD to 8051 and write assembly language program to display message "HELLO" on 10

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