

[Time: Three Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:**
1. Question.No.1 is compulsory.
 2. Attempt any **three** questions out of the remaining **five** questions.
 3. Figures to the **right** indicate **full marks**.
 4. Assume suitable data wherever required but justify the same.

1. Answer any **FOUR** (4) **20**
 - (a) Compare RISC processors with CISC processors.
 - (b) Write important features of 8051.
 - (c) Explain pipeline feature of ARM7.
 - (d) Compare the features of macros and functions.
 - (e) List important features of MSP430.
2. (a) List addressing modes of 8051 and explain each one with an example. **10**
 - (b) Write an embedded C program to blink a LED using ARM7 processor. Write a neat block diagram of the interface. **10**
3. (a) Write the steps to interface an 8-bit ADC with 8051. Draw a neat interface diagram. **10**
 - (b) Explain operating modes of ARM 7 processor. **10**
4. (a) Explain different power modes of MSP430? How can we select a power mode? **10**
 - (b) With suitable examples explain how to optimize a program for speed? **10**
5. (a) What is an RTOS? List and explain different blocks of a typical RTOS. **10**
 - (b) Explain priority inversion with a neat diagram. How can it be solved? **10**
6. Write short note on the following: **20**
 - a) HW/SW Co-design b) 8051 Assembler directives
 - c) CPSR of ARM7 d) Embedded C