

[illegible]

Total No. of Questions : 08

Paper ID : [75809]

Max. Marks : 60

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. Draw the detailed block diagram of ARM Cortex-M3 processor and explain the role of each block. (12)
2. a. Explain the different external Advanced High-performance Bus (AHB)-Lite bus interfaces. (6)
b. Write an ARM assembly language program to arrange ten-32 bit numbers in descending order. (6)
3. a. Explain the following instructions of ARM processor with suitable example :
i. ADR Rd,<lebal>
ii. SDIV Rd, Rn, Rm
iii. LSL Rd, Rn, Rs
iv. LDRSH Rd, [Rn,<op2>] (6)
b. Explain the interrupt late-arrival and interrupt tail-chaining mechanisms to reduce interrupt latency. (6)
4. a. Draw and explain the internal architecture of LPC 17xx microcontroller. (6)
b. Discuss the role of following I/O in LPC 17xx microcontroller :
i. PWM
ii. UART
iii. RTC (6)

5.
 - a. Explain the different techniques adopted for increasing the number of memory accesses/instruction cycle in DSP processors. (6)
 - b. Explain the different types of shifting instructions provided in DSP processors with suitable example of each. Also discuss the different categories of DSP processor instructions which support exponent detection and normalization. (6)
6.
 - a. Draw and explain the internal architecture of TMS320C6x processor. (6)
 - b. How interrupts are handled by TMS320C6x DSP processors? Explain with suitable diagram. (6)
7.
 - a. What is addressing mode? Describe how modulo addressing and bit reverse addressing improves the performance in DSP processor. (8)
 - b. Discuss the role of MAC unit in DSP processors. (4)
8. **Write note on following :**
 - a. Software Development Flow for CCS
 - b. UART (12)