Code No: 5677AB

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. Tech I Semester Examinations, July/August - 2021
MICROCONTROLLERS AND PROGRAMMABLE DIGITAL SIGNAL PROCESSORS
(Embedded Systems and VLSI Design)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

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1. Draw the architecture of ARM controller and explain the operation of each block in it. [15]

2.a) Performance processors, Real-time profile targeted at real-time systems and Microcontroller profile that is targeted at deeply embedded applications. List at least two features supported by each of these profiles. Also, state if a profit supports both the ARM and THUMB instruction sets. The ARM processor has got four branch instructions, namely B, BL, BX, BLX.
b) What is the difference between the instructions, B and BL? What is the difference between the instructions, BL and BLX in ARM? [8+7]

3.a) Describe the concepts of Vectored Interrupt Controller.
b) Explain about Interrupt Inputs and Pending Behavior in Cortex M3 processor. [8+7]

4. Explain about SYSTICK Timer and Interrupt Sequences of ARM Cortex-M3 processor. [15]

5.a) What are the functionalities of LPC 17XX general purpose parallel I/O (GPIO).
b) Write a short note on timers of LPC 17XX Microcontroller. [8+7]

6. Explain about the internal memory of LPC 17XX microcontroller. [15]

7.a) Briefly describe the Multi port memory of programmable DSP processors.
b) Explain in detail about the on chip peripherals and processor benchmarking. [7+8]

8.a) Briefly explain about program control unit of TMS320C6000 processor.
b) Describe the various on-chip peripherals of DSP TMS320C6000 processor. [7+8]

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