Register Number……

M.E., DEGREE EXAMINATIONS: NOV/DEC 2012

Third Semester

EMBEDDED SYSTEMS

EST554: Embedded Processors

Time: Three Hours **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 2 = 20 Marks)

1. State various memory formats in ARM architecture.
2. List out the ARM processor families.
3. How Arm Instruction set is organized based on function?
4. Write a few lines about Current Program Status Register (CPSR).
5. Identify the architecture features of ARM processor that make it favorable for DSP applications.
6. How are interrupts assigned?
7. Write any four advantages of Blackfin processor.
8. What is meant by cache memory?
9. Write an outline about real time processing.
10. Delineate digital image processing.

PART B (5x16=80Marks)

11. a) Elucidate the ARM architecture with neat diagram.

(OR)

b) (i) With suitable example, explain how a constant is loaded into general purpose register of ARM processor. (10)

(ii) Explain how the changes of modes take place in ARM processor. (6)

12. a) Explain any 16 instructions of Arm and its action.

(OR)

b) Write an assembly language program for controlling a robot with three degrees of freedom using ARM instruction set.

13. a) Delineate the role of ARM with Digital Signal Processing (DSP) and what are the advantages of integrating a co-processor with standard ARM processor?

(OR)

b) Draw and Explain in detail about the Interrupt handling schemes in ARM processor.

14. a) Draw a diagram and explain the architecture of Blackfin processor.

(OR)

b) Categorize the various types of dynamic power management in Blackfin processor. Explain each of them.

15. a) How DTMF signal generators works and also explain its time and frequency domain characteristics.

(OR)

b) Elucidate the 8-band graphic equalizer implementation using FIR filtering to modify the frequency content of audio signals.

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