C 15886 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, MAY 2011

BM IC AU / EC 04 804 (A) – DSP CONTROLLERS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) What are the ports available in TMS 320 C6X processors?

(b) Explain any *two* addressing modes of TMS 320 C6X processor.

(c) How to implement floating-point arithmetic on the TMS 320 C6X processor?

(d) Write a subroutine sub program to implement the floating-point addition using SATL and SATH.

(e) Explain the operation of the four-level pipeline for single-word single cycle instructions executing with no wait states.

(f) With neat block diagram, explain the adaptive noise canceller.

(g) What is a code compressor studio? Explain its functions.

(h) Explain any *one* application of TMS 320 C6X processor.

(8 × 5 = 40 marks)

II. (a) With neat sketch, explain the architecture of TMS 320 C6X.

Or

(b) Draw the block diagram and explain the Direct Memory Access using a PC environment.

III. (a) Write an assembly language program to implement a differential and convolutional encoder for a modern application.

Or

(b) (i) Explain in detail about the fixed and floating point formats.

(ii) Write a subroutine subprogram to implement the floating point multiplication.

(8 + 7 = 15 marks)

IV. (a) (i) With necessary equations, explain the means of adapting the coefficients in C6X.

(ii) Write a short notes on code optimization.

(8 + 7 = 15 marks)

Or

(b) Explain the different design techniques available for IIR filters.

Turn over

V. (a) Discuss in detail about the device and development support tool nomenclature.

Or

(b) Write short notes on :

(i) Assemblers.

(ii) Compilers.

(7 + 8 = 15 marks)

[4 × 15 = 60 marks]