M. Tech.-II (Electronics V.L.S.I.) (CBCS – 2015 Course) : WINTER - 2018

SUBJECT: ADVANCED DIGITAL SIGNAL PROCESSING

Day : Monday
Date : 19/11/2018

W-2018-3140

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60.

N.B.:

1) All questions are **COMPULSORY.**
2) Figures to the **RIGHT** indicate full marks.
3) Both the sections should be written in **SEPARATE** answer books.
4) Assume suitable data, if necessary.

SECTION-I

Q.1 What is meant by linear prediction? Compare forward and backward linear prediction. **(10)**

OR

Briefly explain Levinson-Durbin algorithms.

Q.2 Explain the following terms for a typical adaptive filter: **(10)**

a) Rate of convergence
b) Misadjustment
c) Tracking

OR

Explain in detail the LMS algorithm for FIR adaptive filtering.

Q.3 Explain the following terms: **(10)**

a) Power spectrum
b) Spectral estimation
How can the energy spectrum density be determined?

OR

How is power spectrum estimated in parametric methods?

SECTION-II

Q.4 What do you mean by pipelining in the context of DSP? Explain with the help of neat sketch and suitable example. **(10)**

OR

What are the difference between fixed-type processors and floating type processors? List the basic characteristics of digital signal processor.

Q.5 List and discuss the various addressing modes used in the TMS320C6X processer. **(10)**

OR

With the help of block diagram explain the architecture of TMS320C6X.

Q.6 State the equations and properties of FT, STFT and DWT. Compare the three. **(10)**

OR

What is sub-band decomposition? Explain the difference between CWT and DWT.

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