Total No. of Questions : 8]

SEAT No. :

P4015

[Total No. of Pages : 2

[5155] - 263
M.E. (E&TC) (VLSI & Embedded Systems)
EMBEDDED SIGNAL PROCESSORS
(2013 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates :

1) ***Attempt any five questions.***
2) ***Draw neat diagrams wherever necessary.***
3) ***All questions carry equal marks.***
4) ***Assume suitable data wherever required.***
5) ***Figures to right indicates full marks.***

Q1) a) Explain Moving-Average Filters with their Structures and Equations. **[4]**

b) Discuss Linear Convolution with suitable example. **[3]**

c) Explain the terms convolution, correlation & covariance. **[3]**

Q2) a) Compare FIR & IIR filters. Which types of filters are used more in practice? Why? **[4]**

b) What is zero-padding? Explain its significance. **[3]**

c) Explain applications of Notch Filters. **[3]**

Q3) a) Explain Linear & Non-Linear filters with suitable examples. **[4]**

b) Explain Design and Applications of Adaptive Filters. **[3]**

c) Describe Sampling & Quantization. **[3]**

Q4) a) Discuss design steps of IIR filters using Bilinear Transformation method. **[4]**

b) Write a short note on DFT. **[3]**

c) Explain FFT. **[3]**

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Q5) a) What are structures? Explain its types. **[4]**

b) Explain the characteristics of Window Function. **[3]**

c) Write short note on Gibb's phenomenon. **[3]**

Q6) a) Describe MAC and Barrel shifter in DSP processors. **[4]**

b) Explain application of DSP in image processing. **[3]**

c) Draw and Explain architecture overview of Black fin processor. **[3]**

Q7) a) Explain the architecture of DSP processor with neat diagram. **[4]**

b) Give different addressing formats of DSP processors. **[3]**

c) With neat block diagram explain the software development tools used for designing DSP system. **[3]**

Q8) a) Explain Wavelet algorithm in brief. **[4]**

b) Discuss the DSP application in image enhancement. **[3]**

c) Explain adaptive filtering algorithm for system identification. **[3]**

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