

5. Attempt any two of the following : (10×2=20)

- Draw the flow graph of an 8 point DIF FFT algorithm and explain.
- Define Goertzel algorithm.
- Explain Fourier analysis of continuous time signals using DFT.

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TEN701

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0300

Roll No.

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B.Tech.

(SEM. VII) ODD SEMESTER THEORY EXAMINATION

2010-11

FUNDAMENTAL OF DIGITAL SIGNAL PROCESSING

Time : 3 Hours

Total Marks : 100

Note : Attempt all questions.

1. Attempt any four parts of the following : (5×4=20)

- Determine the response of the following system to the I/P signal :

$$x(n) = \begin{cases} |n| & -3 \leq n \leq 3 \\ 0 & \text{otherwise} \end{cases}$$

(i) $y(n) = x(n-1)$

(ii) $y(n) = x(n+1)$

- For each of the following impulse response of LTI systems indicate whether or not the system is causal :

(i) $h[n] = u(n+2) - u(n-2)$

(ii) $(\frac{1}{2})^n u(n-1)$

5. Attempt any two of the following : (10×2=20)

- (a) Draw the flow graph of an 8 point DIF FFT algorithm and explain.
- (b) Define Goertzel algorithm.
- (c) Explain*Fourier analysis of continuous time signals using DFT.

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(i) $y(n) = x(n-1)$

(ii) $y(n) = x(n+1)$

- (b) For each of the following impulse response of LTI systems indicate whether or not the system is causal :

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