



13. Determine 8-point DFT of the sequence $x(n) = \{3, -1, 4, 5, 9, -8, 7, 10\}$ using DIF FFT algorithm. 10

14. Design an ideal HPF whose desired frequency response is

$$H_d(e^{j\omega}) = \begin{cases} 1, & \pi \geq |\omega| \geq \frac{\pi}{3} \\ 0, & \text{otherwise} \end{cases}$$

using Bartlett Window for $N = 9$.

10

15. Design a digital Chebyshev Type – I BPF with the following specifications :

$$H(e^{j\omega}) = \begin{cases} -3 \text{ dB}, & 0.55 \pi \leq \omega \leq 0.65 \pi \\ -15 \text{ dB}, & 0 \leq \omega \leq 0.1 \pi \text{ and } 0.95 \pi \leq \omega \leq \pi \end{cases}$$

Using bilinear Transformation.

10

16. Explain various CPU components of TMS 320 C 54 xx processor with the help of a neat block diagram. 10

17. Write short notes on :

a) Sampling of analog signals. 3

b) RISC Vs CISC CPU. 4

c) Advantages of FFT algorithm. 3