Viva Question module 1, 2, and 3

1. Differentiate among analog, discrete, quantized, and digital signal.
2. Give the mathematical and graphical representation of
    a. Unit sample sequence
    b. Unit step sequence.
3. Draw the basic block diagram of a digital processing of an analog signal.
4. Define transfer function.
5. How is Z-transform related to DFT?
6. When is a discrete time signal said to be symmetric (or) anti-symmetric?
7. Explain DTFT and DFT
8. Analysis and synthesis equation of DFT.
9. What do you understand by frequency sampling in DFT
10. Application of Fourier Transform
11. List and explain properties of DFT.
12. State and prove Parseval's relation in DFT.
13. State and prove convolution property of DFT.
14. Determine the DFT of the sequence x (n) = {1, -1, 1, -1}.
15. What is FFT?
16. What do you meant by radix?
17. Draw flowgraph of DIT-FFT and DIF-FFT algorithm.
18. Calculate the number of multiplication's needed in the calculation of DFT and FFT with 64-point sequence.
19. How is FFT faster?
20. What is meant by in – place computation in DIT-FFT and DIF-FFT algorithms?
21. Define circular convolution of signals.
22. How will you perform linear convolution using circular convolution?
23. What are the methods adopted for sectioned convolution? (overlap add and save algorithm)
24. In which FFT algorithm, the output is bit reversed.

1. What are the advantages of FIR filters?
2. What are the advantages of IIR filters?
3. Plot the magnitude response of ideal Low pass filters.

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4. Plot the magnitude response of ideal High pass filters.
5. Plot the magnitude response of ideal Band pass filters.
6. Plot the magnitude response of ideal Band stop filters.
7. What are the four possible types of linear phase FIR filters?
8. What are the design techniques for linear phase IIR filters?
9. What is Gibbs Phenomenon?
10. Define FIR filters.
11. Define IIR filters.
12. How LTI systems behave as a frequency selective filter?
13. How are phase distortion & delay distortion introduced?
14. Write the steps involved in FIR filters.
15. How is constant group & phase delay achieved in linear phase FIR filters?
16. What is necessary & sufficient condition for the linear phase characteristic of an FIR filters?
17. Write the frequency response of linear phase LTI system with constant phase & group delay.
18. Write the magnitude & phase function of FIR filters when impulse response is symmetric & N is odd.
19. Write the magnitude & phase function of FIR filters when impulse response is symmetric & N is odd.
20. Write the magnitude & phase function of FIR filters when impulse response is anti-symmetric & N is even.
21. Write the magnitude & phase function of FIR filters when impulse response is symmetric & N is odd.
22. Write the magnitude & phase function of FIR filters when impulse response is anti-symmetric & N is even.
23. Compare IIR & FIR filters.
24. Compare Digital & analog filters.
25. Classify the filters based on frequency response.
26. What are the requirements for an analog filter to be stable & causal?
27. What are the requirements for a digital filter to be stable & causal?
28. What is aliasing?
29. What is frequency warping?
30. What is pre-warping?

31. Write the properties of Butterworth filter.

32. Write the properties of Chebyshev filter.

33. List two methods used for design of IIR filter.

34. List two methods used for design of FIR filter.