

Reference Question Bank for SAS Integrated Lab (21EC42)

1. Generate a DT unit impulse/ unit step/ unit ramp/ Sinusoidal/ real exponential/ random a/ complex exponential signal and plot them in same figure window. Take length of signal by user. **(any four signals specified)**
2. Generate a DT unit impulse/ unit step/ unit ramp/ Sinusoidal/ real exponential/ random a/ complex exponential signal and plot them in different figure windows. Take length of signal by user. **(any four signals specified)**
3. Performing signal operations:
Folding/ Shifting/ time scaling on signals $x(n) = \sin(\Omega_0 n)$ and plot the signals. **(Different signal may be given)**
4. Performing signal operations:
Addition/ multiplication/ Amplitude scaling of discrete time signals $x(n) = -2u(n)$, $y(n) = \sin(2\pi n/N)$. **(Different signals may be given)**
5. Compute of energy of given nonperiodic signal and power of given periodic signal.
6. Find even and odd parts of a signal and show that signal can be obtained by adding even and odd parts of it.
7. Verify linearity and time variance properties of a given system and display the result.
8. Perform convolution of two DT signals without using built in command.
9. Perform convolution of two DT signals using function program.
10. To perform cross correlation operation between two signals and verify all properties.
11. To perform auto correlation operation between two signals and verify all properties.
12. Solve the given difference equation with initial conditions for given input and find the output.
13. Find transfer function, frequency response, impulse response and system response of a system defined by difference equation for the given input. Also plot poles and zeros.
14. Find Fourier series of a signal $x(n) = \sin(\frac{2\pi n}{N})$ and show that series repeats for $M > N$.
(different signals may be given)
15. Find Fourier transform of a signal $x(n) = (\frac{1}{2})^n u(n)$ **(different signals may be given)**
16. Finding DFT of a signal $x(n) = \{1 -2 3 -4\}$ and plotting the spectra. **(different signals may be given)**
17. Using DFT analyze spectrum of sum of two or more signals.
18. Perform sampling of a CT signal and analyze in both time and frequency domain.