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<th>Subject/Subject Code</th>
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**Question Bank**

**Module-1**

1. Give Classification of signals and systems with suitable examples.
2. Explain about basic Signal operations and properties.
3. State and prove Sampling Theorem.
4. Explain about basic System properties.

**Module-2&3**

1. What do you mean by Impulse response? State its advantages.
2. Define continuous time LTI systems with suitable example.
3. Define discrete time LTI systems with suitable example.
4. Define convolution integral for CT- LTI.
5. Write in details properties of convolution.
6. Define convolution sum for DT- LTI.
7. Write in details properties of convolution summation.

**Module-4**

1. Write a short note on Fourier Series.
2. Discuss in brief Frequency spectrum of aperiodic signals.
3. Write a short note on Fourier Transform.
5. State and prove properties of Fourier Transform.
Module-5

1. Define The z-Transform.
2. Explain in brief about Convergence of z-Transform.
4. Write down the different techniques used for finding the inverse Z-transform.
5. Write a short note on ROC.
6. Determine the z transform, including the ROC of the sequence
   \[ X[n] = \left( -\frac{1}{3} \right)^n u(n) - \left( \frac{1}{2} \right)^n u(-n - 1) \]
7. Determine the inverse Z-transform.
   \[ X(z) = \frac{1 - \frac{1}{2} z^{-1}}{1 - \frac{3}{4} z^{-1} + \frac{1}{8} z^{-2}} \quad \text{for} \quad |z| > 1/2 \]
8. Find inverse Z transform of
   \[ X(z) = \frac{z(z^2 - 4z + 5)}{(z-1)(z-2)(z-3)} \]
   For ROC i) 2 < |z| < 3 \quad \text{ii) } |z| < 1

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