

❓ **What type of spectrum is periodic due to aliasing?**

- **Answer:** Sampled spectrum

❓ **What does the impulse response of an FIR filter represent?**

- **Answer:** A sequence of values for a unit impulse input

❓ **Which window function is the simplest to implement but prone to high spectral leakage?**

- **Answer:** Rectangular window

❓ **What is a common task in image processing?**

- **Answer:** Compression

❓ **What does multimedia processing primarily involve?**

- **Answer:** Managing and analyzing multimedia data such as text, images, audio, and video

❓ **What does the digital spectrum represent?**

- **Answer:** Frequency components of a digital signal

❓ **Which structure is typically used to implement FIR filters?**

- **Answer:** Tapped delay line

❓ **What is the purpose of a window function in digital signal processing?**

- **Answer:** To modify the shape of a signal

❓ **Which spectrum represents the magnitude of a signal's Fourier transform?**

- **Answer:** Magnitude spectrum

❓ **What is a key characteristic of window functions?**

- **Answer:** They ensure a finite signal duration

❓ **What distinguishes an IIR filter from other filter types?**

- **Answer:** It has an impulse response that lasts forever

❓ **What does "IIR" stand for in IIR filters?**

- **Answer:** Infinite Impulse Response

❓ **What makes FIR filters inherently stable?**

- **Answer:** Finite number of past input samples

❓ **Which of the following filters is known for a smooth magnitude response?**

- **Answer:** Butterworth Filter

❓ **Which multimedia application involves face recognition and video surveillance?**

- **Answer:** Security

❓ **What problem do window functions help reduce in spectral analysis?**

- **Answer:** Spectral leakage

❓ **Which transform is specifically used for signal compression, such as in JPEG?**

- **Answer:** Discrete Cosine Transform (DCT)

❓ **What characteristic is unique to Chebyshev filters?**

- **Answer:** Sharpest transition with ripples in both bands

❓ **What is a defining characteristic of FIR filters?**

- **Answer:** Finite memory and impulse response

❓ **Which multimedia processing technique includes tokenization and stemming?**

- **Answer:** Text processing