**Assignment No. 01**

**Digital Signal Processing**

**Covers CLO-2 and PLO-1**

**Q1: Let x(n) be the sum of sinusoidal signals.**

x(n) = 4 + 3cos(πn) + 2cos(2πn) + cos(3πn)

**Determine the minimum sampling rate that will not cause any aliasing effects, that is, the Nyquist rate. Determine the folding frequency.**

**Q2. Explain briefly what is meant by Multirate sampling, Up-Sampling (Interpolation), Down-Sampling (Decimation), and folding frequency?**

**Q3. Explain the concept of Normalized frequency.**

**Q4. What are the different sampling rates of voice, music, video in latest mobile phones?**

**Q5. What are the frequency bands utilized for 4G and 5G?**