1) Explain Time and frequency domain modelling.
2) Define Nyquist frequency, Period, frequency, phase.

3) Filters. Basic classification and properties. Transfer function.
4) Spectral properties of AR and MA models.
5) Bias and variance of the periodogram.
6) Blackman–Tukey Spectral Estimate, Bartlett Method for periodogram estimator, tapers.
7) Long Memory Processes. Definition and properties.
8) Estimation of long memory - Whittle estimators
9) Estimation of long memory – heuristic methods
10) Fractional Gaussian noise (fGn), Fractional Brownian motion (fBm), Fractional ARIMA.
11) Fourier transform in finance and its properties.
12) Wavelets in finance, major differences to Fourier transform.
13) Wavelet coherence.
14) Describe a self-similar process.
15) Spectral density estimation.