JEM 059 Quantitative Finance I
Questions for State Exams

1) Assets, Prices, Returns, Derivatives. Market information and efficiency. Definitions and properties.
2) The Random Behavior of Assets-Random Walk, geometrical Brownian motion, Moving Average Models. Definitions.
3) Volatility. Definition and properties.
4) GARCH Models. Forecasting Volatility and Correlation.
5) Statistical Models for Financial Markets. Time Series Models.
6) Threshold AR and threshold (G)ARCH models.
7) Trends and de-trending of financial time series.
8) Describe Box-Jenkins approach.
9) Forecasting volatility with GARCH and EWMA models.
10) GARCH models with t innovations.
11) Stationarity – Definition and testing.
12) Financial models based on high-frequency data.
13) Statistical properties of the realized variance estimator.
14) Forecasting of volatility with high-frequency data.
15) Role of microstructure noise and jumps in the volatility estimation.