What do the Quiz and Interviews cover?

- Be familiar with concepts such as: The Black Scholes equation, Sharpe ratio, portfolio optimisation, CAPM, time series analysis, PDEs, convex optimisation, securities markets 101, pairs trading strategies, trend following and mean reversion strategies, market microstructure, & Monte Carlo methods

- 1st and 2nd year undergraduate probability and statistics is sufficient. Please see below the course synopsis for these at University of Oxford and MIT, which contain a good overview. There also might also be useful exercise sheets and lecture notes on these pages.

Probability: https://courses.maths.ox.ac.uk/course/view.php?id=1044
                https://courses.maths.ox.ac.uk/course/view.php?id=660
                https://courses.maths.ox.ac.uk/course/view.php?id=678
Statistics: https://courses.maths.ox.ac.uk/course/view.php?id=1037

Introduction to probability & statistics: https://ocw.mit.edu/courses/mathematics/18-05-introduction-to-probability-and-statistics-spring-2014/

Maths of Data Science: https://ocw.mit.edu/courses/mathematics/18-s096-topics-in-mathematics-of-data-science-fall-2015/

Tips

- One way of preparing for the quiz is to work through a book like Stefanica, Radoicic and Wang (1). It emphasises numerical methods more and statistics less. Its more advanced questions are closer to the level of our triage interview questions than of our quiz questions

- We do not assume a detailed knowledge of finance. If you wanted a single source however, Narang (2) is a good, casual introduction to many of these concepts. If you were interested in getting some trading experience, Narang's focus on trading strategies can help you assess and implement your understanding of the theory

- If you want coding practice, ProjectEuler.net is a nice place to start: it provides bite-size maths problems that often require a computational solution. Codility, Kaggle and TopCoder have similar projects. Kaggle prediction problems are close to a lot of quant work.

- Googling 'programming brain teasers' is also good preparation for the programming technical interview

- Schwager (3) interviews successful fund managers about their trading strategies

- For further reading on ML, take a look at Cracking the Coding Interview and The Elements of Statistical Learning

(1) Dan Stefanica, Radoš Radoicic and Tai-ho Wang. 150 Most Frequently Asked Questions on Quant Interviews. Pocket Book Guides for Quant Interviews. FE Press, 2013
(2) Rishi K. Narang. Inside the black box: A simple guide to quantitative and high frequency trading. 2nd. John Wiley & Sons, 2013.
(3) Jack D Schwager. Hedge fund market wizards: How winning traders win. John Wiley & Sons, 2012.