

Each Practice Exam covers all Topics in the CAIA curriculum according to their respective weights.

EXAM 1 PART 1

Quantitative Methods

1. When compared to mutual funds, hedge funds have:
 - A. more disclosure requirements and more strategies available to them.
 - B. more disclosure requirements and fewer strategies available to them.
 - C. fewer disclosure requirements and more strategies available to them.
 - D. fewer disclosure requirements and fewer strategies available to them.

2. Which of the following is **NOT** a main sub-category of the long/short hedge fund style?
 - A. The dedicated short selling style.
 - B. The emerging markets style.
 - C. The alpha style.
 - D. The market timer style.

3. For a relative value arbitrage style, the main source of return and the main risk exposures from the convertible arbitrage style are from the potential:
 - A. decline in a stock's price to a specified strike level and the further decline beyond that strike level, respectively.
 - B. increase in a stock's price and the potential decline in a stock's price, respectively.
 - C. decline in a stock's price and the potential increase in a stock's price, respectively.
 - D. increase in a stock's price to a specified strike level and the further increase beyond that strike level, respectively.

4. The growth of the hedge fund industry has led to self-institutionalization. A major reason behind the movement toward self-institutionalization is:
 - A. fear in the hedge fund industry of regulatory controls.
 - B. the need for better performance.
 - C. the client's high tolerance for risk.
 - D. the greater volatility of markets.

5. The approach that uses a consistent NAV across the entire fund and requires that an adjustment be made to the price that each individual investor uses to buy into the fund is known as the:
 - A. multiple share approach.
 - B. equalization factor approach.
 - C. equalization shares approach.
 - D. equalization adjustment approach.

6. The potential for inequity between a new investor and an existing investor of a hedge fund is greatest for:
- onshore funds.
 - offshore funds.
 - fund of funds.
 - long/short funds.
7. Which of following statements concerning beta is **CORRECT**?
- Beta measures only unsystematic risk.
 - Beta measures both systematic and unsystematic risk.
 - Beta measures neither systematic nor unsystematic risk.
 - Beta measures only systematic risk.
8. Which of the following statements is **TRUE** concerning the use of $(T - 1)$ in the denominator of the sample variance equation? By using $(T - 1)$ in the denominator of the sample variance equation:
- the sample mean becomes an unbiased estimator of the population mean.
 - the sample variance becomes an unbiased estimator of the population variance.
 - the sample variance becomes a biased estimator of the population variance.
 - the sample mean becomes a biased estimator of the population mean.

Use the following information for Questions 9 and 10.

<i>Hedge Fund</i>	<i>Months of Returns</i>	<i>Skewness</i>	<i>Kurtosis</i>
Allison	60	-0.3	1.1
Fries	60	0	1.8
Kelly	120	-0.5	0.8
Torrey	120	0.4	-1.0

9. The Bera-Jarque statistic for the Allison Hedge Fund is *closest* to:
- 4.
 - 3.
 - 5.
 - 6.
10. Using a 5% level of significance (critical value = 5.99), which fund's hypothesis that returns follow a normal distribution cannot be rejected?
- Fries.
 - Kelly.
 - Torrey.
 - Allison.

11. Based on information in the table below and a risk-free rate of 3%, which of the following is *closest* to the M² measure for the Benson Fund?

	<i>Benson Fund</i>	<i>S&P 500 Index</i>
Average return	23.2%	13.8%
Standard deviation	18%	23%
Beta	0.9	1.0

- A. 12%.
B. 29%.
C. 25%.
D. 15%.
12. Which of the following statements regarding the RoVaR measure is **FALSE**?
- A. The RoVaR measure will provide the same ranking for a group of funds regardless of the confidence level used to calculate VaR.
B. The RoVaR and the Sharpe ratio are related, but may provide different rankings for a group of funds.
C. RoVaR can be customized for different holding periods.
D. The denominator for RoVaR is positive, even though percentage VaR measures are usually negative.
13. Which of the following is **NOT** a benefit of a relative peer group benchmark?
- A. The peer group benchmarks do not contain any of the biases (e.g., survivorship and self-selection) that are embedded in broader indices.
B. Peer group benchmarks allow us to compare the manager's performance against a group of peers following a similar style.
C. The peer group benchmark accounts for transactions costs and fees charged by hedge fund managers.
D. The peer group benchmark reveals similarities between managers' strategies.
14. Jeremy Shastri, an up and coming fund manager with Global Platinum Funds, would like to begin reporting his great success to several hedge fund databases. Shastri expects the database to include performance data for the last two years and then to report current performance. One database manager said that it would not be possible to include the historical performance numbers in the database because it would lead to:
- A. backfill bias.
B. self-selection bias.
C. self-reporting bias.
D. database bias.
15. Bridget Packard needs to estimate a 95% confidence interval for a correlation coefficient. The sample size is 150 and the correlation coefficient is 0.60. The confidence interval is *closest* to:
- A. 0.5315 to 0.8548.
B. 0.6000 to 0.6000.
C. 0.4865 to 0.6936.
D. 0.6000 to 0.8548.

EXAM 1 PART 1 ANSWERS

Quantitative Methods

1. C The lack of disclosure requirements and ability to pursue a greater number of strategies are the result of the private nature of hedge funds. (Topic 1, LO 2)
2. C For the equity long/short style, the main sub-categories are the dedicated short selling style, the emerging markets style, and the market timer style. (Topic 1, LO 7.b)
3. C The main source of return is from the decline in the price of the short stock position. The short position exposes the fund to the risk of losses from an increase in the price of the stock. (Topic 1, LO 9.d)
4. A The main reasons behind self-institutionalization are the fear of regulatory controls and the demands made by institutions, which represent a large potential source of new investments. (Topic 2, LO 2)
5. B The equalization factor approach uses a consistent NAV across the entire fund and requires that an adjustment be made to the price that each individual investor uses to buy into the fund. (Topic 2, LO 10.a)
6. B Unlike onshore funds, offshore funds are often open-ended. The open-ended structure is likely to create the potential for inequity between current and new investors. The close-ended structure does not create these potential inequities. (Topic 2, LO 8)
7. D Beta measures only systematic risk. A beta greater than one indicates the fund has a higher than average sensitivity to the benchmark, while a beta lower than one indicates the fund has a lower than average sensitivity to the benchmark. (Topic 3, LO 32)
8. B By using $(T - 1)$ in the denominator of the sample variance equation, the sample variance becomes an unbiased estimator of the population variance. (Topic 3, LO 13)

9. A Bera-Jarque statistic = $\frac{T}{6} \left[\text{skewness}^2 + \frac{\text{kurtosis}^2}{4} \right]$

$$\text{Bera-Jarque} = \frac{60}{6} \left[(-0.3)^2 + \frac{(1.1)^2}{4} \right] = 3.925 \approx 4$$

(Topic 3, LO 20)

Practice Exam answers explain the concept tested and reference the underlying Learning Objective.

$$10. \text{ D} \quad \text{Bera-Jarque statistic}_{\text{Allison}} = \frac{60}{6} \left[(-0.3)^2 + \frac{(1.1)^2}{4} \right] = 3.9$$

$$\text{Bera-Jarque statistic}_{\text{Fries}} = \frac{60}{6} \left[(0)^2 + \frac{(1.8)^2}{4} \right] = 8.1$$

$$\text{Bera-Jarque statistic}_{\text{Kelly}} = \frac{120}{6} \left[(-0.5)^2 + \frac{(0.8)^2}{4} \right] = 8.2$$

$$\text{Bera-Jarque statistic}_{\text{Torrey}} = \frac{120}{6} \left[(0.4)^2 + \frac{(-1.0)^2}{4} \right] = 8.2$$

The Bera-Jarque statistic evaluates whether data is normally distributed. The critical value for a level of significance of 5% is 5.99. For a level of significance of 1%, the critical value is 9.21. Allison's Bera-Jarque statistic of 3.925 is less 5.99. Because Allison's statistic does not lie in the rejection area to the right of 5.99, the hypothesis that returns follow a normal distribution is not rejected. The remaining Funds' Bera-Jarque statistic are higher than 5.99. Therefore, the hypothesis that these Fund's returns follow a normal distribution must be rejected. (Topic 3, LO 20)

$$11. \text{ B} \quad R_{p^*} = \sigma_M (R_p - R_f) / \sigma_p + R_f$$

$$R_{p^*} = \left[[0.23 \times (0.232 - 0.03)] / 0.18 \right] + 0.03 = 0.288$$

$$M^2 = 0.288 = 28.8\% \approx 29\% \text{ (Topic 4, LO 6)}$$

12. A RoVaR is calculated as the return of the portfolio divided the absolute value at risk. Like VaR, RoVaR can be customized for different holding periods and risk periods. RoVaR may give different rankings for a group of funds if the confidence level used to calculate VaR is different. In other words, RoVaR may give one ranking for a group of funds where risk is calculated at the 99% confidence level, but a completely different ranking if risk is calculated at the 95% confidence level due to the different risk definitions. (Topic 4, LO 11.b)

13. A The relative peer group benchmark approach has three primary benefits:

- allows for comparisons of the manager's performance with a group of peers following a similar style.
- accounts for transactions costs and fees charged by hedge fund managers.
- reveals similarities between manager's strategies. (Topic 5, LO 8.c)

14. A Backfill (or instant history) bias results when a database includes historical returns from a manager. The manager will probably not report until he or she has achieved a track record of positive results, putting upward pressure on the historical performance reported in the database. (Topic 5, LO 4)