Portfolio Management - Questions

Use the following information to answer Questions 1 through 6.

Faster Analytics Capital Management makes portfolio recommendations using various factor models. Bill Adams, chief economist at Faster Analytics, is responsible for providing macroeconomic and capital market forecasts. Mauricio Rodriguez, a Faster Analytics research analyst, is examining the prospects of several portfolios: the FACM Century Fund (CF), the FACM Esquire Fund (EF), the FACM Zeta Fund (ZF), and the FACM Delta Benchmark (DB).

Selected Data for CF, ZF and Their Benchmark

Information ratio (CF)	0.12
Information ratio (ZF)	0.25
Benchmark Sharpe ratio	0.30
Benchmark total risk(s)	20%

Rodriguez's supervisor, Barbara Woodson, asks Rodriguez to use the capital asset pricing model (CAPM) and a multifactor model (APT) to make a decision about whether to continue or terminate the Esquire Fund. The two factors in the multifactor model are not identified. To help with the decision, Adams provides Rodriguez with the capital market forecasts shown in **Capital Market Forecasts**

Capital Market Forecasts

Risk-free rate	4%
Market portfolio risk premium	8%
APT factor 1 risk premium	5%
APT factor 2 risk premium	2%
Inflation rate	3%

After examining the prospects for the EF portfolio, Rodriguez derives the forecasts in **EF Data**.

EF Data

Expected Return	12%
CAPM beta	0.80
APT factor 1 risk sensitivity	1.50

APT factor 2 risk sensitivity	2.00

Rodriguez also develops a 2-factor macroeconomic factor model for the EF portfolio. The two factors used in the model are the surprise in GDP growth and the surprise in investor sentiment. The equation for the macro factor model is:

$$R_{EF} = a_{EF} + b_{EF,1}F_{GDP} + b_{EF,2}F_{IS} + \varepsilon_{EF}$$

During an investment committee meeting, Woodson makes the following statements related to the 2-factor macroeconomic factor model:

Statement 1: An investment allocated between CF and EF that provides a GDP growth factor beta equal to one and an investor sentiment factor beta equal to zero will have lower active factor risk than a tracking portfolio consisting of CF and EF.

Statement 2: When markets are in equilibrium, no combination of CF and EF will produce an arbitrage opportunity.

Rodriguez says to Woodson that for a long-term, default-risk-free bond, if the covariance between the bond's price and investors' inter-temporal rate of substitution is positive, the bond will trade at a lower price than it otherwise would, and that covariance will capture the risk premium on the bond.

In their final meeting, Rodriguez informs Woodson that the DB portfolio consistently outperformed its benchmark over the past five years. "The consistency with which DB outperformed its benchmark is amazing. The difference between the DB monthly return and its benchmark's return was nearly always positive and varied little over time," says Rodriguez.

Question 1 of 6

The highest possible Sharpe ratio for a portfolio consisting of a combination of the CF fund and the benchmark is *closest* to:

A) 0.32.

B) 0.35.

C) 0.38.

Question 2 of 6

For an investor in the ZF, the optimal level of active risk, and the corresponding total excess return (over risk-free rate), are respectively *closest* to:

	Optimal active risk	Total excess return
A)	12.0%	9.2%.
B)	16.7%	10.2%.
C)	18.6%	11.9%.

Question 3 of 6

Considering the data provided in **Capital Market Forecasts** and **EF Data**, should Rodriguez recommend that Faster Analytics continue to invest in the EF fund using an analysis based on the CAPM or 2-factor APT?

	CAPM?	2-factor APT?
A)	Yes	Yes
B)	Yes	No
C)	No	Yes

Question 4 of 6

Rodriguez's statement regarding default risk-free bonds is *most likely*:

A) correct.

B) incorrect about the existence of a risk premium on a default-risk-free bond.

C) incorrect about the covariance being positive.

Question 5 of 6

Are Woodson's statements 1 and 2 regarding the macro factor model correct?

A) Both statements are correct.

B) Only statement 1 is correct.

C) Only statement 2 is correct.

Question 6 of 6

The historical performance of the DB portfolio is *best* summarized as:

A) high active risk.

B) high tracking risk.

C) high information ratio.