Mock Class Test 2022 - mock multiple choice question on last week

Investments (Lancaster University)

LANCASTER UNIVERSITY MANAGEMENT SCHOOL
DEPARTMENT OF ACCOUNTING AND FINANCE
MIDTERM (MOCK) TEST Lent Term, 2022

COURSE NUMBER: ACF 321
COURSE NAME: Investments
EXAM DURATION: 60 MINUTES (including reading time)
TOTAL MARKS: 20

Choose only ONE answer for each question.
Each question counts for 1 mark.

1. You invest $100 in a risky asset with an expected rate of return of 0.12 and a standard deviation of 0.15 and a T-bill with a rate of return of 0.05.

What percentages of your money must be invested in the risky asset and the risk-free asset, respectively, to form a portfolio with an expected return of 0.09?

A) 85% and 15%
B) 75% and 25%
C) 67% and 33%
D) 57% and 43%
E) Cannot be determined.

1) D

9% = w1(12%) + (1− w1)(5%); 9% = 12%w1 + 5%− 5%w1; 4% = 7%w1; w1 = 0.57; 1− w1 = 0.43; 0.57(12%) + 0.43(5%) = 8.99%.

2. The capital market line

I) is a special case of the capital allocation line.
II) represents the opportunity set of a passive investment strategy.
III) has the one-month T-Bill rate as its intercept.
IV) uses a broad index of common stocks as its risky portfolio.

A) I, III, and IV
B) II, III, and IV
C) III and IV
D) I, II, and III
E) I, II, III, and IV

2) E

The capital market line is the capital allocation line based on the one-month T-Bill rate and a broad index of common stocks. It applies to an investor pursuing a passive management strategy.

3. You invest $100 in a risky asset with an expected rate of return of 0.11 and a standard deviation of 0.21 and a T-bill with a rate of return of 0.045.

A portfolio that has an expected outcome of $114 is formed by

A) investing $100 in the risky asset.
B) investing $80 in the risky asset and $20 in the risk-free asset.
C) borrowing $46 at the risk-free rate and investing the total amount $146 in the risky asset.
D) investing $43 in the risky asset and $57 in the risk-free asset.
E) Such a portfolio cannot be formed.

3)C

For $100: (114 − 100)/100 = 14%; 0.14 = w1(0.11) + (1 − w1)(0.045); 0.14 = 0.11w1 + 0.045 − 0.045w1; 0.095 = 0.065w1; w1 = 1.46($100) = $146; (1 − w1)$100 = −$46.

4. Other things equal, diversification is most effective when

A) securities' returns are uncorrelated.
B) securities' returns are positively correlated.
C) securities' returns are high.
D) securities' returns are negatively correlated.
E) securities' returns are positively correlated and high.

4)D

Negative correlation among securities results in the greatest reduction of portfolio risk, which is the goal of diversification.

5. Consider the following probability distribution for stocks A and B:

State	Probability	Return on Stock A	Return on Stock B
1	0.10	10 %	8 %
2	0.20	13 %	7 %
3	0.20	12 %	6 %
4	0.30	14 %	9 %
5	0.20	15 %	8 %

If you invest 40% of your money in A and 60% in B, what would be your portfolio's expected rate of return?

A) 9.9%
B) 10.9%
C) 11%
D) 12.5%
E) None of the options are correct.

5)B

$E(R_A)$ = 0.1(10%) + 0.2(13%) + 0.2(12%) + 0.3(14%) + 0.2(15%) = 13.2%;
$E(R_B)$ = 0.1(8%) + 0.2(7%) + 0.2(6%) + 0.3(9%) + 0.2(8%) = 7.7%.
E(RP) = 0.4(13.2%) + 0.6(7.7%) = 9.9%;

6. In a two-security minimum variance portfolio where the correlation between securities is greater than −1.0,

A) the security with the higher standard deviation will be weighted more heavily.
B) the security with the higher standard deviation will be weighted less heavily.
C) the two securities will be equally weighted.
D) the risk will be zero.
E) the return will be zero.

6) B

The security with the higher standard deviation will be weighted less heavily to produce minimum variance. The return will not be zero; the risk will not be zero unless the correlation coefficient is −1.

7. According to the Capital Asset Pricing Model (CAPM), which one of the following statements is false?

A) The expected rate of return on a security increases in direct proportion to a decrease in the risk-free rate.
B) The expected rate of return on a security increases as its beta increases.
C) A fairly priced security has an alpha of zero.
D) In equilibrium, all securities lie on the security market line.

7) A

"The expected rate of return on a security increases in direct proportion to a decrease in the risk-free rate" is false.

8. Your personal opinion is that a security has an expected rate of return of 0.11. It has a beta of 1.5. The risk-free rate is 0.05 and the market expected rate of return is 0.09. According to the Capital Asset Pricing Model, this security is

A) underpriced.
B) overpriced.
C) fairly priced.
D) Cannot be determined from data provided.

8) C

11% = 5% + 1.5(9% −5%) = 11.0%; therefore, the security is fairly priced.

9. The capital asset pricing model assumes

A) all investors are rational.
B) all investors have the same holding period.
C) investors have heterogeneous expectations.
D) all investors are rational and have the same holding period.
E) all investors are rational, have the same holding period, and have heterogeneous

9) D

10. The CAPM assumes that investors are rational price takers with the same single holding period and that they have homogeneous expectations.

Consider the multifactor APT with two factors. Stock A has an expected return of 17.6%, a beta of 1.75 on factor 1, and a beta of .86 on factor 2. The risk premium on the factor 1 portfolio is 3.2%. The risk-free rate of return is 5%. What is the risk-premium on factor 2 if no arbitrage opportunities exist?

A) 8.14%
B) 3%
C) 4%
D) 7.75%

10) A

17.6% = 1.75(3.2%) + 0.86x + 5%; x = 8.14.

11. Consider the one-factor APT. The variance of returns on the factor portfolio is 5%. The beta of a well-diversified portfolio on the factor is 1.2. The variance of returns on the well-diversified portfolio is approximately

A) 3.6%.
B) 7.2%.
C) 8.3%.
D) 19.1%.

11) B

$s^2_P = (1.2)^2(5\%) = 7.20\%$.

12. Consider a one-factor economy. Portfolio A has a beta of 1.0 on the factor, and portfolio B has a beta of 2.0 on the factor. The expected returns on portfolios A and B are 11% and 17%, respectively. Assume that the risk-free rate is 6%, and that arbitrage opportunities exist. Suppose you invested $100,000 in the risk-free asset, $100,000 in portfolio B, and sold short $200,000 of portfolio A. Your expected profit from this strategy would be

A) −$1,000.
B) $0.
C) $1,000.
D) $2,000.

12) C

$100,000(0.06) = $6,000 (risk-free position); $100,000(0.17) = $17,000 (portfolio B); −$200,000(0.11) = −$22,000 (short position, portfolio A); 1,000 profit.

13. Imposing the no-arbitrage condition on a single-factor security market implies which of the following statements?

I) The expected return-beta relationship is maintained for all but a small number of well-diversified portfolios.
II) The expected return-beta relationship is maintained for all well-diversified portfolios.
III) The expected return-beta relationship is maintained for all but a small number of individual securities.
IV) The expected return-beta relationship is maintained for all individual securities.

A) I and III
B) I and IV
C) II and III
D) II and IV
E) Only I is correct.

13) C

The expected return-beta relationship must hold for all well-diversified portfolios and for all but a few individual securities; otherwise arbitrage opportunities will be available.

14. In the APT model, what is the nonsystematic standard deviation of an equally-weighted portfolio that has an average value of σ(ei) equal to 25% and 50 securities?

A) 12.5%
B) 625%
C) 0.5%
D) 3.54%
E) 14.59%

14) D

$$\sigma^2(e_p) = \frac{1}{n}\sigma^{-2}(e_i) = \frac{1}{50}(25)^2 = 12.5, \quad \sigma(e_p) = \sqrt{12.5} = 3.54\%$$

15. Studies of positive earnings surprises have shown that there is

A) a positive abnormal return on the day positive earnings surprises are announced.
B) a positive drift in the stock price on the days following the earnings surprise announcement.
C) a negative drift in the stock price on the days following the earnings surprise announcement.
D) a positive abnormal return on the day positive earnings surprises are announced and a positive drift in the stock price on the days following the earnings surprise announcement.
E) a positive abnormal return on the day positive earnings surprises are announced and a negative drift in the stock price on the days following the earnings surprise announcement.

15) D

The market appears to adjust to earnings information gradually, resulting in a sustained period of abnormal returns.

16. In an efficient market the correlation coefficient between stock returns for two nonoverlapping time periods should be

A) positive and large.
B) positive and small.
C) zero.
D) negative and small.
E) negative and large.

16) C

In an efficient market there should be no serial correlation between returns from nonoverlapping periods.

17. A semi-annual coupon bond is reported as having an ask price of 113% of the $1,000 par value in the Wall Street Journal. If the last interest payment was made two months ago and the coupon rate is 12%, the invoice price of the bond will be

A) $1,100.
B) $1,110.
C) $1,150.
D) $1,160.
E) None of the options are correct.

17) C

accrued interest = (2/6)*(12%/2) = 2% of $1,000 = $20
Invoice price = $1,130 + $20 (accrued interest) = $1,150.

18. Treasury STRIPS are

A) securities issued by the Treasury with very long maturities.

B) extremely risky securities.
C) created by selling each coupon or principal payment from a whole Treasury bond as a separate cash flow.
D) created by pooling mortgage payments made to the Treasury.

18) C

Treasury STRIPS are created by selling each coupon or principal payment from a whole Treasury bond as a separate cash flow.

19. Suppose you purchase 100 shares of Coca Cola stock at the beginning of year 1 and purchase another 100 shares at the end of year 1. You sell all 200 shares at the end of year 2. Assume that the price of Coca Cola stock is $50 at the beginning of year 1, $55 at the end of year 1, and $65 at the end of year 2. Assume no dividends were paid on Coca Cola stock. Your dollar-weighted return on the stock will be _____ your time-weighted return on the stock.

A) higher than
B) the same as
C) less than
D) exactly proportional to
E) More information is necessary to answer this question.

19) A

In the dollar-weighted return, the stock's performance in the second year, when 200 shares are held, has a greater influence on the overall dollar-weighted return. The time-weighted return ignores the number of shares held.

20. The following data are available relating to the performance of Sooner Stock Fund and the market portfolio:

	Sooner Stock Fund	Market Portfolio
Average return	20 %	11 %
Standard deviations of returns	44 %	19 %
Beta	1.8	1.0
Residual standard deviation	2.0 %	0.0 %

The risk-free return during the sample period was 3%.

The information ratio for Sooner Stock Fund is:

A) 1.53
B) 1.30
C) 8.67
D) 31.43
E) 37.14

20) B

α_P = 20% − [3% + 1.8(11% − 3%)] = 2.6%, 2.6%/2.00% = 1.3.