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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR**  
**SECOND YEAR, SECOND SEMESTER EXAMINATION**  
**FOR THE DIPLOMA IN ACCOUNTING**

Date: 16<sup>th</sup> April, 2024  
Time: 11.30am –1.30pm

**DBF 1106: INVESTMENT ANALYSIS**

**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- a) The relationship between asset returns and their movement is an important factor when determining the assets to include in a portfolio. The covariance and correlation coefficient are considered good measures of this relationship. Explain the difference between these two measures and their application in portfolio management. **(4 marks)**
- b) A stock trading at the Nairobi Securities Exchange declared dividends of Kshs. 5 for the year 2023. For the last 10 years, the stock's dividend has grown at an average annual rate of 10%. If the company's cost of capital is 15%;
- i) Calculate the stock's value. **(4 marks)**
- ii) What would be the stock's value if the company's dividends remained constant over the period into perpetuity? **(3 marks)**
- c) When determining an asset's risk level, the beta is a commonly used measure. Highlight three applications of the beta measure. **(6 marks)**
- d) Using appropriate examples in each, differentiate between systematic risk and unsystematic risk. **(5 marks)**
- e) Happy Trading Ltd, a public company, intends to raise additional share capital through a rights issue. The number of issued ordinary shares currently stands at 100 million shares. Each shareholder will have a right to purchase one right for every five shares currently held. The current market price per share is Sh.60 while the subscription rights price has been fixed at Sh.50 per share.
- Required:**
- i) Calculate the theoretical value of a right in Happy Trading Ltd. **(4 marks)**
- ii) Determine the theoretical ex-rights price of a share in the company. **(4 marks)**

**QUESTION TWO (20 MARKS)**

- a) Murife has an investment capital of Sh. 1,000,000. He wishes to invest in two securities, J and M in the following proportion; Sh.200, 000 in securities J and Sh.800, 000 in security M.

The returns on these two securities depend on the state of the economy as shown below:

State of Economy	Probability	Returns on Security J	Returns on Security M
Boom	0.4	18%	24%
Normal	0.5	14%	22%
Recession	0.1	12%	21%

**Required:**

- i) Compute Murife's expected returns on assets J and M (6 marks)
- ii) Calculate the assets standard deviations (6 marks)
- iii) Calculate the portfolio's expected return (2 marks)
- iv) Calculate the portfolio standard deviation. (6 marks)

**QUESTION THREE (20 MARKS)**

- a) There are a number of investment instruments that investors can choose from. However, their choice of instruments or assets is largely determined by a number of factors. Describe five of these factors. (10 marks)
- b) In the lead up to the full-blown pandemic currently been experienced, global financial markets were impacted to a large extent, mostly negatively. Identify and explain any five assumptions of efficient markets. (10 marks)

**QUESTION FOUR (20 MARKS)**

- a) An analyst expects a risk-free return of 8% and market return of 15%. The betas for the stocks X and Y are 1.4 and 0.7 respectively.  
**Required;**
  - i) Using CAPM, estimate the values of these two stocks and make a comparison of your results in terms of their risk-return profiles. (6 marks)
  - ii) Determine whether X and Y are undervalued or overvalued and the actions to be recommended by the analyst if their prevailing returns in the market are 22% and 7% respectively. (6 marks)
- b) Security returns of JBL's shares depend on only three risk factors-inflation, industrial production and the aggregate degree of risk aversion. While the risk free rate is 8%, the required rate of return on the asset with unit sensitivity to inflation is 13.0%, the required rate of return with unit sensitivity to industrial production is 10% and the required return on a portfolio with unit sensitivity to the degree of risk aversion is 6%. JBL has betas of 0.9 with respect to inflation, 1.2 with respect to industrial production and -0.7 with respect to risk bearing. Assume also that required rate of return on the market is 15%.  
**Required:**
  - i) Compute JBL share's required rate of return using APT. (6 marks)
  - ii) Interpret the meaning of the factor sensitivities used in the APT model. (2 marks)

**QUESTION FIVE (20 MARKS)**

- a) Numerous asset pricing models have been developed over time to help in the valuation of assets and wise investment decision-making. The most common of these are the Capital Asset Pricing Model and the Arbitrage Pricing Theory Model. Explain why the APT is considered to be a more superior model than the CAPM. (10 marks)
- b) Amelia, the fund manager at a private equity firm recently read in the news that the derivative market has of late become more active unlike in previous years. However, she is unfamiliar with these instruments and would like your insight on them. Discuss the applications of derivative instruments to help her understand more. (10 marks)