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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY  
UNIVERSITY EXAMINATION, 2019/2020 ACADEMIC YEAR  
THIRD YEAR, FIRST SEMESTER EXAMINATION  
FOR THE DEGREE OF BACHELOR OF SCIENCE  
(BUSINESS ADMINISTRATION)**

**KFI 302: INVESTMENT ANALYSIS 1**

Date: 11<sup>th</sup> April 2019  
Time: 8.30am – 10.30am

**INSTRUCTIONS TO CANDIDATES**

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

**QUESTION ONE (30 MARKS)**

- a) EMC Ltd has a paid up share capital of 1.2 million shares of Sh.20 each. The current market price per share is Sh.36. The company has no loan capital. Maintainable earnings before tax are forecast at Sh.4.8 million. The company's effective tax rate is 40%. The company requires to raise a further Sh.15 million in order to achieve additional earnings of Sh.2.2 million per annum and proposes doing this by means of a rights issue. Suggested alternative prices for the rights issue are Sh.32 and Sh.25 per share.
- Required:**
- i) Calculate, when the price is Sh.32 per share, the theoretical market price per share of the enlarged capital after the issue (the ex-rights price) and also the market value of a right. (8 marks)
  - ii) Calculate as in (a) above when the price is Sh.25 per share. (3 marks)
  - iii) Suggest, with reasons, what issue price is most likely to be adopted by the company. (6 marks)
  - iv) What factors might, in practice, invalidate your calculations? (4 marks)
- b) What assumptions must be made in deriving the Capital Asset Pricing Model (CAPM)? (5 marks)
- c) With reference to the measurement of portfolio risk, distinguish between Portfolio theory and the Capital Asset Pricing Model (CAPM). (4 marks)

## **QUESTION TWO (20 MARKS)**

Dove Construction Company Ltd made a Sh.100 million bondage 5 years ago when interest rates were substantially high. The interest rates have now fallen and the firm wishes to retire this old debt and replace it with a new and cheaper one. Given here below are the details about the two bond issues:

**Old Bonds:** The outstanding bonds have a nominal value of Sh.1, 000 and 24% coupon interest rate. They were issued 5 years ago with a 15-year maturity. They were initially sold at their nominal value of Sh.1, 000 and the firm incurred Sh.390, 000 in floatation costs. They are callable at Sh.1, 120.

**New Bonds:** The new bonds would have a Sh.1, 000 nominal value and a 20% coupon interest rate. They would have a 10-year maturity and could be sold at their par value. The issuance cost of the new bonds would be Sh.525, 000.

Assume the firm does not expect to have any overlapping interest and is in the 35% tax bracket.

### **Required:**

- i) Calculate the after-tax cash inflows expected from the unamortized portion of the old bond's issuance cost. (2 marks)
- ii) Calculate the annual after-tax cash inflows from the issuance of the new bonds assuming the 10-year amortization. (2 marks)
- iii) Calculate the after-tax cash outflow from the call premium required to retire the old bonds. (2 marks)
- iv) Determine the incremental initial cash outlay required to issue the new bonds. (6 marks)
- v) Calculate the annual cash-flow savings, if any, expected from the bond refunding. (5 marks)
- vi) If the firm has a 14% after-tax cost of debt, would you recommend the proposed refunding and reissue? Explain. (3 marks)

## **QUESTION THREE (20 MARKS)**

ABC Ltd has decided to acquire a piece of equipment costing Shs 240, 000 of five years. The equipment is expected to have no salvage value at the end and the company uses straight-line depreciation method on all its Fixed Assets. The company has two financing alternative methods available, leasing or borrowing.

The loan has an interest rate of 15% requiring equal-year-end instalments to be paid. The lease would be set at a level that would amortize the cost of equipment over the lease period and would provide the lessor with a 14% return on capital. The company's tax rate is 40%.

### **Required:**

- i) Compute the annual lease payments. (3 marks)
- ii) Compute the PV of the cash out flow under lease financing (5 marks)
- iii) Calculate the annual loan instalment payment (2 marks)
- iv) Calculate the interest and the principal component of the loan repayment. (5 marks)
- v) Calculate the PV of after tax cash flow under the loan alternative (4 marks)
- vi) Which alternative is better and why? (1 mark)

#### **QUESTION FOUR (20 MARKS)**

- a) Security returns depend on only three risk factors—inflation, industrial production and the aggregate degree of risk aversion. The risk free rate is 8%, the required rate of return on a portfolio with unit sensitivity to inflation and zero-sensitivity to other factors is 13.0%, the required rate of return on a portfolio with unit sensitivity to industrial production and zero sensitivity to inflation and other factors is 10% and the required return on a portfolio with unit sensitivity to the degree of risk aversion and zero sensitivity to other factors is 6%. Security i has betas of 0.9 with the inflation portfolio, 1.2 with the industrial production and -0.7 with risk bearing portfolio—(risk aversion)

Assume also that required rate of return on the market is 15% and stock i has CAPM beta of 1.1

#### **Required:**

Compute security's required rate of return using

- i) CAPM (3 marks)  
ii) APT (3 marks)
- b) What advantages do investors derive from investment in shares? (8 marks)
- c) State and explain two Theories used to explain when to time investment in the stock exchange. (6 marks)

#### **QUESTION FIVE (20 MARKS)**

- a) Briefly discuss the implications of the efficient market hypothesis for a portfolio manager. (6 marks)
- b) Empirical tests of the efficient market theory have uncovered a number of results suggesting anomalies may exist to this theory. Briefly discuss four such anomalies. (8 marks)
- c) What are the advantages and disadvantages of a rights issue from the point of view of?
- i) The issuing company? (3 marks)  
ii) The shareholders? (3 marks)