



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF BUSINESS & ECONOMICS**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF BUSINESS**  
**ADMINISTRATION (MBA)**  
**FOR**  
**SECOND YEAR SEMESTER ONE ACADEMIC YEAR 2018/2019**  
**MAIN CAMPUS – PART-TIME**

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**COURSE CODE: MBA 823**

**COURSE TITLE: CORPORATE FINANCE**

**EXAM VENUE:**

**DATE: 13/08/19**

**EXAM SESSION: 2.00 – 5.00pm**

**DURATION: 3 HOURS**

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**INSTRUCTIONS**

- 1. Answer ANY FOUR questions. Each question carries equal marks.**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

### QUESTION ONE (25 MARKS)

- (a) Discuss why corporate financial management considers *shareholders' wealth maximization* as the most appropriate goal of the firm. (4 Marks)
- (b) What are agency problems and how do they come about? What are agency costs? (6 Marks)
- (a) BOATS Eng., a company making excursion boats, has to decide either to replace their lathe machine or maintain the existing one. BOATS currently pays no taxes. The replacement machine costs Sh.900,000 now and requires maintenance of Sh.100,000 at the end of every year for eight years. At the end of eight years, the machine would be sold for Sh.200,000 after taxes. The existing machine requires increasing amounts of maintenance each year, and its salvage value falls each year, as shown:

Year	Maintenance	Aftertax Salvage
0	-	400,000
1	100,000	250,000
2	200,000	150,000
3	300,000	100,000
4	400,000	-

This chart tells us that the existing machine can be sold for Sh.400,000 now after taxes. If it is sold one year from now, the resale price will be Sh.250,000 after taxes, and Sh.100,000 must be spent on maintenance during the year to keep it running. Assume that this maintenance fee is paid at the end of the year. The machine will last for four more years before it is valueless.

#### **Required:**

- (i) If BOATS faces an opportunity cost of capital of 15 percent, when should it replace the machine? (12 Marks)
- (ii) What assumptions have you made in your computation in (i) above? (3 Marks)

### QUESTION TWO (25 MARKS)

- (a) Explain the concept of *diversification* in portfolio theory and identify the type of risk that an investor should be compensated for and why? (3 Marks)
- (b) With the aid of graphical representation and model, explain the difference between the capital market line (CML) and the security market line (SML). (8 Marks)

There are two stocks in the market, stock *A* and stock *B*. The price of stock *A* today is Sh.50. The price of stock *A* next year will be Sh.40 if the economy is in a recession, Sh.55 if the economy is normal, and Sh.60 if the economy is expanding. The probabilities of recession, normal times, and expansion are 0.1, 0.8, and 0.1, respectively. Stock *A* pays no dividends and has a correlation of 0.8 with the market portfolio. Stock *B* has an expected return of 9%, a standard deviation of 12 %, a correlation with the market portfolio of 0.2, and a correlation with stock *A* of 0.6. The market portfolio has a standard deviation of 10%. Assume the CAPM holds.

**Required:**

- (i) If you are a typical, risk-averse investor with a well-diversified portfolio, which stock would you prefer? Why? (5 Marks)
- (ii) What are the expected return and standard deviation of a portfolio consisting of 70% of stock *A* and 30 percent of stock *B*? (5 Marks)
- (iii) What is the beta of the portfolio in part (b)? (4 Marks)

**QUESTION THREE (25 MARKS)**

- (a) Why do we use an after-tax figure for cost of debt but not for cost of equity? (4 Marks)
- (b) What factors determine the beta of a stock? Define and describe each. (6 Marks)
- (c) Fama's Ltd. has a weighted average cost of capital of 11.5%. The company's cost of equity is 16 %, and its cost of debt is 8.5%. The tax rate is 35 %. What is Fama's debt-equity ratio? (3 Marks)
- (b) Raiply Ltd. currently is all equity financed and has a beta of 0.8. The firm has decided to move to a capital structure of one part debt to two parts equity. Assume that the debt has a beta of zero;

**Required:**

- (i) What will its equity beta become in the new capital structure? (4 Marks)
- (ii) If the firm had one part debt to one part equity in its new capital structure, what will its equity beta be? (2 Marks)
- (c) Consider a firm whose debt has a market value of Sh.40 million and whose stock has a market value of Sh.60 million (3 million outstanding shares of stock, each selling for Sh.20 per share). The firm pays a 15% rate of interest on its new debt and has a beta of 1.41. The corporate tax rate is 30%. Assume that the SML holds and the risk premium on the market is 9.5 %; and that the current Treasury bill rate is 11%.

**Required:**

What is this firm's RWACC?

(6 Marks)

**QUESTION FOUR (25 MARKS)**

- (a) Using appropriate models (formulae), explain the difference between perpetuity and annuity as applied in corporate finance. (6 Marks)
- (b) David Benedict, an MBA graduate has just been offered a job that pays Sh.8 million per year. He anticipates that his salary will increase by 9% each year until he retires in 40 years. Given an interest rate of 20%, what is the present value of his lifetime salary? (4 Marks)
- (c) Mark Frank has just won a lotto lottery paying Sh.5 million per year for 20 years. He is to receive his first payment a year from now. The lottery advertises this as the "hundred million jackpot lottery" simply because  $\text{Sh.5 million} \times 20 \text{ years} = \text{Sh.100 million}$ .

**Required:**

- (i) How true is this statement if the prevailing interest rate is 8%? (3 Marks)
- (ii) How much can Mark Frank claim from the lottery if the statement is misleading? (2 Marks)
- (d) Arnold and Jensen are saving for college education for their new daughter, Fiona. They estimate the college expenses to be Sh.3 million per year when their daughter reaches 18 years. The annual interest rate over the next few decades will be 14%. How much money must they deposit in the bank each year for their daughter will be completely supported through the four years of study in college? (10 Marks)

**QUESTION FIVE (25 MARKS)**

- (a) In calculating the Net Present Value of a project, only cash flows that are incremental to the project should be used. What are some of the likely pitfall an analyst is likely to encounter in coming up with the appropriate cash flow to use? (5 Marks)
- (b) Bandani Company is a leading manufacturer of sports equipment. It is located near Kisumu Golf Club and believes that if introduces a brightly coloured golf balls, it could take advantage and create for itself a sizable market share in the region since golfers rely on imported balls. The company conducted a preliminary market research and found that they could achieve between 10 to 15% of the market share. This could translate to a good profit margin. They used Sh.250,000 to carry out this preliminary survey. Bandani is now considering investing in a new machine used to make these balls. They have made use of available building, which they could sell immediately at Sh.150,000 after tax. Assume that the following information is provided for further analysis:
1. The cost of the machine is Sh.100,000

2. The market value of the machine is Sh.30,000 after its useful life of five years. Depreciation is provided on a straight line basis.

3. Production of the machine in five years is broken down as follows:

Year	1	2	3	4	5
Units	5,000	8,000	12,000	10,000	6,000

4. Net working capital requirement is provided as follows:

Year	0	1	2	3	4	5
Sh.	10,000	10,000	16,320	24,970	21,220	0

5. The price of the golf ball in the first year is Sh.20. Because competition will be tight, the price of the ball will increase at only 2% per year as compared to anticipated inflation rate of 5%.
6. The plastic used to produce the balls is rapidly becoming more expensive, hence the production cash outflow is expected to grow at 10% per year. First year production cost will be Sh.10 per unit.
7. The manager of Bandani has determined that the appropriate tax rate is 30%.

**Required:**

Should Bandani Company undertake the project if the appropriate discount rate is 10%? (**Hint:** use incremental cash flow analysis). (20 Marks)

**QUESTION SIX (25 MARKS)**

- (a) Briefly explain the concept of the efficient market hypothesis (EMH) and each of its three forms (10 Marks)
- (b) The efficient market hypothesis implies that abnormal returns are expected to be zero. Yet in order for the markets to be efficient, arbitrageurs must be able to force prices back into equilibrium. If they earn profit in doing so, is this fact inconsistent with market efficiency? (3 marks)
- (c) Why are the following “effects” considered efficient market anomalies? Are there rational explanations for any of these effects?
- (i) P/E effect.
  - (ii) Book-to-market effect.
  - (iii) Momentum effect.
  - (iv) Small-firm effect.
- (12 Marks)