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ADVANCED FINANCIAL MANAGEMENT
BLOCK MODEL PAPER FOR DECEMBER 2021 EXAMS

QUESTION 1

- a) Examine four statutory protections available to shareholders in mitigating against negative consequences of the agency problems arising between them and managers.
- b) Emalex Ltd. has a budget of Sh.240 million for Investment In various projects. The finance manager has presented the following proposals for immediate investment, The first cash return is expected in 12 months and at annual intervals thereafter.

Project	2016 Sh. "m"	2015 Sh. "m"	2016 Sh. "m"	2017 Sh. "m"	2018 Sh. "m"	2019 Sh. "m"	2020 Sh. "m"	Net present value (NPV) Sh. "m"	Internal rate of returns (IRR) %
A	(124)	56	80	24	-	-	-	11	16
B	(128)	16	24	40	42	84	(6)	13.8	13
C	(48)	24	24	12	2	-	-	4	15
D	(200)	60	100	50	58	-	-	14.4	13
E	(24)	5	11	15	42	-	-	3.8	17
F	(80)	49	50	-	-	-	-	5.8	15

There is no option to delay any of the projects. All projects except project A can be scaled down but cannot be scaled up. The company has a current cost of finance of 10% but it would take one year to establish further funding at that rate. Further funding for short periods could be arranged at a higher interest rate.

Required:-

- i) The projects that should be undertaken in the order of their priority.
- ii) The net present value (NPV) and the internal rate of return (IRR) for the projects undertaken.
- iii) Estimate and advise on the maximum interest rate that the company should pay to finance all the remaining.

QUESTION 2

- a) R Ltd. is considering a project with the following cash flows

Year	Cost of plant Sh. "000"	Running costs Sh. "000"	Savings Sh. "000"
0	10,000	-	-
1	-	4,000	12,000
2	-	5,000	14,000

R Ltd.'s cost of capital is 9%,

Required:

- (i) Determine the sensitivity of the project to changes in the levels of cost of plant, running costs and savings (Considering each factor at a time) and assuming each factor is varied adversely by 10%.

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(ii) Comment on the factor which is most sensitive to adverse variations.

b) Tajiri Ltd. is considering investment in three risky projects namely; projects A, B and C. The following information relates to the three projects

Project A

This project will require an initial investment of Sh. 50,000,000. The estimated annual net cash inflows over the next five years under the three states of nature are as follows:

State of nature	Probability	Amount (Sh. "000")
Most pessimistic	0.25	13,500
Most likely	0.50	18,000
Most optimistic	0.25	20,000

Concerns have been raised about the possibility that this project will infringe on a competitor's patent. If this was the case and the competitor successfully pursued a claim for damages, the competitor may have to be paid as much as Sh. 100, 000,000 in the third year. Lawyers estimate that there is only a 0.1 probability that this will happen.

Project B

This project will require an initial outlay of Sh.50, 000,000 spread in equal installments over the next three years to finance a research project. If this project is successful and there is a probability of 0.5 of this happening, it will lead to issuance of a patent right with an estimated value at the end of the three years of Sh. 200,000,000. If not successful, the whole of the expenditure would have to be written off.

Project C

This project will have an initial cost of Sh.20, 000,000 and is expected to yield annual cash flows of Sh.8, 000,000 in each of its first two years. Thereafter, the outcome is so uncertain that no estimate can be given.

The company's cost of capital is 14% per annum.

Required:

Advise Tajiri Ltd. on whether they should undertake the projects above.

QUESTION 3

a) Betty Muye has invested 75% of her funds in shares of company X and 25% in shares of company Y. The following probability distribution relates to the shares of the two companies.

State of economy	Probability	Return on company X shares (%)	Return on Company Y shares (%)
Boom	0.2	24	5
Steady growth	0.6	12	30
Slump	0.2	0	-5

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Required:

- i) Expected returns on the shares of companies X and Y.
 - ii) Standard deviation of return on shares of companies X and Y.
 - iii) Coefficient of Correlation between the returns on shares of companies X and Y.
 - iv) Expected portfolio return.
 - v) Portfolio risk.
- b) Superstar Ltd. wishes to estimate its equity beta. The financial analyst of the company has recorded the following information for the year 2012:

Month	Return on market portfolio (%)	Return on company equity (%)
January	2	3
February	-1	-2
March	3	4
April	0	1
May	2	2.5

The following data has been calculated from the above financial information:

Variance on return on market portfolio (σ^2_m) = 2.16

Variance on return of company equity of Superstar Ltd. (σ^2_s) = 4.36

Correlation coefficient between market returns and Superstar Ltd.'s equity return ($P_{m,s}$) = -0.96

Required:

- i) Equity beta of the company.
- ii) Using the capital asset pricing model (CAPM), determine the required rate of return on Superstar Ltd's share. Assume the risk free rate is 10% per annum and the return on market portfolio for the same period is 14%.

QUESTION 4

The Awendo Investment Fund (AIF) has a total of sh. 500 million invested in five stocks:

Stock	Investment (sh.)	Stock's beta coefficient
A	160 million	0.5
B	120 million	2.0
C	80 million	4.0
D	80 million	1.0
E	60 million	3.0

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The risk free rate of return is 8% whereas the market returns have the following estimated probability distribution for the next period:

	Market return (%)	Probability
A	10	0.1
B	12	0.2
C	13	0.4
D	16	0.2
E	17	0.1

Required:

- i) The expected return from the market
- ii) The beta coefficient for the investment fund
- iii) The estimated equation for the security market line (SML)
- iv) The investment fund's required of return for the next period

QUESTION 5

- a) Galaxy Limited is an all equity financed company with a cost of capital of 18.5%. The company is considering the following-capital investment projects:

Project	Initial outlay Sh. '000'	Expected cash flows in one year. Sh. '000'	Beta
A	1,000	1,095	0.3
B	1,000	1,130	0.5
C	1,500	1,780	1.0
D	2,000	2,385	1.5
E	2,000	2,400	2.0

The risk free rate is 8% and the expected return on an average marker portfolio is 15%.

Required:

- i) Using the Capital Asset Pricing Model (CAPM), show the projects that are- acceptable.
- ii) Galaxy limited beta factor
- iii) Show the projects that would be accepted and rejected if they were discounted at the firm's cost of capital.

Highlight those projects where an incorrect decision would be made.

QUESTION 6

Huge Ltd. is contemplating a complete share acquisition of Tiny Ltd. Huge Ltd is offering three of its shares for every two shares of Tiny Ltd.

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The data relating to the two companies are shown below:

	Huge Ltd	Tiny Ltd
	Sh.	Sh.
Earnings to ordinary shareholders	5,190,360	2,340,000
Earnings per share (EPS)	14.80	29.25
Market price per share (MPS)	222	322
The corporate tax rate is 30%		

Required:

- i) Determine the maximum offer price that will not dilute the EPS of Huge Ltd.
- ii) Compute the premium payable to the shareholders of Tiny Ltd
- iii) Given that the growth rate of Huge Ltd. is 8% while that of Tiny Ltd is 12%, compute the combined growth rate of the two companies

QUESTION 7

- (a) Kubwa Ltd is considering acquiring Ndogo Ltd through a share exchange. Under the terms of acquisition, Kubwa Ltd will offer one of its shares in exchange for every two shares in Ndogo Ltd. The summarized financial information relating to the two companies for the year ending 30 November 2007 are as shown below:

	Kubwa Ltd	Ndogo Ltd
Profit after tax (Sh.)	150 million	30 million
Number of shares	25 million	8 million
Earnings per share (Sh)	6.00	3.75
Market price per share (Sh.)	78.00	33.75
Price-earnings ratio	13.00	9.00

Required:

- i) The earnings per share of the combined company after merger
- ii) If the share price-earning ratio after the merger falls to 12, what would be the premium received by the shareholders of Ndogo Ltd (Using the combined company's new share price)?
- iii) the share price-earning ratio after the merger falls to 12, would the merger be beneficial to the shareholders of Kubwa Ltd.? Justify your answer

QUESTION 8

Orange Limited and Rainbow Limited are companies operating in the same line of business. In the past few years, Orange Limited has experienced stiff competition from Rainbow Limited to an extent that Orange Limited is now contemplating acquiring Rainbow Limited to consolidate its market share.

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The following financial data is available about the two companies.

	Orange Limited	Rainbow Limited
Annual sales (million)	Sh 375	Sh 45
Net income (million)	Sh 30	Sh 3.75
Ordinary shares outstanding (million)	7.5	1.5
Earnings per share (EPS)	Sh 4	Sh 2.5
Market price per share	Sh 42	Sh 18

Both companies are in the 30 per income tax bracket.

Required;-

- i) Maximum exchange ratio Orange Ltd should agree to if it expects no dilution in its EPS.
- ii) Premium the shareholders of Rainbow Ltd would receive at the exchange ratio obtained in (b) (i) above?
- iii) Orange Limited's post-acquisition EPS if the two companies agree on an offer price of Sh 21.
- iv) Orange Ltd's EPS if every 50 shares of Rainbow Ltd are exchanged for one 12% debenture of sh1,000 per value.

QUESTION 9

- a) Explain two ways in which a firm can hedge against a currency transaction exposure
- b) Cotts Importers Ltd, a company based in Kenya, has been a regular importer of goods from the United States of America (USA). The Kenyan currency is the Shilling (Sh.) while the USA currency is the dollar (\$)

ON 1 June 2004, Cotts Ltd imported a consignment of goods from a supplier in the USA. The consignment cost \$1,000 and was payable on 1 September 2020.

The spot rates on 1 June and 1 September 2020 were as follows:

	\$/Sh.
1 June	0.007
1 September	0.006

September 2004 shilling futures were trading at \$0.00625/Sh (contract size Sh.1,194,000) as at 1 June 2004.

Required:

- i) Show how Cotts Ltd could have used a futures contract as a hedging tool, indicating any hedging profit or loss.
- ii) How many futures contracts would Cotts Ltd. have purchased if the contract size was Sh.2 million?

QUESTION 10

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- a) Masumbuko Limited, a Kenyan company, buys industrial machinery from a Malaysian company at a price of 10 million Milayaan Ringgit (MYR). The machinery will be delivered and paid for in six months' time. Masumbuko Limited seeks to establish its cost in Kenya shilling (Ksh.). The company decides to use the forward market to accomplish its objective. The following information is obtained from the bank:

	Kenya shilling (Ksh.)	Malaysian Ringgit (MYR)
Interest rate per annum	8%	9%
Spot exchange rates	2.041 Ksh/MYR	MYR 0.49/Ksh

The bank will charge a commission of 0.25% on any transaction.

Required:

- i) Advise the company whether or not to adopt a long or short forward strategy.
- ii) Compute the equilibrium forward rate for the Kenya shilling (Ksh.) under an indirect quote.
- iii) Determine the effect of the bank commission on the Malaysian Ringgit (MYR) value of the Kenya shilling.
- iv) Compute the price in Kenya shilling (Ksh.) that the company can establish by using the forward market.

QUESTION 11

- a) Utawala Hypermarket Ltd., a supermarket chain, is considering opening a new branch. The following details are relevant to the new branch.

	Sh. "million"
Estimated cost	12
Present value of net receipt	10
Net present value (NPV)	2

Though the project has a negative net present value (NPV), undertaking the project would provide the firm with the option of expanding by opening a second store.

The option would have the following details:

Timing (t)	5 years
Estimated cost	Sh 20 million
Net present value (NPV) of net receipts	Sh. 15 million
Volatility of cash flows	28.3%
Risk-free rate	6%

Required:

Using the Black-scholes option pricing mode, calculate the value of a call option on the second store and advise on whether or not to accept the first investment in the store.

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QUESTION 12

- a) Describe the following methods of credit enhancement.
- i) Excess spread.
 - ii) Overcollateralisation.
 - iii) Surety bond.
- b) The following information relates to Unified Holdings Ltd.'s capital structure, whose cost of debt varies according to its gearing level:

Gearing (%)	Cost of debt before tax
20	7.5%
30	8.1%
40	8.8%
50	10.5%
60	11%
70	13%
80	16%

Additional information

1. Risk free rate is 8%.
2. Market return is 16%.
3. Corporate tax rate is 30%.
4. The company's ungeared beta (asset beta) is 0.95

Required;

Unified Holding Ltd's optimal weighted average cost of capital (WACC).

QUESTION 13

- a) Two firms, A Ltd and B Ltd. operate in the same industry. The two firms are similar in all aspects except for their capital structures.

The following additional information is available:

1. A Ltd is financed using Sh.100 million worth of ordinary shares.
2. B Ltd is financed using Sh.50 million in ordinary shares and Sh.50 million in 7% debentures
3. The annual earnings before interest and tax are Sh.10million for both firms. These earnings are expected to remain constant indefinitely.
4. The cost of equity in A Ltd is 10%
5. The corporate tax rate is 30%

Required:

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Using the Modigliani and Miller (MM) model, determine the following:

- i) The market value of A Ltd. and B Ltd.
 - ii) The weighted average cost of capital of A Ltd and B Ltd.
- b) Proton Ltd. has a capital structure consisting of Sh.250 million in 12% debentures and Sh.150 million in ordinary shares of Shs.10 par value. The company distributes all its net earnings as dividends.

The finance manager of Proton Ltd. intends to raise an additional Sh.50million to finance an expansion programme and is considering three financing options.

Option one: Issue an 11% debenture stock

Option two: Issue 13% cumulative preference shares

Option three: Issue additional ordinary shares of Sh.10 par value.

The corporation tax rate is 30%.

Required:

Calculate the earnings before interest and tax (EBIT) and the earnings per share (EPS) at the point of indifference between the following financing options:

- i) Option one and option three
- ii) Option two and option three

QUESTION 14

(a) Kitunda Ltd. has estimated the cost of debt and equity for various financing gearing levels as follows:

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Proportion of debt	Required rate of return	
Capital	Debt %	Equity %
0.9	9.4	37
0.8	8.2	36
0.7	7.4	35.5
0.6	6.9	29.1
0.5	6.6	25.2
0.4	6.4	20.4
0.3	6.2	15.6
0.2	6.1	13.5
0.1	6	13.1
0	-	13

Required:

- (i) The optimal capital structure.
 - (ii) Kitunda Ltd. wishes to transform from its optimal gearing level to all-equity financed firm.
 - (iii) Modigliani and Miller's model with no taxes to determine the equity cost of capital.
- (c) Explain the meaning of the “pecking order theory”.

