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FINAL EXAMINATION
NOVEMBER 2023

MATRIC	
SECTION	
SEATING NO	
COURSE TITLE	**INTRODUCTION TO FINANCE**
COURSE CODE	**RFIN1113**
DATE/DAY	**14 FEBRUARY 2024 / WEDNESDAY**
TIME/DURATION	**02:00 PM - 04:00 PM / 02 Hour(s) 00 Minute(s)**

INSTRUCTIONS TO CANDIDATES :

1. Please read the instruction under each section carefully.
2. Candidates are reminded not to bring into examination hall/room any form of written materials or electronic gadget except for stationery that is permitted by the Invigilator.
3. Students who are caught breaching the Examination Rules and Regulation will be charged with an academic dishonesty and if found guilty of the offence, the maximum penalty is expulsion from the University.

(This Question Paper consists of **11** Printed Pages including front page)

*****DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO*****

ATTENDANCE SLIP

NAME ______________________ DATE ________
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This question paper consists of TWO (2) Sections. Answer ALL QUESTIONS in the question paper. [50 MARKS]

SECTION A (10 Marks)
There are TEN (10) questions in this part. Answer ALL questions in the question paper.

1. Investment A has an expected return of 15% per year, while Investment B has an expected return of 12% per year. A rational investor will choose

   A. Investment A because of the higher expected return.
   B. Investment B because a lower return means lower risk.
   C. Investment A if A and B are of equal risk.
   D. Investment A only if the standard deviation of returns for A is higher than the standard deviation of returns for B.

2. If you were to use the standard deviation as a measure of investment risk, which of the following has historically been the least risky investment?

   A. common stock of large firms
   B. common stock of small firms
   C. Malaysian Government Treasury bills
   D. long-term government bonds

3. You are considering investing in Ford Motor Company. Which of the following are examples of diversifiable risk?
   I. Risk resulting from possibility of a stock market crash.
   II. Risk resulting from uncertainty regarding a possible strike against Ford.
   III. Risk resulting from an expensive recall of a Ford product.
   IV. Risk resulting from interest rates decreasing.

   A. I only
   B. I and IV
   C. II, III
   D. I, II, III, IV

4. Which of the following statements concerning junk bonds is **MOST CORRECT**?

   A. A rational investor will always prefer a AAA-rated bond to a junk bond.
   B. Junk bonds may also be called low-yielding securities.
   C. Junk bonds have higher interest rates than AAA-rated bonds because of the higher risk.
   D. Junk bonds are priced higher than AAA-rated bonds because junk bonds are more risky.

5. Which of the following is **TRUE** of a zero coupon bond?

   A. The bond sells at a premium prior to maturity.
   B. The bond has a zero par value.
   C. The bond makes no coupon payments.
   D. The bond has no value until the year it matures because there are no positive cash flows until then.

6. Higher flotation costs will result in all of the following **EXCEPT**

   A. higher cost of retained earnings.
   B. higher after-tax cost of debt.
   C. higher weighted average cost of capital.
   D. higher cost of common equity when new common shares are sold.

7. A firm's cost of capital is influenced by

   A. capital structure.
   B. the current ratio.
   C. par value of common stock.
   D. net income.

8. Cost of capital is

   A. the rate of return that must be earned on additional investment if firm value is to remain unchanged.
   B. the coupon rate of debt.
   C. a hurdle rate set by the board of directors.
   D. the average cost of the firm's assets.

9. Preferred stock is similar to a bond in the following way:

   A. Both investments provide a stated income stream.
   B. Preferred stock always contains a maturity date.
   C. Both contain a growth factor similar to common stock.
   D. Both provide interest payments.

10. In general, which of the following rankings, from highest to lowest cost, is most accurate?

    A. cost of new common stock, cost of retained earnings, cost of preferred stock, cost of debt
    B. cost of new common stock, cost of preferred stock, cost of debt, cost of retained earnings
    C. cost of debt, cost of preferred stock, cost of new common stock, cost of retained earnings
    D. cost of preferred stock, cost of new common stock, cost of retained earnings, cost of debt

SECTION B **(40 Marks)**

There are THREE (3) questions in this part. Answer ALL questions in the question paper.

QUESTION 1 **(10 Marks)**

Zeu's Cafe Berhad's (ZCB) capitals are as follows:

Bonds: The company's callable bond was sold for RM800 and will be redeemed at RM1100 per unit. The bond has a maturity of 20 years with semi-annual coupon of 5.25% per annum.

Preferred stocks: The dividend rate is 8% on a par value of RM100, and the interest rate is 7.15%.

Common stocks: The company paid dividend for financial year ending 2022 for RM0.042 per unit. The current rate of return is 6.5% and the constant growth dividend is 3.5%.

New bonds: As part of the company's expansion, new bonds issuance is planned at the end of 2024. The bond maturity is 15 years, quarterly coupon at a rate of 8%, and floatation cost of 1.75%. The current interest rate is 6.75% p.a.

Required:

a) Calculate the bond's yield to maturity. (3 marks)

b) Calculate the price of the preferred stock. (2 marks)

c) Calculate the current price of the common stock. (2 marks)

d) Calculate the net proceed of the bond issuance. (3 marks)

QUESTION 2 **(10 Marks)**

ZCB's capital are comprises of:

Bonds:	Total valuation of RM2.4 million and the cost of capital is 7.89%.
Common stocks:	The cost of capital is 6.37%, with total value of outstanding issuance of RM8 million.
Preferred stocks:	The cost of capital is 10.33% and total valuation of RM2.38 million.

The company's beta is determined to be 1.75. The current interest rate is 3.78% and the return expected in the market is 8.30%. The company's tax rate is 24%.

Required:

a) Calculate the company's weighted average cost of capital (wacc)and adjusted wacc. (5 marks)

Capital Structure	Value (RM)	Rate (%)	Weig htage	Wacc (%)	Adj. Rate (%)	Adj. wacc (%)

b) Calculate the company's cost of capital based on Capital Asset Pricing Model. (2 marks)

c) You are interested in investing in the company. Will you proceed with the investment? Explain. (3 marks)

QUESTION 3 **(20 Marks)**

ZCB is considering a new inventory system that will cost RM2.5 million. Additional expenses of fitting the system will be incurred for RM0.3 million. At the end of the project, 20% of the initial outlay will be recovered.

The system is expected to generate positive cash flows over the next five years in the amounts of RM1.15 million in year 1, RM1.25 million in year 2, RM1.50 million in year 3, RM 0.80 million in year 4 and RM0.55 million in year 5. The company's weighted average cost of capital is 6.46%.

Required:

a) Calculate the Initial Outlay and Terminal Value of the project. (2 marks)

Initial Outlay:

Terminal Value:

b) Complete the following assessment of the project viability based on Capital Budgeting Model. (6 marks)

Year	OCF	PV	FV
0			
1			
2			
3			
4			
5			
	Total		

c) Calculate the Payback Period and the Discounted Payback Period. (2 marks)

d) Calculate the Net Present Value (NPV) and Profitability Index (PI). (2 marks)

e) Calculate the Internal Rate of Return (IRR) and Modified Internal Rate of Return (MIRR). (2 marks)

f) Based on Equivalent Annual Annuity, calculate the annualized payment of the project. (2 marks)

g) Should you accept the project based on the profitability criteria? Explain. (4 marks)

***** END OF QUESTION PAPER *****

FORMULA SHEET

Risk & Return	Expected Return $k\hat{} = P_1k_1 + P_2k_2 \ldots\ldots\ldots P_nk_n$ Standard Deviation: $\delta = \sqrt{\Sigma(k_i - k\hat{})^2 Pi}$ The Coefficient of Variation (CV): $CV = \sigma/k\hat{}$ The Expected Return on a Portfolio: $k\hat{}p = w_1k\hat{}_1 + w_2k\hat{}_2 + \ldots\ldots\ldots + w_nk\hat{}_n$ Portfolio Beta: $\beta_p = w_1b_1 + w_2b_2 \ldots\ldots + w_nb_n$ Security market Line = SML = $k = k_{rf} + (k_m - k_{rf})\beta$ $k = k_{rf} + (RP_m)\beta$
Security Valuation	Current yield = $\dfrac{\text{annual interest payment}}{\text{market price of bonds.}}$ Basic Security Valuation Equation: Value (V) = $\dfrac{CF_1}{(1+k)^1} + \dfrac{CF2}{(1+k)^2} + \ldots\ldots + \dfrac{CF_n}{(1+k)^n} + \dfrac{M_n}{(1+k)^n}$ VB = PMT (PVIFAi,n) + PV (PVIFi,n) $YTM = \dfrac{C + \dfrac{PV - MP}{n}}{\dfrac{PV + MP}{2}}$ Valuing Preferred Stock: $V_{ps} = \dfrac{\text{annual dividend}}{\text{required rate of return}} = \dfrac{D}{k_{ps}}$ Valuing Common Stock: Common Stock Value With Zero Growth. "A zero growth stock is perpetuity" $P_0 = \dfrac{D}{k_s}$ where: D dividend the investor expect k_s required rate of return Common Stock with Single Holding (one year holding) $V_{cs} = \dfrac{D_1}{(1+k_s)^t} + \dfrac{P_1}{(1+k_s)^t}$ Common Stock : Multiple Holding Periods $V_s = \dfrac{D_0(1+g)^t}{k_s - g}$

Cost of Capital	Cost of Common Equity DCF Approach: $k_s = \frac{D_1}{P_0} + g$ The CAPM Approach: $k_s = k_{rf} + (k_m - k_{rf})\beta$ The Risk-Premium Approach: $k_s = k_{rf} + (RP_M)\beta$ After-tax cost of debt = k_d(1-Tax rate). Cost of New Common Equity $k_s = \frac{D_1}{P_0(1-fc)} + g$ Cost of Retained Earning, $k_s = (D_1 / P_0) + g$ Weighted Average Cost of Capital (WACC) $k_{wacc} = w_d k_d (1 - T_c) + w_{ps} k_{ps} + w_{cs} k_{cs} + w_{ncs} k_{ncs}$
Capital Budgeting	Payback Period = BY + $\frac{UC}{CF}$ BY = the year before full recovery UC = the unrecovered cost at start of year CF = the cash flow during the year Net Present Value NPV = $\frac{\Sigma \text{ Annual Cash Flow}}{(1+k)^t}$ - Initial Investment Internal Rate of Return: IRR IRR = A + { $\frac{a}{a-b}$ x (B – A)} A = one of the discounting rate B = the other discounting rate a = the NPV at discounting rate A b = the NPV at discounting rate B Profitability Index (PI) PI = $\frac{\text{Present value of Future Net Cash Inflows}}{\text{Initial Outlays}}$

Common Financial Ratios:

Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	Inventory Turnover	$\frac{\text{Cost of Goods Sold}}{\text{Inventory}}$
Quick Ratio	$\frac{\text{Current Assets – Inventory}}{\text{Current Liabilities}}$	Receivables Turnover	$\frac{\text{Sales}}{\text{Accounts receivables}}$
Total Debt Ratio	$\frac{\text{Total Debts}}{\text{Total Assets}}$ x 100%	Average Collection Period	$\frac{\text{Receivables}}{\text{(Annual Credit Sales/360)}}$
Times Interest Earned Ratio	$\frac{\text{EBIT}}{\text{Interest Expense}}$	Fixed Assets Turnover	$\frac{\text{Sales}}{\text{Fixed Assets}}$
Net Profit Margin	$\frac{\text{Net Income}}{\text{Sales}}$ x 100%	Return on Assets	$\frac{\text{Net Income}}{\text{Total Assets}}$ x 100%
Return on Equity	$\frac{\text{Net Income}}{\text{Total Equity}}$ x 100%	Total Assets Turnover	$\frac{\text{Sales}}{\text{Total Assets}}$
Operating Profit Margin	$\frac{\text{Operating profit}}{\text{Sales}}$ x 100%	Earning Per Share	$\frac{\text{Net income}}{\text{Number of common share outstanding}}$

Time Value of Money Formula

TABLE 5-13 Summary of Time Value of Money Equations[a]

CALCULATION	EQUATION
Future value of a single payment	$FV_n = PV(1+i)^n = PV(FVIF_{i,n})$
Present value of a single payment	$PV = FV_n\left[\frac{1}{(1+i)^n}\right] = FV_n(PVIF_{i,n})$
Future value of an annuity	FV of an annuity $= PMT\left[\frac{FVIF_{i,n}-1}{i}\right] = PMT\left[\frac{(1+i)^n-1}{i}\right] = PMT(FVIFA_{i,n})$
Present value of an annuity	PV of an annuity $= PMT\left[\frac{1-PVIF_{i,n}}{i}\right] = PMT\left[\frac{1-(1+i)^{-n}}{i}\right] = PMT(PVIFA_{i,n})$
Future value of an annuity due	$FV_n(\text{annuity due}) = PMT(FVIFA_{i,n})(1+i)$
Present value of an annuity due	$PV(\text{annuity due}) = PMT(PVIFA_{i,n})(1+i)$
Future value of a single payment with nonannual compounding	$FV_n = PV\left(1+\frac{i}{m}\right)^{mn}$
Present value of a perpetuity	$PV = \frac{PP}{i}$

Notations: FV_n = the future value of the investment at the end of n years
n = the number of years until payment will be received or during which compounding occurs
i = the annual interest or discount rate
PV = the present value of the future sum of money
m = the number of times compounding occurs during the year
PMT = the annuity payment deposited or received at the end of each year
PP = the constant dollar amount provided by the perpetuity

[a] Related tables appear in Appendixes B through E at the end of the book.