



ZCAS University

**POSTGRADUATE
(MBF/MAF/MFRM/MEF)**

**BAC5302 CORPORATE FINANCE
MID-SEMESTER TEST**

THURSDAY 19 OCTOBER 2023

16:30 TO 19:30

**TIME ALLOWED: THREE HOURS
(5 minutes to read through the paper)**

INSTRUCTIONS:

1. Section A: This question is **compulsory** and must be attempted.
2. Sections B: **Answer Two (2)** questions from this section.
3. This examination paper carries a total of **100 marks**.
4. Candidates must **not turn this page** until the invigilator tells them to do so.

SECTION A: COMPULSORY QUESTION

QUESTION ONE:

Sheila plc is evaluating the purchase of a new machine costing K270,000 with a life of 5 -years and zero scrap value at the end of the project's life. This investment will be financed by 9% K70,000 bank loan repayable in equal instalments over 5 years. Interest is payable on a declining basis.

The machine will produce after-tax net operating cash flows of K80,000 per year for 8 years. These cashflows are after adjusting for depreciation tax shield. The ungeared cost of equity is 12%. Corporate tax is at 30% payable in the same year as profits. The after-tax issue cost of debt is K10,000.

REQUIRED:

- a) Calculate the Adjusted Present Value (APV) of the project and comment on the results.
[20 marks]
- b) Assuming that the overall cost of capital for Sheila plc is 10% and the re-investment rate is 8% per year, determine the Modified Internal Rate of Return (MIRR) and comment on the results.
[15 marks]
- c) Briefly discuss the specific steps needed to appraise a foreign project assuming that Sheila plc a Zambian firm is interested in taking up a 10-year project in Australia. [7 marks]
- d) Briefly discuss the following:
 - i. Advantages of APV method of appraisal over the NPV method [4 marks]
 - ii. Advantages of NPV method over the Internal Rate of Return (IRR) [4 marks]

[TOTAL: 50 MARKS]

SECTION B: Attempt any TWO (2) questions in this section.

QUESTION TWO

	SS plc	AA ltd	CC ltd
Number of shares	450 million	20 million	30 million
Total earnings	K60 million	K8 million	K7 million
Price earnings (P/E)	18 times		
Share price	K2.40		

SS plc is a manufacturing company that is considering acquiring 100% shareholding of AA ltd a supplier of raw materials and 100% of CC ltd a retailer. One share in SS ltd will be issued for one in AA ltd. Similarly, one share in SS plc will be issued for one share in CC ltd. The synergetic earnings post-acquisition is expected to K5million. SS plc value its shares using its own price earnings ratio.

REQUIRED:

- a) Calculate the post-acquisition EPS SS plc considering the synergetic earnings. [10 Marks]
- b) Determine the share price and the company value of SS plc post-acquisition. [6 marks]
- c) Identify the form of acquisition under consideration in the SS plc case and discuss the possible motivation for this kind of business growth. [9 marks] [Total 25 marks]

QUESTION THREE

Dahlia Co a AA-rated firm has a mix of long-term sources of finance given below.

	K'm
Ordinary share capital (K0.5)	60,000
Share premium	10,000
Bonds redeemable in 7 years	<u>30,000</u>
Total equity and liabilities	<u>100,000</u>

The ordinary shares are currently trading at K2.0 ex-div while the bonds are quoted at par. The return on the market is 12% while the current yield on a 7-year government bonds is 8.5%. The beta coefficient of the firms' ordinary share is 1.3 and corporate tax is at 25%

REQUIRED:

- a) Calculate Dahlia Co.'s overall cost of capital (WACC). **[13 marks]**
 - b) Briefly discuss ANY FOUR assumptions supporting the Capital Asset Pricing Model (CAPM) and highlight any weaknesses associated with identified assumptions. **[12 marks]**
- [Total: 25 Marks]**

QUESTION FOUR

Dustin Co is a firm that is actively involved in championing the reduction in CO2 emissions in the manufacturing sector. The firm 's capital structure is given below.

	K'000
Ordinary share capital (K1)	40,000
Reserves	_30,000
10% Bank loan (2035)	<u>10,000</u>
Total equity and liabilities	<u>80,000</u>

In recent times world over, there has been growing interest in climate finance. Notable among the common themes is green finance which includes the issuance of green bonds.

REQUIRED:

- a) Briefly discuss green bonds as financing options and highlight the attractiveness of this source of finance to firm like Dustin Co. **[15 marks]**
- b) Calculate the current gearing ratio for Dustin Co based on debt to capital employed ratio. **[2 marks]**
- c) Re-calculate the gearing ratio in (b) if Dustin Co raised an additional K20m through the issuance of green bonds. **[8marks]** **[Total: 25 Marks]**

END OF TEST

Credit Spread by type of bond and maturity
Corporate spreads for Industries (in basis points)
1 basis point = 0.01%

Rating	1 year	2 year	3 year	5 year	7 year	10 year	30 year
AAA	5	10	15	20	25	33	60
AA	15	25	30	35	44	52	71
A	35	44	55	60	65	73	90
BBB	60	75	100	105	112	122	143
BB	140	180	210	205	210	250	300
B	215	220	260	300	315	350	450
CCC	1,125	1,225	1,250	1,200	1,200	1,275	1,400

FORMULAE SHEET

1. Discount factor = $\frac{1}{(1+r)^n}$

2. Annuity factor = $\frac{1-(1+r)^{-n}}{r}$

3. IRR (YTM) = $A + \left[\frac{a}{a-b} \times (B - A) \right]$

4. MIRR = $\left[\sqrt[n]{\frac{FVCF(\text{inflows})}{PVCF(\text{Outflows})}} \right] - 1$

5. CAPM: $r_i = r_f + \beta_i (r_m - r_f)$

6. $g = \sqrt[n]{\left(\frac{\text{Latest dividend}}{\text{Earliest dividend}} \right)} - 1$

7. WACC = $r_e \left(\frac{V_e}{V_e + V_d} \right) + r_d (1 - t) \left(\frac{V_d}{V_e + V_d} \right)$

8. Corporate yield = risk free rate + credit spread

9. $\beta_J = \frac{\text{Correlation}_{Jm} * SD_J}{SD_m}$

10. $K_e = \frac{d_0 (1 + g)}{P_0} + g$

11. Beta x = $\frac{\text{Correlation x with market} * \text{Std dev of return x}}{\text{std dev of market return}}$