Part (a) Determine Plastix's weighted average cost of capital as at 31 December 2022.		**Marks**
Preference shares		
Market value calculation		
Dividends to be paid in 2024		
2024 dividend (12 000 x R100 x 10%)	120 000	1
Dividends in arrears (3 x 120 000) – FY21, FY22, FY23	360 000	1
	480 000	
Add: perpetual value of future dividends (120 000 / 8%)	1 500 000	1
Total	1 980 000	
Present value factor $(1 / 1{,}08)^2$	0,8573	½+½
Present value of preference shares	1 697 531	1C
Alternative		
Present value of preference shares	*1 697 531*	*1C*
FV: 1 980 000		
N: 2		*½*
I: 8%		*½*
Cost of preference shares	8%	1
Loan		
Market value calculation		
PMT: 762 039		½C
N: 10		½
I: 8,5%		½
FV: 0		
Fair value (present value): 5 000 000		½
PMT: 762 039		½C
N: 6		½
I: 8%		½
FV: 0		
Fair value (present value): 3 522 815		½C
Cost of debt: [0,08 x (1 – 0,27)] = 5,84%		1
Equity		
Cost of equity calculation		
Levered beta for Plastix [0,91 x ((1+(1-0,27)(0,67))] *1 mark for selection of correct beta* *1 mark for using correct debt-equity ratio* *1 mark for correctly levering with own inputs*	1,35	3
Risk free rate	8,69%	1
Cost of equity [0,0869 + 1,35(0,07)]	18,14%	1C
Alternative 1		
Market value of equity		
EBITDA (Gross profit – operating cost) *Alternative: (Operating profit + depreciation)*	3 293 000	1

Part (a) Determine Plastix's weighted average cost of capital as at 31 December 2022.			**Marks**
EBITDA multiple *Plastic manufacturers closely aligned to Plastix*		5,3	1
Discussion of relevant adjustment to EBITDA multiple with direction of impact (e.g. unlisted status (-), ESG focus (+), etc.)			1P
Enterprise value		17 452 900	
Less: Market value of debt		(3 522 812)	½C
Less: Market value of preference shares		(1 697 531)	½C
Value of equity		12 232 557	
Weighted average cost of capital calculation			
Determine weights based on market value			1C
Equity	12 232 557	70,09%	
Preference shares	1 697 531	9,73%	
Loan	3 522 812	20,18%	
	17 452 900		
WACC (18,14% x 70,09% + 8% x 9,73% + 5,84% x 20,18%)		14,27%	1C
Alternative 2			
Weighted average cost of debt			2C
Market value of debt	3 522 812	67,48%	
Market value of preference shares	1 697 531	32,52%	
	5 220 343		
Preference shares given as debt financing			
Weighted average cost of debt (67,48% x 8% + 32,52% x 5,84%)		7,30%	2C
WACC (7,30% x 40% + 18,14% x 60%) *1 mark for weighting based on debt ratio* *1 mark for calculating the WACC*		13,80%	1+1C
		Available	**22**
		Maximum	**22**
		Total for part (a)	**22**

Part (b)	**Criticise the net present value analysis performed by the financial management team of Plastix.**	**Marks**
1	There is **no adjustment for a potential increase in sales prices** to account for inflation or general price increases, only the increase in sales volume has been adjusted for. Furthermore, the **NPV does not seem to incorporate the impact of lost sales (opportunity costs)** from the existing bottles which will arise due to the shift to bioplastic bottles (and whether the 10% volume increase is due to this). The **uniform 10% increase in sales volumes** might not be reasonable unless the sales are contracted.	1 1 1
2	**No adjustment was made for inflation** on the cost of sales and operating costs (or operating profit), both of which are likely to be subject to inflationary pressures as input costs.	1
3	The factory manager is already in the employ of Plastix. This cost is therefore **not an incremental cost** and should not be included.	1
4	The provision for working capital should only be for the **movement in working capital**. By including it in the operating profit calculation and adjusting with 10% annually, the full working capital amount is included every year.	1
5	Also, the provision for working capital should be **included at the beginning of the project**. Currently it is included at the end of the first year.	1
6	**Working capital recovered at the end of the project was not included in the calculation** – this should be included as a recovery in the final year of the forecast period, with an adjustment when determining the terminal value to avoid overstating the value.	1
7	It does not seem accurate that the operating profit increases with the 10% annual increase in sales units. This would imply that **all costs are variable in nature**, which will probably not be the case (e.g. employee salaries will not vary with production volumes). There could be **additional incremental costs** that are currently not fully incorporated (e.g., higher electricity costs). It is **unreasonable to assume that the costs would increase at the same rate**, e.g. the electricity increases has been growing at significantly higher rates OR the constant increase of 10% **does not consider the different components of the costs and/or their specific growth rate**.	1 1 1
8	Even though the cost of the research still has to be settled, **the cost has been incurred and is regarded as sunk cost OR the payment of the balance of the research cost has already been committed**. The cost does not influence the decision at hand and should therefore be ignored.	1
9	**Loan repayments should not be included in the investment decision** because this is financing, and the cost of finance is already included in the WACC. By including this, the **cost of debt is double counted**.	1
10	The **benefit of cheaper supplier finance**, being present value of the difference between the loan finance cost at normal cost of debt and the loan at the special rate, was **omitted from the NPV calculation**.	1
11	**Taxation was ignored completely** and should be taken into account because Plastix is a tax-paying entity.	1
12	The **basis of the hurdle rate of 15% is not substantiated** and is **not aligned to the WACC** calculated in part (a)	1

Part (b)	**Criticise the net present value analysis performed by the financial management team of Plastix.**	**Marks**
	The addition of 2% to account for the risk of the project is **arbitrary and should be explained/justified**.	1
13	The **initial cost of the machine** has not been taken into account.	1
14	The **scrap value from the machine that will be replaced now might have been omitted** in the NPV calculation if there are expected proceeds.	1
15	A **terminal value should not have been added unless the machine will be consistently replaced,** and the relevant cost incorporated. The machine will **not be used into perpetuity**. *Alternative: The machine is said to have a **useful life of 5 years** and therefore the **estimation of a terminal value instead of the resale value** at the end of the five year period is inappropriate.*	1
16	Furthermore, the use of an 8% growth rate in perpetuity seems aggressive especially considering the **recent low growth environment in SA**.	1
17	The **discounting of the cash flows has been incorrectly undertaken from 2023** instead of immediately. These cash flows only occur at the end of the first year.	1
18	**No sensitivity or scenario analysis** has been performed – which would help inform a view of critical assumptions that drive the valuation.	1
	Available	**23**
	Maximum	**14**
	Communication skills – appropriate style	***1***
	Total for part (b)	**15**

Part (c)	**Describe the key risks and considerations that Plastix would face if acquired by Suntory.**	**Marks**
	Key risks	
1	The acquisition **could result in retrenchments of Plastix's staff** to optimize operations, leading to **low morale of the remaining employees** or even possible retaliation from labour unions.	2
2	As majority of shares will be **owned by a foreign company**, there could be **customers that no longer wish to trade with Plastix** and look for companies that are locally owned and contribute to the development of the local economy (loss of customer goodwill) no longer.	2
3	Plastix management should consider shareholder related risks such as **valuation risks, financing risks, currency risks** on the purchase considerations, **deal-execution** and the **non-controlling** shareholding post the acquisition, to ensure that continued shareholder support during and post the transaction.	2
4	There could be a **clash of corporate cultures** or communication issues given the cultural differences (e.g. language and time zone differences) between a Chinese and South African company.	2
5	These corporate culture clashes and **other integration issues** could lead to the **loss of key staff** (young entrepreneurs who started the company) who might feel uncomfortable or threatened by the acquisition, with the potential for retrenchments post acquisition.	2
6	**Differences in salary scales** could cause further **unhappiness among staff** members. These need to be considered especially if Suntory is likely to bring in expatriate staff at more attractive packages than local staff.	2
7	Suntory might have a **lack of understanding of the business environment in South Africa**, causing them to make sub-optimal business decisions.	2
8	**Differences in the legal structures** of the two countries could lead to legal and operational issues. (e.g. what would the impact of the acquisition by Suntory be on the BEE rating of Plastix?)	2
9	**Integration of activities** between two countries is complex and may result in delays which could lead to disruption of operations (management distraction).	2
10	**Suntory is likely to make operational changes to achieve synergies** leading to workforce reduction (retrenchments) because of robotization / automation of operations and import of Chinese nationals to manage / work at Plastix reducing employment of locals in the company.	2
11	Suntory is a beverage conglomerate and might want to control Plastix so that Suntory can set a **low transfer price** on the sale of bottles from Plastix to Suntory. This would result in lower profit for Plastix.	2
12	The acquisition could result in **increased activity** between Plastix, Suntory or any of its subsidiaries resulting in **currency risk exposure for Plastix**.	2
13	Being owned by a Chinese company, it could introduce geopolitical risks that Plastix was not exposed to as a South African owned company.	2
	Considerations:	
14	It needs to be considered whether Suntory is a **strategic fit / partner for Plastix**. Their value-add regarding resourcing, skills, expertise, funding etc. would be a key consideration.	2
15	Plastix may now have **access to more finance** which may allow for expansion opportunities.	2
16	**Synergistic benefits** offered by the new company may allow Plastics to reduce its operating costs as the new company.	2
17	Suntory's international exposure could offer significant **growth opportunities** for Plastix through international expansion.	2
	Available	**34**

Maximum	**12**
Communication skills – clarity of expression	***1***
Total for part (c)	**13**
TOTAL FOR THE QUESTION	**50**