

Paper 5 Crib 22/23

Question 1

a) Balance sheet for the year ending 30th September 2021

	30th September 2021 £'000		30th September 2020 £'000	
ASSETS				
Non-current assets				
Land		20		20
Equipment and vehicles	45		35	
Less: Accumulated Depreciation	-21		-17	
		24		18
Current assets				
Inventory		9		12
Accounts receivable		32		15
Prepayments		6		6
Cash		4		24
Total		95		95
LIABILITIES and EQUITY				
Current liabilities				
Accounts payable		19		27
Interest payable		3		3
Non-current liabilities				
Long term loan		14		24
Equity				
Contributed capital		39		29
Retained earnings		20		12
Total		95		95

b) Income Statement for the year ending 30th September 2021

Sutlej Ltd

Income Statement

For the Year Ended 30th September 2021

	£'000
Sales	28
Cost of goods sold	5
Gross profit	23
Depreciation Expense	4
Interest Expense	3
Net income	16
Dividend	8
Retained earnings	8

c) Statement of Cash Flows under the direct method for the year ending 30th September 2021

Sutlej Ltd

Statement of Cash Flows

For the Month Ended 30th September 2021

Cash flows from operating activities:	£'000
Cash collections from customers	11
Cash paid to suppliers	-8
Cash paid for interest	-3
Cash paid for stock	-2
Net cash increase due to operating activities	-2
Cash flows from investing activities:	
Cash paid for equipment	-10
Net cash decrease due to investing activities	-10
Cash flows from financing activities:	
Repayment of loan	-10
Stock issuance	10
Dividend payment	-8
Net cash decrease due to financing activities	-8
Net change in cash	-20
Beginning cash balance	24

d)

Balance sheet

Shows the company's financial position at the end of the fiscal year: the economic resources (assets) it controls and where its finance comes from (liabilities and equity)

It is a status report (a "snapshot" at a specific moment)

Income statement and cash flow statement

Set out the financial performance of the company's operations during the fiscal year

Measure flows of wealth (profit) and cash respectively

Present "flow" data (covering a period)

Cash flow - Direct method

Provides greater clarity by setting out operating cash receipts and payments

No accruals adjustments made, hence less susceptible to manipulation than the indirect method

Cash flow Indirect method

Sheds light on quality of reported earnings by reconciling earnings with net cash position

Reveals link between profits and cash, hence demonstrates ability to convert profits into cash

Analyses the sources of cash inflow and outflow from operating activities, investing activities and financing activities

Cash is more objective and harder to manipulate than profit and may be a more accurate measure of performance.

It is also easier to understand and easier to compare performance across time and across firms.

Firm survival depends on liquidity and firms must be concerned with cash (liquidity) as well as profit since firms that are short of cash may have to curb their activities and, in extreme cases, may go bust.

This can happen even if firms have a long term profitable future, if in the short term they are short of cash. An example of this is *overtrading*.

The cash flow statement does not give the full picture – a profitable, growing company may have the same cash flow as a declining business with much lower profitability. Thus cash flow needs to be examined together with the Balance Sheet and Income Statement.

2

a) Profitability

Return on Equity (ROE) = Net profit /average equity

Measures the rate of return on the ownership interest (shareholders' equity) of the common shareholders. Net profit (net income) is after taxes and preferred dividends and Equity is common (ordinary) equity – excludes preferred equity

Return on Capital Employed (ROCE) = Operating profit/average capital employed

Measures the rate of return on the long-term capital invested in the business and shows how effectively funds have been deployed. Where Capital employed is commonly measured as total assets – current liabilities

Liquidity

Current ratio = Current assets /current liabilities

Acid test or Quick ratio = Current assets -inventory/current liabilities

The higher the ratios, the more liquid the business. Acid Test is used particularly where inventories may not be turned into cash quickly. Often assumed that ideally Current Ratio is 2:1 Acid Test Ratio is 1:1 but this depends on the type of business

- manufacturers: high ratios as they have high inventories, receivables

- supermarkets: low ratios as they have low inventories, high payables

Leverage ratios

Capture financial risk by indicating how much of the financing comes from debt. Important because debt is a fixed claim that has to be repaid, otherwise the business goes bankrupt. Companies may rely on borrowing because they have insufficient funds, debt financing is cheaper than equity financing, and interest payments are tax-deductible. Leverage increases shareholder return if profit generated with debt is greater than the fixed interest payments.

Debt to equity ratio = Liabilities/ equity

Interest coverage ratio (debt service coverage ratio) = Operating profit/interest payable

Investment

Dividend Yield - The cash return on shareholders' investment = Dividend per share/ share price

Earnings per Share - Measures the earnings generated by the business and available to shareholders. Net profit is after taxes and preferred dividends.

Earnings per share = Net profit/average number of common shares

This is useful for tracking company performance over time but not very helpful in comparing companies as they may have a different number of shares in issue.

b) Answers to include points such as: -

Inventory turnover is an efficiency measure.

Inventory turnover = Cost of Sales /Average inventory - Where average inventory is commonly the average of the opening (end of previous year) and closing (end of year) inventories. It represents the number of times inventories are sold and replaced during the year.

£m	P	2021	2020	2019	2018
Turnover		29,895	29,048	28,993	29,007
Cost of sales		27,529	27,203	26,977	26,719
Profit/(loss) after tax		677	(201)	152	186
Inventory		1,797	1,625	1,732	1,929
Cost of sales		27,529	27,203	26,977	
Average inventory		1711	1678.5	1830.5	
Inventory turnover		16	16	15	

£m	Q	2021	2020	2019	2018
Turnover		2498	2332	1757	1,599
Cost of sales		1563	1532	1165	1,051
Profit/(loss) after tax		(186)	(78)	(212)	-45
Inventory		87	62	52	57
Cost of sales		1,563	1,532	1,165	
Average inventory		74.5	57	54.5	
Inventory turnover		21	27	21	

Holding inventories is costly, but the business must consider likely demand, supply shortages, price rises etc. The high street shop has a higher inventory turnover, at 16 times, than the online retailer so the online retailer is turning its stock over slower than the high street shop.

P has improved its inventory turnover very slightly in the past 2 years, whereas Q's inventory turnover improved in 2020, but declined again in 2021. 2020 was the worst year affected by Covid, but it would be expected to hit the high street shop more than the online retailer.

It would be necessary to know more about the businesses to reach any firm conclusions. For example Q may have branched out into stocking more items which have a long shelflife such as crockery. Similarly, P may have changed their product range which might explain the change in stock levels.

Students may also comment on the relative profitability of the two companies and how better stock control might improve profitability.

c) Factors to consider when using ratio analysis (answers to include)

Business factors: - Type of business; quality of management; economic and market conditions; management actions (eg goodwill write-off); and changes in business (restructuring)

Accounting policies: - eg Fair value vs. historical cost; Immediate write-off of goodwill vs. capitalisation and amortisation

Difficult to compare across businesses in different sectors. Even within the same sector of when comparing the same business in different years, the choice of accounting policy can affect the numbers. Ratios such as price earnings ratio can be affected by overall changes in the market price, which may not be entirely related to the business in question.

d) Information which may be relevant when considering an investment: -

Directors' report

Future information such as order levels or budgets.

Current fair or market values of assets being acquired

Level of business risk. Highly profitable companies may also be highly risky, whereas a less profitable company may have more stable 'quality' earnings

Expected price to acquire a company

A poorly performing business may be a more attractive to purchase than a highly profitable business because it has higher potential for change/growth.

Performance of similar businesses/market sector

Degree of fit/complementarity with existing business (if any)

Reputational risk of entering a new field of business.

Economic and market conditions

(a) Cost per unit under full absorption costing £

Total annual overhead costs

Machine set up costs 30,850

Machine running costs 54,000

Procurement costs 73,000

Delivery costs 39,000

196,850

Overhead absorption rate:	W	X	Y	Z	Total
Production volumes	11,000	15,500	11,000	17,500	
Labour hours per unit	0.05	0.1	0.13	0.25	
Total labour hours	550	1,550	1,430	4,375	7,905

Therefore, overhead absorption rate £
 $\frac{196,850}{7,905} = 24.90$ per hour

	W £	X £	Y £	Z £
Raw materials	8.00	6.00	7.60	7.00
Direct labour	0.68	1.35	1.76	3.38
Overheads	1.25	2.49	3.24	6.23
Full cost per unit	9.92	9.84	12.59	16.60
Selling price	16.00	12.00	13.20	15.00
Profit per unit	6.08	2.16	0.61	- 1.60

c) Cost per unit under activity based costing

Cost pools	£	Cost Driver		Cost £ per driver
Machine set up costs	30,850	48	production runs	642.71
Machine running costs	54,000	36,150	machine hours	1.49
Procurement costs	73,000	94	purchase orders	776.60
Delivery costs	39,000	136	Deliveries	286.76
	196,850			

Allocation of overheads to each product

	W	X	Y	Z	Total
	£	£	£	£	£
Machine set up costs	3,856	14,782	7,713	4,499	26,994
Machine running costs	8,216	11,577	10,680	23,527	45,784
Procurement costs	7,766	17,085	20,968	27,181	65,234
Delivery costs	1,434	12,904	7,456	17,206	37,566
Total	21,272	56,349	46,817	72,413	175,578

	W	X	Y	Z
	£	£	£	£
Total cost per unit				
Materials	8.00	6.00	7.60	7.00
Labour	0.68	1.35	1.76	3.38
Overhead cost per unit	1.93	3.64	4.26	4.14
Total cost per unit	10.61	10.99	13.61	14.51
Selling price	16.00	12.00	13.20	15.00
Profit per unit	5.39	1.01	- 0.41	0.49

d) When comparing the full unit costs for each of the products under absorption costing as compared to activity based costing (ABC), the following observations can be made:

Product W

The unit cost for product W is higher under ABC as opposed to traditional absorption costing. Under ABC, it is £10.61 per unit compared to £9.92 under traditional absorption costing. Given the selling price of £16 per unit it is profitable under either costing system but more profitable under absorption costing.

Product X

The unit cost for product X is also higher under ABC as opposed to traditional absorption costing. Under ABC, it is £10.99 per unit compared to £9.84 under traditional absorption costing. Given the selling price of £12 per unit it means that X makes only a relatively small profit under ABC; only £1.01 per unit.

Delivery costs are also high, with 45 deliveries a year being made for product X. Maybe the company could seek further efficiencies here. Also, machine set up costs are higher for product X than for any of the other products, due to the larger number of production runs. The reason for this needs to be identified and, if possible, the number of production runs needs to be reduced.

Product Y

Product Y appears to make a small profit £0.49 per unit under ABC but makes a loss of £1.60 per unit under absorption costing. Thus the management need to look carefully at Y and see what cost savings could be achieved or whether the price could be increased. Product Y also makes up a relatively small percentage of the overall profit/loss of the company – just £6685.2 under absorption costing or 8% of the total. Thus it may be worth considering whether product Y should be discontinued and the resources redirected at one of the other products (product W in particular). Such a decision would involve consideration of the impact on the company's other products, the workforce and customers.

Product Z

Product Z appears to make a small profit £0.61 per unit under absorption costing but makes a loss of £0.41 per unit under ABC. This would imply different decisions under the two costing methods, but may simply mean that more accuracy is required in the numbers used. The unit cost for Y is 13% lower under ABC when compared to traditional costing. Identifying the reason for the differences in Z, it is apparent that the number of production runs required to produce Z is relatively low compared to the volumes produced, whereas the purchase orders and deliveries appear quite high. These numbers need careful review to ensure that the figures used in the analysis are accurate. Any inaccuracy could make the difference between Z appearing profitable or unprofitable. Are the correct cost drivers being used?

W appears to be a much more efficient and profitable use of resources than Z which requires high level of resource to make a very small level of profit. The management could consider whether there is unmet demand for W which could be filled by switching resources from other

less profitable products. Again this this decision would need to consider the impact on the company's other products, the workforce and customers.

4.

a) The overall average cost of Leaf's capital can be found by taking a simple weighted average of the costs of the two sources as follows: $WACC = \{10\% \times 60\% + \{5\% \times 40\% = 8\%$

b)

Depreciation has been included in "other costs" but since it is not a cash flow it must be removed. Annual depreciation using the straight line method is \$50,000 $\{(\$190,000 - \$40,000) / 3 \text{ years}\}$. Revenues and costs need to be further adjusted using the values of receivables and payables to convert them into cash flows.

Year	0	1	2	3	4
	£'000	£'000	£'000	£'000	£'000
Investment	-190			40	
Sales		220	340	290	
Less closing receivables		-20	-25	-30	
Add opening receivables		0	20	25	30
Sales cash flow		200	335	285	30
Production costs					
Materials		55	110	56	
Labour		60	70	80	
Other		80	90	100	
- depreciation		-50	-50	-50	
Less closing payables		-6	-7	-8	
Add opening payables		0	6	7	8
Production cash flow		139	219	185	8
Net cash flow	-190	61	116	140	22
Discount factor	1	0.926	0.857	0.794	0.735
Present value	-190.00	56.48	99.45	111.14	16.17
Net present value	£93,240				

(c)

Investment

Net present value

Oak	£290,000	£73,500
Elm	£105,000	£27,000
Ash	£190,000	£93,240

Only £300,000 is available for investment. Possible project combinations are thus:

	Investment required	NPV
Oak	£290,000	£73,500
Elm and Ash	£295,000	£120,240

Thus Elm and Ash is the preferable investment combination..However, Ash gives so much better return than Oak it may be worth reconsidering whether it is possible to expand the Ash project.

e) To consider issues such as: -

How well the new product/investment fits in with the existing investment of the company.

Whether there are ethical/reputational issues with the new product.

The impact of this diversification on the existing product portfolio

The impact of this diversification on staff, the need for training or changes to working practices.

5 (a) Describe the Cournot and Bertrand duopoly models. Compare and contrast the results of these models.

[30%]

In the Cournot duopoly model the firms decide on the quantity assuming that the price changes to clear the output. Each firm has to choose a quantity of output to produce given the other firm's choice of output in order to maximise profits. Market price decreases with output. The Nash equilibrium is the pair of outputs such that each firm's action is a best response to the other firm's action. The firm changes its behaviour if it can increase its profit by changing its output, on the assumption that the output of the other firm will not change but the price will adjust to clear the market.

Bertrand developed his duopoly model in 1883. His model differs from Cournot's in that he assumes that each firm expects that the rival will keep its price constant, irrespective of its own decision about pricing.

What is the difference between Cournot and Bertrand duopoly models?

In the Cournot model, firms control their production level, which influences the market price, while in the Bertrand model, firms choose the price of a unit of product to affect the market demand.

The purpose of a commitment is to alter the future behavior of the firm and of the firm's rivals in such a way as to improve the net present value of the profits of the firm making the commitment. If a firm announces a capacity expansion, but the firm's announcement is not credible, the behavior of rival firms will not be affected by the announcement. Hence the announcement has no strategic effect whatsoever if the firm's credibility is in doubt. If the firm actually builds the capacity, rival firms have no choice but to alter their behavior in response to the expansion of capacity. If the firms are Cournot competitors, firms will react by choosing a lower capacity if their rival has expanded their capacity. Had the firm simply made an announcement rather than actually building the capacity, rival firms could have chosen higher capacity forcing the announcing firm to "renege" on its announcement as its best response to its rivals ignoring its initial announcement.

Marking:

A basic answer included an explanation of the basic mechanics of Cournot equilibrium and Bertrand model (15%). However, a strong answer also includes a discussion of how the concept of Cournot equilibrium plays out in strategic situations and its implications for announcement strategy of firms and also a reference to its limitations. Capacity expansion and also draw on examples to illustrate their point. (15%)

(b) Discuss the usefulness of game theory for strategic management.

[70%]

Game theory is powerful as it enables managers to analyse systematically the ties among interactions between actors in a market and to develop appropriate competitive strategies.

An average answer would state similar as above and give a basic answer.

A good answer would discuss how game theory enables managers to systematically investigate competition and define the best course of action—for each player in response to the actions of others and how this leads to an equilibrium outcome, in which no players have a reason to change their strategy.

A very good answer would define the limitations of the theory, e.g. it takes assumptions of market movements of competitors and enablers. It gives insiders allows to focus on the competition and its movements.

basic 20%

good 40%

Very good 70%

6 (a) The groceries market is becoming dominated by brick and mortar and online stores that sell groceries as well as household goods and other products under one web page. What are the expected economies of scale that might be experienced by such firms by adopting such a multi-product business model? What are the potential diseconomies of scale?

[50%]

A basic answer would talk about how these firms would get both groceries and household goods in the physical market and digitally offered. There may be a basic argument like saving product storage space by having stock in the shop or similar. This could be as well identifying similarly basic economies of scale and diseconomies of scale.

A good answer would identify multiple aspects for economies of scale and diseconomies of scale and discuss these in depth with pro and cons.

25%

25%

(b) "Owning our own source of supply of raw materials used in production insulates us from short-run supply-demand imbalances and therefore will give us a competitive advantage over rival producers." Discuss this statement in the light of the concept of vertical integration and real-world examples from recent global supply chain related shortages.

[50%]

A basic answer would state that it is good to own the supply chain for control reasons and give some examples. Discussed in the lecture would have been apple designing chips for better innovation.

An excellent answer would take multiple examples in multiple industries and discuss multiple aspects of integration. Examples could be from Amazon, Tesla, Apple.

7 NO Meat is a new company that intends to sell meat replacement products to low-income communities across countries in Africa. The product gets distributed as frozen through bulk bags.

(a) Explain the different possible forms of market segmentation.

[20%]

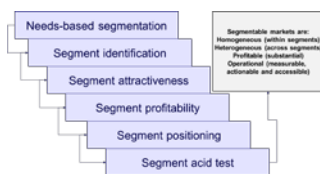
A basic answer would be stating some market segmentation with short description.

A good answer would first describe what is a market segmentation option for the African market and then detail multiple options to segment the market with arguments and details on the segmentation. The very good answer would conclude as well with a evaluation of the work and preferred options. Examples could include for wealthy people and lower income people as a cheaper alternative to meat or as a healthier alternative.

(b) Choose one of the segmentation forms identified in (a) above and explain how to perform the segmentation of the market for the frozen bulk bags meat replacement product.

[80%]

An average answer would take one of the options above and describe some reasoning and give one or two arguments and parts of both slides below. A very good answer would go into depth of multiple argument and use both slides below.



On challenges:

A basic answer gives some reasons why a market segmentation would be complex. A very good answer would take multiple reasons why a segmentation would be problematic and discuss these in detail. Examples could be lack of cultural detail knowledge, problems to compare markets across Africa as Africa is very diverse etc.

8. Considering low-cost airlines in the current climate. Discuss the following strategic issues:

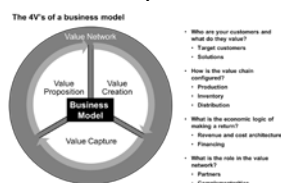
(a) business model innovation

[40%]

Business models are the bridge between technology and the market.

An average answer would be discussing relative unstructured information on how low cost airlines could create more income.

Good answers would take a structured approach and discuss detailed examples using the structure. Example for a structure could be below.



(b) Supply chain and partner firm configuration

[40%]

An average answer would consider some options on partnering with key companies.

A good answer would mention Process innovation and define partnering on supply chain on integration of process and product as well as management innovation.

(c) Post covid customer demand management

[20%]

An average answer would state that customer demand would be low during covid and then higher after its recovery. A good answer would structure an answer on the problems of planning and execution. Demand cannot be created by cheap prices and offering, fluctuations are the new normal and airplanes have been sold and are less available. This may as well include an analysis of impact of press communication on border guard strikes and airport processing problems.