QUESTIONS

SECTION A

QUES. 1)

EXHIBITS

EXHIBIT 1 - Para Fuels Co

Para Fuels Co produces paraffin from crude oil, which is refined for use as jet fuel. For many years, Para Fuels was a private company but it listed three years ago and now has a wide range of diverse shareholders, including institutional investors.

Para Fuels Co has a number of production facilities and one of these is coming to the end of its productive life. Para Fuels Co's board of directors (BoD) is considering two alternatives. The first one is replacing this production facility with a new production facility, which will be modern and largely environmentally-friendly. This facility will continue to produce paraffin from crude oil and is based on traditional technology.

The second alternative is based on converting household waste into paraffin, using new technology which has the potential to dramatically reduce environmental damage caused by air traffic. The BoD thinks it may be beneficial to convert the production facility based on this new alternative instead. There is a lot of uncertainty surrounding this investment. A competitor, Kero Innovations Co, has suggested that it may purchase the new alternative production facility, at the end of the first three years of the investment.

Details of the production based on both the traditional technology (Investment A) and the new alternative technology (Investment B) are given in the following exhibits. It is anticipated that both Investment A and Investment B will have a useful life of 25 years. Para Fuels Co's cost of capital has been estimated at 12%.

EXHIBIT 2 - Traditional technology : Investment A

The following information relates to investment A where Para Fuels Co continues to produce paraffin from crude oil, using traditional technology.

The initial investment in the production facility will be $14m. Tax allowable depreciation is available on the production facility at an annual rate of 25% reducing balance in years 1 to 3. At the end of year 4, any remaining written down value can be written off as a balancing adjustment. As with production facilities of this nature, there will be no residual value after the 25-year project life because of substantial decommissioning costs.

Sales revenue in year 1 is expected to be $12·75m and this is expected to increase by 5% per year in each of the years 2 to 4.

Production costs are expected to be $5·25m in year 1. The pre-inflation amounts for years 2 to 4 are given below, as are the annual inflationary rates for production costs in each of years 2 to 4:

Year	**2**	**3**	**4**
Pre-inflation amount	$6·20m	$7·10m	$8·00m
Annual inflationary rate	6%	7%	8%

It is anticipated that working capital of 10% of sales revenue will be needed in years 1 to 4, at the start of each year, and that no additional working capital will be needed in years 5 to 25. At the end of 25 years, it is expected that the working capital will be required for the decommissioning costs and will not be released.

Para Fuels Co pays tax at a rate of 20% on profits in the year in which the tax liability occurs. Tax on losses is refunded in the year in which the loss occurs.

An estimate has been made of the discounted value of post-tax cash flows for years 5 to 25. This totals $5·40m at the start of year 5.

EXHIBIT 3 - New technology : Investment B

Currently, the new technology used to convert household waste into paraffin is expensive to set up and run, although set-up and running costs are expected to reduce once this technology becomes established. The initial set-up costs for the Investment B production facility using the new technology are estimated to be $34·6m.

Due to high costs and lower revenues initially, the after-tax free cash flows generated by this investment are expected to be $1·4m in year 1. These are expected to increase by 40% in each of years 2 and 3. In year 4, when costs reduce and revenues increase, the after-tax free cash flows are expected to be twice as much as the year 3 amount.

Due to a high level of uncertainty with Investment B, it is expected that the annual after-tax free cash flows from years 5 to 25 will remain the same as year 4. It is possible that this is an underestimate and, in the future, more realistic amounts can be determined. The annuity factor for the 12% cost of capital and based on a useful life of 25 years is 7·843.

Kero Innovations Co has suggested it may offer to purchase Investment B, at the start of year 4 for $27m. Due to the uncertainties surrounding this investment, the cash flows are expected to vary by a standard deviation of as much as 40%. The risk-free rate of return is estimated to be 5%.

EXHIBIT 4 - Comments made at the BoD meeting

Para Fuels Co's BoD met to discuss adopting the new technology, for its production facility replacement, based on converting household waste into paraffin. The following comments were made at the meeting:

- The company's chief executive officer (CEO) gave an enthusiastic talk about the need for Para Fuels Co to fulfil its environmental, social and governance (ESG) responsibilities. The chief marketing officer (CMO) pointed out that it is likely that airlines around the world will face increasing pressure on their ESG agendas and, in particular, how they are helping to protect the environment. However, the CMO also said that airlines will need to ensure that this type of jet fuel is safe to use.
- The chief financial officer (CFO) was more cautious. She pointed to the fact that there is no binding contract with Kero Innovations Co. She also said that while Para Fuel Co's shareholders would be supportive of the company pursuing an environmental agenda, the majority of shareholders will be concerned if that led to a significant negative impact on the corporate value. The CFO reminded the BoD that although only one production facility needs to be replaced very soon, more will need to be replaced after two years.
- Nevertheless, the CFO suggested that if this new technology becomes established and produces jet fuel which is safe to use, Para Fuels Co will get the benefit of being one of the first companies to adopt the new technology for the production facility. This could be advantageous in terms of cost reduction and revenue maximisation.

REQUIREMENTS -

(a) Explain why Para Fuels Co might include the value of the potential offer from Kero Innovations Co, when considering Investment B.

(4 marks)

(b) Prepare a report for the Board of Directors (BoD) of Para Fuels Co which:

(i) Calculates the estimated net present value of Investment A (traditional technology);

(9 marks)

(ii) Calculates:

- **The estimated net present value of Investment B (new technology) before taking account of the potential offer from Kero Innovations Co; and**
- **the estimated net present value of Investment B (new technology) after taking account of the potential offer from Kero Innovations Co;**

(9 marks)

(iii) Based on financial grounds, recommends whether Investment A or Investment B should be undertaken and discusses the assumptions made in the calculations. This should be done prior to discussing the comments made at the BoD meeting.

(7 marks)

(iv) Discusses the comments made at the BoD meeting and suggests how Para Fuels Co may wish to proceed if the new technology is adopted.

(11 marks)

Professional marks will be awarded for the demonstration of skill in communication, analysis and evaluation, scepticism and commercial acumen in your answer.

(10 marks)

Total 50 marks

SECTION B

QUES. 2)

EXHIBITS

EXHIBIT 1 - Lough Co

Lough Co is a holding company based in the United States. Lough Co's treasury department centrally manages financial risk on behalf of the company's subsidiaries, many of which are based abroad. Multilateral netting is used to settle intra-group balances. Spot mid-rates are used for the purposes of multilateral netting and the United States dollar (USD) is the base currency.

The following cash flows are due between Lough Co and three of its subsidiary companies. The subsidiaries are Fitz Co, based in the United Kingdom (currency GBP), Gahana Co, based in India (currency INR) and Adalar Co, based in Turkey (currency TRY).

Owed by	**Owed to**	**Amount (m)**
Lough Co	Gahana Co	INR3,447·70
Lough Co	Adalar Co	TRY126·20
Fitz Co	Lough Co	USD75·75
Fitz Co	Gahana Co	INR333·13
Fitz Co	Adalar Co	TRY256·29
Gahana Co	Fitz Co	GBP34·08
Gahana Co	Adalar Co	TRY135·52
Adalar Co	Lough Co	USD12·80

The following spot mid-rate quotations have been obtained.

	GBP/USD1	**INR/USD1**	**TRY/USD1**
Spot	0·7070	72·4000	7·2235

Settlements are made in the order that the company owing the largest net amount in USD settles with the company owed the smallest net amount in USD.

EXHIBIT 2 - Payment to supplier in Swedish krona

Lough Co makes regular payments to a supplier based in Sweden. Sweden's currency is the Swedish Krona (SEK). The next payment is for SEK125m and is due in five months' time. The treasury manager is concerned about the exposure to transaction risk and is considering hedging the payment using either the forward or money markets based on the following data:

Exchange rates; quoted as SEK per USD1

Spot	8.4458–8.4924
Five months forward	8.5308–8.5778

Annual interest rates available to Lough Co

	Investing	Borrowing
United States	1·5%	2·2%
Sweden	2·1%	3·1%

EXHIBIT 3 - Treasury function

Lough Co operates in a highly competitive industry which is undergoing a process of structural adjustment. A wave of merger and acquisition activity has led to consolidation within the industry as companies seek to maximise economies of scale. This has resulted in a decline in Lough Co's profitability over the last few years. Faced with these developments, the new chief executive officer intends to implement a cost reduction strategy to improve the company's competitive position.

As part of a company-wide restructuring, Lough Co's directors are due to discuss the future of the treasury function at the next board meeting. The finance director is in favour of restructuring the treasury function due to ongoing problems and has highlighted these in a recent briefing note to the board. For example, there have been delays in approving the finance required for new projects, which meant Gahana Co missed out on an excellent investment opportunity. The main reason for these delays is the complexity of the information required for the approvals process at head office.

Another example of the type of problem experienced by subsidiaries occurred when the plan to float Adalar Co on the local stock exchange had to be abandoned due to a lack of interest from investors even though significant expenditure had already been incurred. There are also concerns about the high turnover of staff in senior management roles across many of Lough Co's subsidiaries due to the lack of delegation of authority. The finance director believes a decentralised treasury function would help to avoid these problems.

REQUIREMENTS -

(a) Calculate the impact on intra-group cash flows if Lough Co and its three subsidiaries use multilateral netting to settle outstanding balances. Briefly explain the main advantage of a multilateral netting system.

(9 marks)

(b) Evaluate which of the methods suggested by Lough Co's treasury manager would minimise the payment to the Swedish supplier in five months' time.

(4 marks)

(c) Explain how a centralised treasury department assists with Lough Co's cost reduction strategy and discuss the advantages of the finance director's proposal to decentralise the treasury function.

(7 marks)

Professional marks will be awarded for the demonstration of skill in analysis and evaluation, scepticism and commercial acumen in your answer.

(5 marks)

Total 25 marks

QUES. 3)

EXHIBITS

EXHIBIT 1 - Felinhen Co

Felinhen Co is a company which carries out agricultural and woodland management. Felinhen Co also has a wholly owned retail subsidiary, Counwood Co, with the boards of the two companies having the same directors. Counwood Co runs two businesses:

The first business is countryside stores which sell outdoor clothing and accessories.

The second is the woodcraft business. This sells furniture and other products made of wood. The wood is sourced from woodlands managed by Felinhen Co. The wood is made into furniture and other products in craft centres and sold in woodcraft shops, both owned by Counwood Co.

The craft centres are staffed by skilled craftsmen assisted by apprentices. There are some online sales of the products sold in the countryside stores, but woodcraft products are not currently sold online.

The Felinhen Co group will have to make significant investment expenditure over the next few years. Profits from the woodcraft business have declined in recent years, and in the year just ended, the woodcraft business made its first operating loss. Felinhen Co's board believes that, without additional investment, there is a significant risk that the woodcraft business will continue to make losses over the next few years. As the board also wants the Felinhen Co group to have greater focus on its core activity of agricultural and woodland management, it initially decided to close all the woodcraft shops and craft centres.

However, the proposals have faced significant opposition due to the loss of jobs and adverse media coverage. A group of shop employees, backed by a couple of wealthy 'business angels' and a crowdfunding campaign, have offered to buy out the woodcraft business. The consideration offered, based on recent years' results and the funding available, is $3m.

Felinhen Co's board has asked the group's finance director to consider three valuations which relate to the three projected scenarios and are based on:

- Net proceeds from closing all the craft centres and woodcraft shops and selling their assets individually;
- Expected free cash flows if the craft centres were kept open, the woodcraft shops closed, and the products made in the craft centres were sold in the countryside stores and online; and
- Expected free cash flows if the craft centres and woodcraft shops stayed open and necessary investment was made in them. This scenario will provide a comparison to the offer made by the buy-out group. Investing in the craft centres and woodcraft shops is not an option which Felinhen Co's board is currently considering.

EXHIBIT 2 - Valuation of woodcraft business

Financial data

- **Close all the craft centres and woodcraft shops and sell their assets individually**

Counwood Co's most recent summary statement of financial position

	$000
Assets	
Non-current assets	5,820
Current assets	1,750
Total assets	7,570
Equity and liabilities	
Share capital	20
Retained funds	6,580
Current liabilities	970
Total equity and liabilities	7,570

The net assets of the woodcraft business can be assumed to be 60% of Counwood Co's total net assets. The realisable value of the woodcraft shops and craft centres can be assumed to be 75% of the woodcraft business's net assets, taking into account the costs of closure.

- **Close the woodcraft shops, keep the craft centres open and sell the products made in the craft centres in the countryside stores and online**

Assume that there would be an immediate net cash inflow of $800,000, taking account of asset sales, shop closure costs and necessary investment.

Forecast figures are as follows:

Year	1	2	3	4	5
	$000	$000	$000	$000	$000
After-tax profits	470	494	516	536	558
Additional investment	100	120	135	145	150

Assume that additional investment for each year is equal to depreciation in that year. From year 6 onwards, after-tax profits and additional investment would be expected to be the same amount as in year 5 for the foreseeable future.

Assume a cost of capital of 12%.

- **Keep all the craft centres and woodcraft shops open and make the necessary investment in them**

Assume that there would need to be an immediate investment of $600,000.

Forecast figures are as follows:

Year	1	2	3
	$000	$000	$000
After-tax profits	380	420	440
Depreciation	170	190	200
Additional investment	300	250	210

From year 4 onwards, the annual growth rate of free cash flows would be expected to be 3% for the foreseeable future.

Assume a cost of capital of 12%.

REQUIREMENTS -

(a) Calculate the valuation of the woodcraft business in the three projected scenarios.

(9 marks)

(b)

- **Based on part (a), discuss the possible courses of action Felinhen Co's board could take regarding the woodcraft business;**
- **Discuss other possible courses of action that Felinhen Co's board may consider; and**
- **Recommend what the course of action should be.**

(11 marks)

Professional marks will be awarded for the demonstration of skill in analysis and evaluation, scepticism and commercial acumen in your answer.

(5 marks)

Total 25 marks