Financial Pillar

F3 – Financial Strategy

26 May 2011 – Thursday Morning Session

Instructions to candidates

You are allowed three hours to answer this question paper.
You are allowed 20 minutes reading time **before the examination begins** during which you should read the question paper and, if you wish, highlight and/or make notes on the question paper. However, you will **not** be allowed, **under any circumstances**, to open the answer book and start writing or use your calculator during this reading time.
You are strongly advised to carefully read ALL the question requirements before attempting the question concerned (that is all parts and/or sub-questions).
ALL answers must be written in the answer book. Answers written on the question paper will **not** be submitted for marking.
You should show all workings as marks are available for the method you use.
The pre-seen case study material is included in this question paper on pages 2 to 9. The unseen case study material, specific to this examination, is provided on pages 10 and 11.
Answer the compulsory question in Section A on page 13. This page is detachable for ease of reference.
Answer TWO of the three questions in Section B on pages 15 to 19.
Maths tables and formulae are provided on pages 21 to 25.
The list of verbs as published in the syllabus is given for reference on page 27.
Write your candidate number, the paper number and examination subject title in the spaces provided on the front of the answer book. Also write your contact ID and name in the space provided in the right hand margin and seal to close.
Tick the appropriate boxes on the front of the answer book to indicate which questions you have answered.

F3 – Financial Strategy

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F plc

Pre-seen case study

Introduction
F plc is a food manufacturer based in the United Kingdom. It generates its revenue from three divisions named the Meals, Snacks and Desserts divisions. Each division specialises in the production of different types of food and operates from its own factory located on three different sites in England. F plc's head office is located in a remote part of England and is about equidistant from each of the company's three divisions.

Currently, F plc has a total employment establishment of about 10,000 full-time equivalent employees, about 97% of whom are employed in its three divisions. It is constantly running with about 700 full-time vacancies, mostly in the Desserts Division. This vacancy factor in the Desserts Division impedes its productivity.

The company was founded over 150 years ago by an entrepreneurial farmer who saw the opportunity to expand his farming business by vertically integrating into food production. Instead of selling his crops on the open market, he established a mill and produced flour. From this, it was a natural progression to diversify into producing other crops which were then processed into different ingredients for food products.

The company grew steadily and it became clear at the beginning of the 20th Century that increased production facilities were needed. It was at this point that the company built its first factory which at the time was a state of the art manufacturing facility. As demand continued to grow during the 20th Century, the company required additional manufacturing facilities and made a public offering of shares in 1960 to finance this expansion. The public offer was successful and F Limited was established. The original family's holding in the company fell to 25% at this point. Although a second factory was opened with the capital that had been raised, F Limited continued to manage the company on a centralised basis.

The next phase of development came in the late 1980's when F Limited became F plc. After this, F plc had a successful rights issue which raised sufficient capital to enable a third factory to be built. It was at this point that the divisionalised and de-centralised structure was established. Prior to this, the company managed its factories directly from its head office. The family shareholding fell to 20% at this point, with one family member holding 10% of the shares and family trusts holding the other 10%.

The environment in which F plc trades is dynamic, particularly with regard to the growth of legislation relating to food hygiene and production methods. F plc now exports many of its products as well as obtaining ingredients from foreign producers, which means that F plc must observe legislative requirements and food standard protocols in different countries.

Mission statement
F plc's mission statement, which was set in the year 2000, is as follows:

"F plc is committed to continually seek ways to increase its return to investors by expanding its share of both its domestic and overseas markets. It will achieve this by sourcing high quality ingredients, using efficient processes and maintaining the highest standards of hygiene in its production methods and paying fair prices for the goods and services it uses."

Strategic aims
The strategic aims are set in order to enable F plc to meet the obligations contained in its mission statement. F plc aims to:

(i) increase profitability of each of its divisions through increased market share in both domestic and overseas markets
(ii) source high quality ingredients to enhance product attractiveness
(iii) ensure that its factories adhere to the highest standards of food hygiene which guarantee the quality of its products
(iv) strive to be at the forefront in food manufacturing techniques by being innovative and increasing efficiency of production with least waste.

Corporate Social Responsibility
F plc takes Corporate Social Responsibility (CSR) seriously. The post of Environmental Effects Manager was created two years ago and a qualified environmental scientist was appointed to it. The Environmental Effects Manager reports directly to the Director of Operations. The role of the Environmental Effects Manager is to develop initiatives to reduce environmental impacts, capture data on the environmental effects of divisional and head office operations and report to the Board of Directors on the progress towards the achievement of F plc's CSR targets. An extract from F plc's internal CSR report for 2010 is shown in Appendix 1. F plc does not publish its CSR report externally.

Last year, F plc received criticism in the national press in England and in other countries for exploiting some of its suppliers in Africa by paying low prices for ingredients. This resulted in an extensive public relations campaign by F plc to counter these accusations. It established a programme to channel funds to support farmers in Africa via payments made through African government agencies. The programme, which is managed through F plc's head office, received initial financing from F plc itself and is now widening its remit to draw funding from other sources including public funding from the European Union.

The Board of Directors
The Board of Directors comprises five executive and five non-executive members all of whom are British. No member of the Board is from an ethnic minority.

The Chairman is a senior non-executive director and a retired Chief Executive of a major quoted retail clothing company based in England. He received a knighthood two years ago for services to industry.

The Chief Executive is 52 years old and was Director of Operations at F plc before taking up his current post three years ago.

The Finance Director is 49 years old and a qualified CIMA accountant. He has experience in a variety of manufacturing and retail organisations.

The Director of Operations is 65 years old and is a member of the original family which founded the business. He has been employed by F plc for all of his working life. He took up his current post three years ago following the promotion of the previous post holder to the role of Chief Executive.

The Marketing Director is 43 years old and has held various positions in sales and marketing for different organisations before being appointed to the Board. He came to the attention of the Chief Executive when he was instrumental in a successful initiative to market a new shopping complex in the city in which F plc's head office is based. At the time, the Marketing Director was the Chief Marketing Officer for the local government authority in the area.

The Director of Human Resources, the only female member of the Board, is 38 years old and holds a recognised HR professional qualification. Last year she was presented with a national award which recognised her achievements in the development of human resource management practices.

In addition there are four other non-executive directors on the Board. Two of them previously worked in senior positions alongside the Chairman when he was Chief Executive of the retail clothing company. One of them was the clothing company's finance director, but is now retired and the other was its marketing director but is now the sales and marketing director for a pharmaceutical company. One of the other non-executive directors is a practising lawyer and the other is a sports personality of national renown and a personal friend of the Chairman.

The Divisional General Managers, responsible for each of the three divisions, are not members of F plc's board. The Divisions are organised along traditional functional lines. Each division is managed by a Divisional Board which is headed by a Divisional General Manager. Each Divisional Board comprises the posts of Divisional Operations Manager, Divisional Accountant, Divisional Marketing Manager and Divisional Human Resources Manager. Each division undertakes its own marketing and human resource management. The divisional accountants are responsible for the management accounting functions within their divisions. Each member of the divisional boards is directly accountable to the Divisional General Manager but have professional accountability to the relevant functional F plc executive board members.

Financial position and borrowing facilities
Extracts from F plc's financial statements for the year ended 31 December 2010 are shown in Appendix 2.

F plc's long term borrowings are made up of a £160 million bank loan for capital expenditure and a £74 million revolving credit facility (RCF).

The bank loan is secured on F plc's assets and is repayable on 1 January 2018.

The RCF allows F plc to borrow, make repayments and then re-borrow over the term of the agreement. This provides F plc with flexibility because it can continue to obtain loans as long as it remains at or below £80 million, being the total amount agreed for this facility. The RCF expires on 31 December 2013.

Planning process
The planning process employed by F plc is one which can be described as adhering to classical rational principles. This has been the method of planning used for many years and culminates in the production of a five year forecast. The annual budget cycle feeds in to the strategic plan which is then updated on an annual basis. All F plc's revenue is derived through the operations of the three divisions. The only income generated by F plc's head office is from investments. The five year forecast for sales revenue and net operating profit for each division and F plc in total, after deduction of head office operating costs, is shown in Appendix 3. This shows that F plc is seeking to increase its sales revenue and net operating profit over the five year plan period.

Competition within the industry
F plc is one of the largest food production companies in England. It had an overall share of about 6% of its home market in 2010. Its nearest competitors held 5% and 7% market share respectively in 2010. The products in the industry have varying product life cycles. Competition is intense and there is a high failure rate for new products. Usually, new products require significant marketing support particularly if a new brand is being established.

Organisational culture within each division
Different cultures have emerged within each division.

Meals Division:
In the Meals Division, each function operates with little direct interference from the Divisional Board members. The approach is to allow each function to operate with as little control as possible being exercised by the Divisional Board.

Snacks Division:
In the Snacks Division, the emphasis of the Divisional Board is on product research and development and marketing. The Snacks Divisional Board expects its divisional marketing staff to undertake market research into customer tastes and preferences and then for products which satisfy these to be developed by its divisional research staff.

Desserts Division:
In the Desserts Division, the finance function is the dominant force. The finance functions in the other two divisions exert less influence over operations than is the case in the Desserts Division. It is not unusual for the Divisional Accountant in the Desserts Division to have confrontational meetings with managers of other functions. Such confrontation is particularly evident in the monthly meetings between the Divisional Accountant and the Divisional Marketing staff. It is clear that within the Desserts Division, the Divisional General Manager, a food technologist by profession, and the Divisional Accountant, formerly an auditor with a local government authority, maintain strict control over the operation of the division.

Further details relating to the three divisions are as follows:

Meals Division
The Meals division is located in the South of England. It specialises in manufacturing frozen meals, which are designed to be easy for consumers to quickly heat up and serve. The meals are sold to supermarkets and other retail outlets. Some are manufactured under F plc's own brand and others are manufactured under supermarkets' own labels. The division is also increasing its sales to welfare organisations which support elderly and infirm people. These organisations purchase simple frozen meals in bulk which they then heat up to provide a hot meal each day to those people in their care. In 2010, the Meals Division earned 14% of its revenue from outside the United Kingdom.

One of the Meals Division's most profitable products is a steak pie that is flavoured with special gravy that was developed by one of F plc's founding family members in the early part of the 20th Century. F plc's competitors cannot copy this gravy because the ingredients have to be combined in a very precise manner and then cooked in a particular way. The recipe for this gravy is known only to F plc's Director of Operations and the manager of the pie factory.

Two of the Meals Division's products are currently subject to investigation by the Food Standards Authority of a European country. Please see Appendix 1 under the heading "Food labelling" for more information on this.

Snacks Division
The Snacks Division, located in the East of England, mainly manufactures confectionery such as packet savouries and chocolate bars. Its main customers are supermarkets and retail shops. It has a growing market in continental Europe and in 2010 the division earned 19% of its revenue from non-United Kingdom sales. Many of its products are F plc's own brands, although, similarly with the Meals Division, it supplies products to supermarkets under their own label.

The Snacks Division successfully launched a new premium brand of chocolate bars in the UK in 2010.

Desserts Division
The Desserts Division is located in the North of England where road, rail and air links are not well developed. This has resulted in high transportation costs for goods into and out of the factory. Originally, this location was chosen because the lease terms for the factory were very competitive but in recent times the local taxes placed on the factory have become expensive. There is some limited room for expansion on the site the factory occupies but the local government authority has repeatedly rejected the expansion plans when the Division has sought the necessary planning permission to put its plans into action. This has caused the Divisional Board to consider whether it should move its entire operation to another part of England where its expansion plans may be more easily accomplished.

The Division has experienced technical and managerial staff shortages. The workforce of the Division has an establishment of 4,700 full-time equivalent employees. Despite there being a ready supply of manual labour for production work, the Desserts division runs with an average of 385 full-time vacancies at any one time.

The Division's products range from cold desserts, particularly ice cream, which can be eaten directly from the packaging, to those which require some preparation by the final purchaser before the product can be consumed. The Divisional Marketing Department has been investigating the possibility of negotiating 'Freezer deals' by which the Desserts Division would supply ice cream freezers to independent retailers which sell the Division's ice cream products. An independent retailer is a shop or outlet that is not part of a larger chain. This is in order to investigate the possibility of increasing the Division's share of the ice cream market sold by independent retailers.

The Division's sales increase in the periods which lead up to national and international festive periods such as Christmas and Chinese New Year. The Division is constantly researching new markets in an effort to increase its foreign earnings. Revenue from outside the United Kingdom in 2010 represented 23% of the Division's total revenue.

Inventory control and IT systems
There have been a number of problems across all three divisions in respect of inventory control. Poor inventory control has led to high levels of wastage and obsolete inventory being carried. This has been particularly problematic in respect of perishable ingredients. In the case of the Desserts Division, the Divisional Accountant has estimated that 5% of the Division's potential revenue has been lost as a result of not being able to satisfy customer orders on time, due to poor inventory control.

F plc operates a standard information management system across all the Divisions and at Head Office. The Information Technology in use has been unreliable due to technical malfunctions since the information management system was installed in 2001. Monthly management accounts, provided by each division to head office are often late, sometimes not being made available for up to three weeks into the subsequent month.

Internal audit
Until now, F plc's Internal Audit function, which is based at Head Office, has tended to concentrate its efforts on reviewing activities in the Meals and Snacks divisions as they each produce lower revenues and net operating profits in absolute terms compared with the Desserts division. The Internal Audit function's approach of applying a "light touch" to the Desserts Division is also in recognition of the influence exerted by the Divisional Finance function over the Division's operational activities.

Strategic development
The Board of Directors is now midway through its strategic planning cycle and is considering how the company should move forward. There is a proposal to build and operate a factory in West Africa to reduce air kilometres being flown in supplying the Meals Division with fresh vegetables. It is intended that the African factory will freeze the vegetables and then transport them to the Meals Division's factory in England by refrigerated ship.

Extracts from F plc's internal Corporate Social Responsibility report for the year ended 31 December 2010.

This report was produced by the Environmental Effects Manager and presented to the Board of F plc in February 2011.

Fair trading
In accordance with its mission statement, F plc is committed to paying a fair price for the ingredients it uses in its products, particularly to farmers in the less developed economies of the world.

Waste reduction and recycling
F plc set a target for the financial year 2010 that waste of ingredients should be cut by 2%, measured by weight, from the 2009 levels. The actual ingredient waste was 2.5% lower in 2010 than in 2009 as measured by weight.

A target was also set for F plc to recycle 90% of its used packaging in the year 2010. It was recorded that 85% of packaging in 2010 was actually recycled.

Food labelling
Legal requirements demand accuracy in food labelling, in respect of ingredients, product description and cooking instructions in many countries. F plc employs a Compliance Manager to ensure that relevant labelling laws in each country, with which the company trades, are adhered to. A target is set for F plc to justify 100% of its claims in food labelling. Two products manufactured in the Meals Division are currently undergoing investigations by the Food Standards Authority of a European country following allegations that the labelling is inaccurate.

(Update: Eight elderly people were admitted to hospital in February 2011 with suspected food poisoning after eating one of the packaged meal products which is under investigation by the Food Standards Authority.)

Transportation
Following adverse press coverage relating to the high number of kilometres travelled when importing and exporting goods from and to overseas countries, F plc introduced a target that its use of air travel should be reduced by 10% in 2010 compared with the amount used in 2009. F plc fell short of its target by only reducing air kilometres travelled by 3% in 2010 compared with 2009. Road kilometres travelled increased by 5% in 2010 compared with 2009.

Efficiency of energy usage in production
In an effort to reduce carbon emissions from the three divisions and head office, a target was set that by 2015, F plc will become carbon neutral in terms of its usage of energy. Energy usage in 2010 was at the same level as 2009. It has been proposed that energy efficient lighting should replace the current energy inefficient lighting at all three factories and at head office in 2011 and smart meters should be installed in all of F plc's premises to keep the waste of electricity to a minimum.

Extracts from F plc's income statement and statement of financial position

Income statement for the year ended 31 December 2010

	£ million (GBP million)
Revenue	986
Operating costs	(938)
Net operating profit	48
Interest income	1
Finance costs	(16)
Corporate income tax	(10)
PROFIT FOR THE YEAR	23

Statement of financial position as at 31 December 2010

	Notes	*£ million (GBP million)*
ASSETS		
Non-current assets		465
Current assets		
Inventories		90
Trade and other receivables		112
Cash and cash equivalents		20
Total current assets		222
Total assets		687
EQUITY AND LIABILITIES		
Equity		
Share capital	1	140
Share premium		40
Retained earnings		61
Total equity		241
Non-current liabilities		
Long term borrowings	2	234
Current liabilities		
Trade and other payables		212
Total liabilities		446
Total equity and liabilities		687

Notes:

1. There are 560 million ordinary shares of £0.25 each in issue.
2. The long term borrowings comprise £160 million loan for capital expenditure which is repayable on 1 January 2018 and a £74 million revolving credit facility which expires on 31 December 2013.

Five year forecast of sales revenue and net operating profit for each division and F plc in total and operating costs for head office

All figures are shown in £ million (GBP million)

	2010 (Actual)	*2011*	*2012*	*2013*	*2014*	*2015*
Meals Division						
Sales revenue	266	287	310	335	362	391
Net operating profit	31	34	40	47	54	63
Snacks Division						
Sales revenue	176	194	213	234	258	283
Net operating profit	44	48	53	58	64	71
Desserts Division						
Sales revenue	544	571	600	630	661	694
Net operating profit	72	80	90	101	112	125
Head office						
Operating costs	(99)	(107)	(112)	(118)	(124)	(130)
F plc total						
Sales revenue	986	1,052	1,123	1,199	1,281	1,368
Net operating profit	48	55	71	88	106	129

End of Pre-seen Material

The unseen material begins on page 10

TURN OVER

SECTION A – 50 MARKS

[You are advised to spend no longer than 90 minutes on this question]

ANSWER THIS QUESTION

Question One

Unseen case material

Background

Today's date is 26 May 2011.

In 2010, the Snacks Division successfully launched a new premium brand of chocolate bars, MATT SNACKS, in the UK. The Divisional Board of the Snacks Division is now considering plans put forward by the Divisional Marketing Manager to launch the full range of MATT SNACKS in France, priced in euro (EUR). The launch is planned for 1 January 2012.

It is well known within the industry that it can be very difficult for a foreign company to break into the French market for chocolate snacks because there is significant loyalty towards local French brands and imported Swiss and Belgian brands. Initial market research based on free tasting sessions has met with an encouraging response but there is still some uncertainty over the success of the launch. However, the greatest danger to the success of MATT SNACKS in France is considered to be the risk that a UK competitor might launch a similar range of products in the same market.

Financial data for the project

To date, British Pounds (GBP) 0.5 million has been spent on initial market research for the products in the French market.

If the project is approved, an additional GBP 2.0 million will be required for detailed market research and packaging design. The cost of the launch itself includes an expensive radio and television advertising campaign in France and is expected to be of the order of GBP 1.0 million. Both of these costs are tax deductible. In addition, EUR 8.4 million will be spent on a distribution centre in France. All of these one-off costs are payable on 1 January 2012.

Estimates of net operating cash flows for the project vary considerably according to assumptions made regarding consumer and competitor reaction to the launch of MATT SNACKS in France. Forecast cash flow figures for the sales revenue and associated costs for the project for the year ending 31 December 2012 have been estimated based on two possible outcomes, known as Scenario A and Scenario B. The forecasts are:

		Forecast operating cash flow figures for the year ending 31 December 2012
Scenario A:	Sales revenue	EUR 10.0 million
	Costs	EUR 1.0 million plus GBP 2.0 million
Scenario B:	Sales revenue	EUR 5.5 million
	Costs	EUR 1.0 million plus GBP 1.5 million

All operating cash flows shown above are expected to grow by 5% per annum in subsequent years for the duration of the project.

It can be assumed that if Scenario A occurs in 2012, it will also occur in all subsequent years. The same is true for Scenario B. It is estimated that there is a 70% probability of occurrence of Scenario A and a 30% probability of Scenario B.

Other relevant financial information:

- The Snacks Division evaluates projects of this nature at a risk-adjusted after-tax discount rate of 15% over a 4 year period.

- The proposed new distribution centre to be built in France is expected to have a residual value of EUR 5.2 million after 4 years.

- Corporate income tax is charged at 35% on taxable profits and is paid at the end of the year in which the taxable profit arises. Tax depreciation allowances are available on all capital expenditure associated with the project at a rate of 100%. Balancing charges will arise on any residual value. There are sufficient profits elsewhere in the group to be able to take advantage of these tax benefits or any taxable losses that occur.

- Operating cash flows should be assumed to arise at the end of the year to which they relate.

- The exchange rate is expected to be GBP/EUR 1.2000 (GBP 1 = EUR 1.2000) on 1 January 2012 and British Pounds are expected to strengthen against the euro by 2% a year in each of the next 4 years.

- The project could be abandoned on 1 January 2013 and the distribution centre sold for an estimated EUR 7.0 million. If the project were abandoned on 1 January 2013, no further cash inflows or outflows would arise from then onwards and there would be no penalties for pulling out of the market.

The requirement for Question One is on page 13 which is detachable for ease of reference

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Required:

Assume that you are the Management Accountant of the Snacks Division and have been asked to write a Report addressed to the Divisional Board of the Snacks Division of F plc that will assist it in deciding whether or not to proceed with the proposed product launch. In your report you are required to:

(a) Ignoring the abandonment option:

(i) **Calculate** the NPV for the project as at 1 January 2012 for Scenarios A and B individually as well as the overall total expected NPV.

(13 marks)

(ii) **Calculate** the payback period for the project for each of Scenarios A and B.

(4 marks)

(iii) **Interpret** your results from (a)(i) and (a)(ii).

(6 marks)

(b) **Evaluate** whether or not the project should be abandoned on 1 January 2013 if Scenario B occurs.

(8 marks)

(c) **Advise** how real options and other strategic financial issues might influence the initial investment decision.

(12 marks)

(d) **Recommend**, with reasons, whether or not to proceed with the proposed product launch on 1 January 2012.

(4 marks)

Additional marks available for structure and presentation: ***(3 marks)***

(Total for Question One = 50 marks)

(Total for Section A = 50 marks)

End of Section A

Section B starts on page 15

TURN OVER

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SECTION B

[You are advised to spend no longer than 45 minutes on each question in this section]

ANSWER *TWO* OF THE THREE QUESTIONS – 25 MARKS EACH

Question Two

HJK is a long established, family owned and run, IT consultancy company. The company has experienced rapid growth in recent years.

Recent financial history for HJK:

Year ending 31 December	Profit for the year after interest and tax	Investment in projects or capital expenditure	Dividend paid
	EUR million	EUR million	EUR million
2006	6	-	3
2007	7	10	2
2008	10	-	5
2009	11	15	2
2010	16	-	8

In recent years, investment has been funded by cash held generated by the business but HJK now requires additional funds to finance significant expansion. The Directors have considered additional bank finance but their preference is for an initial public offering (IPO), that is, an offer for sale of shares to the public. However, the Directors are concerned about the implications of an IPO on the financial strategy of the company in the areas of dividend, financing and investment.

Required:

(a) **Evaluate** the current dividend policy of HJK.

(6 marks)

(b) (i) **Describe** the process involved in an IPO.

(3 marks)

(ii) **Advise** on the potential risks with an IPO and what action can be taken to minimise such risks.

(4 marks)

(c) **Discuss** the concerns of the Directors regarding the possible implications of becoming a listed company on dividend, financing and investment strategies and the interrelationship between them.

(12 marks)

(Total for Question Two = 25 marks)

A REPORT FORMAT IS NOT REQUIRED FOR THIS QUESTION

Section B continues on the next page

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Question Three

AB is a spin-off company from a major South American university. AB works with large manufacturing companies to find effective ways to reduce carbon emissions. Revenue was $300 million in the year ended 30 June 2010 and the company is expected to earn its first profit in the year ending 30 June 2011. Demand for its services is very high in a market which is developing very rapidly. A proposal to invest in specialist equipment has been appraised and shows a positive NPV using the company's weighted average cost of capital.

The specialist equipment will cost $50 million and is estimated to have a useful economic life of five years with no residual value. The equipment will need to be installed on 1 July 2011.

Three alternative methods of financing the equipment are being considered, each of which would commence on 1 July 2011. These are as follows:

Alternative 1

- Buy the equipment outright on 1 July 2011, funded by a five year bank borrowing that has an after-tax cost of debt of 7% per annum.

Alternative 2

- Enter into a finance lease. AB would make a payment of $14.0 million in advance and then five further annual payments of $9.0 million on 1 July each year, starting in 2012. The interest rate implicit in the finance lease has been calculated to be approximately 8.4% and the implied interest has been calculated as follows:

Year to	30 June 2012	30 June 2013	30 June 2014	30 June 2015	30 June 2016
Implied interest at 8.4% ($ million)	3.0	2.5	2.0	1.4	0.7

- Tax relief is available on both the accounting depreciation and the interest element of the finance lease payments.

Alternative 3

- Enter into a lease that is classified as an operating lease for tax purposes. AB would make payments of $16.5 million annually in arrears for three years, with the first payment on 1 July 2012. It is possible that on termination of the lease a new operating lease would be available for two further years for more advanced equipment at an estimated cost of $15.0 million per annum payable in arrears.

Other information

- AB's accounting policy is to depreciate specialist equipment on a straight line basis over its economic useful life.
- Corporate income tax is charged at 25% on taxable profits and is paid at the end of the year in which the taxable profit arises.
- A tax depreciation allowance is available on a straight line basis over the economic useful life of an asset.
- Due to the nature of the specialist equipment maintenance costs are expected to be fairly high at $2 million a year, payable at the end of each year. These will be the responsibility of AB under the terms of the finance lease and with an outright purchase. However, maintenance costs will be the responsibility of the lessor under the terms of the operating lease.

Required:

(a) **Calculate** the present value, as at 1 July 2011, of the cash-flows associated with each of the three alternative financing methods under consideration.

(13 marks)

(b) **Recommend,** with reasons, which of the three alternative financing methods should be chosen.

(8 marks)

(c) **Discuss** how an immediate change in government policy to improve tax depreciation allowances on equipment used in low carbon emission technology would impact on the decision. No further calculations are required.

(4 marks)

(Total for Question Three = 25 marks)

A REPORT FORMAT IS NOT REQUIRED FOR THIS QUESTION

Section B continues on the next page

TURN OVER

Question Four

Today's date is 26 May 2011.

WW is a publishing company that is listed in an Asian country, Country A, which uses the A$ as its currency. WW operates as three separate divisions according to type of publication as follows:

- Public Division – magazines and journals that are widely available in retail stores for purchase by the general public.
- Specialist Division - specialist magazines for particular industry sectors which are only available for delivery by post.
- In-house Division – company in-house journals for circulation to its own staff members.

WW has been disappointed with the recent performance of the Specialist Division and is considering selling that division. WW manages the company's debt centrally and measures the performance of the divisions on the basis of EBIT (earnings before interest and tax).

XX, a book publishing company, has expressed an interest in purchasing the Specialist Division. XX is also located in Country A and is confident that it has the expertise required to improve the performance of the Specialist Division. XX would purchase the net assets employed in the division (that is, non-current assets plus working capital). All borrowings would remain with WW.

There has been some discussion amongst the Directors of XX as to the most appropriate method to use to value the Specialist Division.

Director A has suggested that an asset-based valuation should be used.

Director B has proposed that the valuation should be based on the future operating cash flows of the division, adjusted for tax and discounted by XX's existing weighted average cost of capital (WACC).

Director C has suggested that the WACC used in the valuation should be derived from a proxy company. He has identified YY as a possible proxy for the Specialist Division. YY's sole activity is publishing specialist magazines in a similar market to the Specialist Division.

Director D has suggested that the earnings valuation model should be used based on an estimated cost of equity for the Specialist Division.

Financial data for WW's Specialist Division

The management of WW have provided XX with the following financial data for the Specialist Division:

- The net assets employed in the division had a book value of A$ 15.0 million and an estimated replacement value of A$ 20.0 million on 31 March 2011.
- Operating cash flows adjusted for tax were A$ 2.5 million in the year ended 31 March 2011.
- Operating cash flows are forecast to grow by only 1% per annum in perpetuity if the division remains within WW.

Financial data for XX and YY

	XX	**YY**
Equity beta	1.5	0.8
Gearing ratio (debt/(debt plus equity))	40%	25%
Pre tax cost of debt	6%	7%
Market capitalisation	A$ 150 million	A$ 30 million

Additional relevant information for all companies WW, XX and YY:

- Corporate income tax rate is 30%.
- Risk free rate is 5%.
- The premium over the risk free rate by the market is 6%.
- Debt betas are zero.

Required:

(a) **Calculate:**

(i) XX's existing cost of equity.

(1 mark)

(ii) XX's existing weighted average cost of capital (WACC).

(2 marks)

(iii) A suitable WACC for the Specialist Division based on proxy YY, adjusted for XX's gearing.

(5 marks)

(b) (i) **Calculate** a range of values for the Specialist Division based on the different methods suggested by Directors A, B and C (but not Director D).

(5 marks)

(ii) **Discuss** the validity of the methods suggested by each of the four Directors A, B, C and D.

(8 marks)

(iii) **Advise** XX on an appropriate price for the purchase of the Specialist Division.

(4 marks)

(Total for Question Four = 25 marks)

A REPORT FORMAT IS NOT REQUIRED FOR THIS QUESTION

(Total for Section B = 50 marks)

End of Question Paper

Maths Tables and Formulae are on Pages 21 – 25

Maths Tables and Formulae are on Pages 21 – 25

MATHS TABLES AND FORMULAE

Present value table

Present value of 1.00 unit of currency, that is $(1 + r)^{-n}$ where r = interest rate; n = number of periods until payment or receipt.

Periods	Interest rates (r)									
(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149

Periods	Interest rates (r)									
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.079	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026

Cumulative present value of 1.00 unit of currency per annum

Receivable or Payable at the end of each year for n years $\left[\frac{1-(1+r)^{-n}}{r}\right]$

Periods	Interest rates (r)									
(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.679	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.878	13.590	12.462	11.470	10.594	9.818	9.129	8.514

Periods	Interest rates (r)									
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	7.793	4.611	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870

FORMULAE

Valuation models

(i) Irredeemable preference shares, paying a constant annual dividend, d, in perpetuity, where P_0 is the ex-div value:

$$P_0 = \frac{d}{k_{pref}}$$

(ii) Ordinary (equity) shares, paying a constant annual dividend, d, in perpetuity, where P_0 is the ex-div value:

$$P_0 = \frac{d}{k_e}$$

(iii) Ordinary (equity) shares, paying an annual dividend, d, growing in perpetuity at a constant rate, g, where P_0 is the ex-div value:

$$P_0 = \frac{d_1}{k_e - g} \quad \text{or} \quad P_0 = \frac{d_0[1+g]}{k_e - g}$$

(iv) Irredeemable bonds, paying annual after-tax interest, $i\,[1 - t]$, in perpetuity, where P_0 is the ex-interest value:

$$P_0 = \frac{i[1-t]}{k_{d\,net}}$$

or, without tax:

$$P_0 = \frac{i}{k_d}$$

(v) Total value of the geared entity, V_g (based on MM):

$$V_g = V_u + TB$$

(vi) Future value of S, of a sum X, invested for n periods, compounded at r% interest:

$$S = X[1 + r]^n$$

(vii) Present value of 1·00 payable or receivable in n years, discounted at r% per annum:

$$PV = \frac{1}{[1+r]^n}$$

(viii) Present value of an annuity of 1·00 per annum, receivable or payable for n years, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}\left[1 - \frac{1}{[1+r]^n}\right]$$

(ix) Present value of 1·00 per annum, payable or receivable in perpetuity, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}$$

(x) Present value of 1·00 per annum, receivable or payable, commencing in one year, growing in perpetuity at a constant rate of g% per annum, discounted at r% per annum:

$$PV = \frac{1}{r - g}$$

Cost of capital

(i) Cost of irredeemable preference shares, paying an annual dividend, d, in perpetuity, and having a current ex-div price P_0:

$$k_{\text{pref}} = \frac{d}{P_0}$$

(ii) Cost of irredeemable bonds, paying annual net interest, $i[1 - t]$, and having a current ex-interest price P_0:

$$k_{d\,\text{net}} = \frac{i[1 - t]}{P_0}$$

(iii) Cost of ordinary (equity) shares, paying an annual dividend, d, in perpetuity, and having a current ex-div price P_0:

$$k_e = \frac{d}{P_0}$$

(iv) Cost of ordinary (equity) shares, having a current ex-div price, P_0, having just paid a dividend, d_0, with the dividend growing in perpetuity by a constant g% per annum:

$$k_e = \frac{d_1}{P_0} + g \qquad \text{or} \qquad k_e = \frac{d_0[1 + g]}{P_0} + g$$

(v) Cost of ordinary (equity) shares, using the CAPM:

$$k_e = R_f + [R_m - R_f]ß$$

(vi) Cost of ordinary (equity) share capital in a geared entity :

$$k_{eg} = k_{eu} + [k_{eu} - k_d]\,\frac{V_D[1 - t]}{V_E}$$

(vii) Weighted average cost of capital, k_0 or WACC

$$WACC = k_e\left[\frac{V_E}{V_E + V_D}\right] + k_d[1 - t]\left[\frac{V_D}{V_E + V_D}\right]$$

(viii) Adjusted cost of capital (MM formula):

$$K_{adj} = k_{eu}[1 - tL] \qquad \text{or} \qquad r^* = r[1 - T^*L]$$

(ix) Ungear *ß*:

$$ß_u = ß_g\left[\frac{V_E}{V_E + V_D[1 - t]}\right] + ß_d\left[\frac{V_D[1 - t]}{V_E + V_D[1 - t]}\right]$$

(x) Regear *ß*:

$$ß_g = ß_u + [ß_u - ß_d]\,\frac{V_D[1 - t]}{V_E}$$

(xi) Adjusted discount rate to use in international capital budgeting (International Fisher effect)

$$\frac{1 + \text{annual discount rate B\$}}{1 + \text{annual discount rate A\$}} = \frac{\text{Future spot rate A\$/B\$ in 12 months' time}}{\text{Spot rate A\$/B\$}}$$

where A$/B$ is the number of B$ to each A$

Other formulae

(i) Expectations theory:

$$\text{Future spot rate A\$/B\$} = \text{Spot rate A\$/B\$} \times \frac{1 + \text{nominal country B interest rate}}{1 + \text{nominal country A interest rate}}$$

where:

A$/B$ is the number of B$ to each A$, and
A$ is the currency of country A and B$ is the currency of country B

(ii) Purchasing power parity (law of one price):

$$\text{Future spot rate A\$B\$} = \text{Spot rate A\$/B\$} \times \frac{1 + \text{country B inflation rate}}{1 + \text{country A inflation rate}}$$

(iii) Link between nominal (money) and real interest rates:

$$[1 + \text{nominal (money) rate}] = [1 + \text{real interest rate}][1 + \text{inflation rate}]$$

(iv) Equivalent annual cost:

$$\text{Equivalent annual cost} = \frac{PV \text{ of costs over } n \text{ years}}{n \text{ year annuity factor}}$$

(v) Theoretical ex-rights price:

$$\text{TERP} = \frac{1}{N + 1}[(N \times \text{cum rights price}) + \text{issue price}]$$

(vi) Value of a right:

$$\frac{\text{Theoretical ex rights price} - \text{issue price}}{N}$$

where N = number of rights required to buy one share.

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LIST OF VERBS USED IN THE QUESTION REQUIREMENTS

A list of the learning objectives and verbs that appear in the syllabus and in the question requirements for each question in this paper.

It is important that you answer the question according to the definition of the verb.

LEARNING OBJECTIVE	VERBS USED	DEFINITION
Level 1 KNOWLEDGE What you are expected to know.	List	Make a list of
	State	Express, fully or clearly, the details of/facts of
	Define	Give the exact meaning of
Level 2 COMPREHENSION What you are expected to understand.	Describe	Communicate the key features
	Distinguish	Highlight the differences between
	Explain	Make clear or intelligible/State the meaning or purpose of
	Identify	Recognise, establish or select after consideration
	Illustrate	Use an example to describe or explain something
Level 3 APPLICATION How you are expected to apply your knowledge.	Apply	Put to practical use
	Calculate	Ascertain or reckon mathematically
	Demonstrate	Prove with certainty or to exhibit by practical means
	Prepare	Make or get ready for use
	Reconcile	Make or prove consistent/compatible
	Solve	Find an answer to
	Tabulate	Arrange in a table
Level 4 ANALYSIS How are you expected to analyse the detail of what you have learned.	Analyse	Examine in detail the structure of
	Categorise	Place into a defined class or division
	Compare and contrast	Show the similarities and/or differences between
	Construct	Build up or compile
	Discuss	Examine in detail by argument
	Interpret	Translate into intelligible or familiar terms
	Prioritise	Place in order of priority or sequence for action
	Produce	Create or bring into existence
Level 5 EVALUATION How are you expected to use your learning to evaluate, make decisions or recommendations.	Advise	Counsel, inform or notify
	Evaluate	Appraise or assess the value of
	Recommend	Advise on a course of action

Financial Pillar

Strategic Level Paper

F3 – Financial Strategy

May 2011

Thursday Morning Session