PROFESSIONAL LEVEL EXAMINATION

WEDNESDAY 5 DECEMBER 2018

(2½ HOURS)

FINANCIAL MANAGEMENT

This exam consists of **three** questions (100 marks).

Marks breakdown

Question 1	35 marks
Question 2	30 marks
Question 3	35 marks

1. Please read the instructions on this page carefully before you begin your exam. If you have any questions, raise your hand and speak with the invigilator before you begin.

2. Please alert the invigilator immediately if you encounter any issues during the delivery of the exam. The invigilator cannot advise you on how to use the software. If you believe that your performance has been affected by any issues which occurred, you must request and complete a candidate incident report form at the end of the exam; this form must be submitted as part of any subsequent special consideration application.

3. Click on the **Start Exam** button to begin the exam. The exam timer will begin to count down. A warning is given five minutes before the exam ends. When the exam timer reaches zero, the exam will end. To end the exam early, press the **Finish** button.

4. You may use a pen and paper for draft workings. Any information you write on paper will not be read or marked.

5. The examiner will take account of the way in which answers are structured. Respond directly to the exam question requirements. Do not include any content or opinion of a personal nature. A student survey is provided post-exam for feedback purposes.

6. Ensure that all of your responses are visible on screen and are not hidden within cells. Your answers will be presented to the examiner exactly as they appear on screen.

A Formulae Sheet and Discount Tables are provided with this exam.

Question 1

Assume that the current date is 31 December 2018.

Physiotec plc (Physiotec) is listed on the London Stock Exchange (LSE) and is a major supplier to physiotherapy clinics. One of the products that Physiotec supplies is elastic therapeutic tape (ETT). This is used to treat pain sustained in athletic injuries. Physiotec has incurred £0.5 million of research and development costs relating to a new type of ETT. The research has been successful and Physiotec intends to market the new type of ETT called Supertape. Physiotec is aware that in one year's time, on 31 December 2019, another supplier is likely to launch a product similar to Supertape onto the market.

The finance director of Physiotec, who is an ICAEW Chartered Accountant, intends to appraise the Supertape project using expected net present value. Because the ETT market is very competitive he intends to evaluate the project over a three year time horizon.

A marketing analyst has provided the following estimates of sales of packs of Supertape, with associated probabilities, for the year to 31 December 2019.

Number of packs sold	Probability
4 million	50%
2 million	30%
1 million	20%

Sales volumes for the two years to 31 December 2021 are forecast to be at the expected volume of sales in the year to 31 December 2019, adjusted for growth of 5% pa.

The sales director of Physiotec suggested to the finance director that a public announcement is made to the LSE about the Supertape project, in order to increase the company's share price. He believes that the announcement should state that sales of Supertape are going to be 4 million packs pa. The sales director feels that this is reasonable considering the probability distribution provided by the marketing analyst.

Additional information relating to the Supertape project:

- Each pack of Supertape will be sold for £5 in the year to 31 December 2019. The contribution is expected to be 60% of the selling price. The selling price and variable costs per pack are expected to increase by 3% pa in the two years to 31 December 2021.

- A marketing campaign will cost £0.8 million, payable on 31 December 2018.

- Selling and administration expenses for the year to 31 December 2019 are estimated to be £2 million and are expected to increase by 4% pa in the two years to 31 December 2021.

- Fixed production costs for the year to 31 December 2019 are estimated to be £0.75 million and are expected to remain constant in the two years to 31 December 2021.

- Physiotec will use existing factory space to manufacture Supertape. This factory space is currently let to a third party at a fixed annual rent, which is payable in advance on 31 December, of £1 million pa. The rent will not increase with inflation. At the end of the project the factory space will be re-let to third parties.

- On 31 December 2018 the project requires an investment in working capital of £3 million, which will increase at the start of each year in line with sales volume growth and sales price increases. Working capital will be fully recoverable on 31 December 2021.

- On 31 December 2018 the project will require an investment in plant and equipment of £4 million. It is estimated that on 31 December 2021 the plant and equipment will have a value of £0.5 million (in 31 December 2021 prices).

- The plant and equipment will attract 18% (reducing balance) capital allowances in the year of expenditure and in every subsequent year of ownership by the company, except in the final year.

  At 31 December 2021, the difference between the equipment's written down value for tax purposes and its disposal proceeds will be treated by the company as a:

  (1) balancing allowance, if the disposal proceeds are less than the tax written down value, or
  (2) balancing charge, if the disposal proceeds are more than the tax written down value.

- Assume that the rate of corporation tax will be 17% for the foreseeable future and that tax flows arise in the same year as the cash flows that gave rise to them.

- A suitable real cost of capital to appraise the Supertape project is 7% pa and the general level of inflation is expected to be 2.4% pa.

Requirements

1.1 Using money cash flows, calculate the expected net present value of the Supertape project on 31 December 2018 and advise Physiotec's board whether it should proceed with the project. **(19 marks)**

1.2 **Ignoring the effects on working capital**, calculate the sensitivity of the Supertape project to changes in sales volume and discuss this sensitivity with reference to the estimates provided by the marketing analyst. **(5 marks)**

1.3 Describe **two** advantages and **two** disadvantages of using expected values when appraising the Supertape project. **(4 marks)**

1.4 Describe **two** real options that are available to Physiotec in relation to the Supertape project. **(4 marks)**

1.5 Identify the ethical and legal issues for the finance director of Physiotec regarding the suggestion made by the company's sales director about the public announcement of the Supertape project to the LSE. **(3 marks)**

Total: 35 marks

Question 2

Assume that the current date is 30 November 2018.

North American Cars Ltd (NAC) is a UK based company that imports classic North American cars into the UK. NAC sells the cars in both the UK and the Eurozone. There are three issues that the board of NAC is currently considering.

You are the finance director of NAC and have been asked to report to the board on these three issues.

2.1 Issue 1

NAC is buying a new warehouse to store the cars and has arranged to borrow £800,000 for one year from 30 April 2019 at an interest rate of LIBOR + 3%. The board of NAC is concerned that LIBOR might increase over the next five months from its current level of 1% pa. However, one member of the board is of the opinion that LIBOR will fall.

A bank has offered NAC a forward rate agreement (FRA) at 4.5% pa or an interest rate option at 4% pa plus a premium of 1% of the sum borrowed.

Requirements

(a) Calculate the interest cost of the £800,000 loan using the FRA and the option assuming that LIBOR on 30 April 2019 will be:

- either 1.25% pa
- or 0.60% pa **(6 marks)**

(b) Recommend to the board of NAC whether it should hedge interest rate movements using the FRA or the interest rate option. **(3 marks)**

2.2 Issue 2

On 31 March 2019 NAC is due to pay $1,250,000 to its US suppliers for a shipment of fifty cars. The board of NAC would like to establish the most appropriate hedging strategy to protect the company against foreign exchange rate (forex) risk.

The following data is available at the close of business on 30 November 2018:

Spot exchange rate ($/£)	1.3965 – 1.3970
4-month forward contract discount ($/£)	0.0052 – 0.0058

Annual borrowing and depositing interest rates:

Dollar	4.80% – 4.40%
Sterling	3.75% – 3.25%

4-month over-the-counter (OTC) currency options:

- Call options to buy \$ have an exercise price of \$/£1.4025 and a premium of £0.006 per \$ converted.

- Put options to sell \$ have an exercise price of \$/£1.4028 and a premium of £0.002 per \$ converted.

Option premiums are payable on 30 November 2018. NAC currently has an overdraft.

Requirements

(a) Calculate NAC's sterling cost of the \$1,250,000 payment using:

- a forward contract
- a money market hedge
- an OTC currency option

Assume that the spot exchange rate will be \$/£1.3980 – 1.3990 on 31 March 2019.
(9 marks)

(b) Discuss the relative advantages and disadvantages of each of the hedging techniques in 2.2 (a) above and advise NAC's board on which technique would be the most beneficial for hedging its forex risk. **(8 marks)**

2.3 Issue 3

The board is concerned about NAC's exposure to economic risk as it imports cars from the USA and sells some of them to customers in the Eurozone.

Requirement

Explain how economic risk affects NAC. **(4 marks)**

Total 30 marks

Question 3

Assume that the current date is 30 November 2018.

Continental plc (Continental) is a major international hotel operator. At a recent board meeting it was decided that the company should diversify by opening gymnasiums and health spas in or near to all of its hotels at a cost of £1,000 million. The following are extracts from the board minutes relating to this diversification:

- The board discussed which discount rate to use to appraise the diversification. Some directors felt that the company's existing weighted average cost of capital (WACC) should be used. Others felt that the rate should reflect the systematic risk of the diversification.
- The board discussed how the finance would be raised for this diversification as Continental's current gearing (measured as debt/equity by market values) is close to the hotel market average. Some directors felt that gearing is irrelevant and wanted all the finance to be raised from debt. Others were less sure and expressed concern that the company's credit rating would fall, affecting Continental's cost of debt and the market value of its debentures. They preferred a mix of equity and debt or even all equity finance.
- Several board members felt that the £296 million proposed special dividend for the year to 30 November 2018 should be cancelled and used to partly fund the diversification.

The finance director of Continental was asked to prepare a report on the above issues for presentation at the next board meeting.

An extract from Continental's most recent management accounts is shown below:

Balance sheet at 30 November 2018

	£m
Ordinary share capital (£1 shares)	190
Retained earnings	6,000
	6,190
4% Redeemable debentures at nominal value	1,500
	7,690

On 30 November 2018 Continental's ordinary shares each had a market value of £46 (ex-div).

Continental's debentures are redeemable at par (£100) in four years' time and the current price of the debentures is £94
(ex-interest).

Profits and dividends for the years to 30 November:

	2014 £m	**2015** £m	**2016** £m	**2017** £m	**2018** £m
Profits after tax	372	391	1,222	414	433
Ordinary dividends	105	93	110	137	141
Proposed special dividend	--	--	--	--	296
Total dividends	105	93	110	137	437

Other information and assumptions:

- The number of Continental's ordinary shares in issue has not changed in the last five years.
- Continental's equity beta on 30 November 2018 is 0.74.
- Other companies operating in similar areas to Continental and its proposed diversification:

Company name	Main activity	Equity beta	Total equity by market value £m	Total debt by market value £m
Fitgroup plc	Operating gymnasiums and health spas	0.56	434	150
Bowlright plc	Operating bowling alleys and gymnasiums	0.85	75	23
The Local plc	Operating bars and hotels	0.62	1,221	797

- The risk free rate is expected to be 3% pa.
- The market return is expected to be 9% pa.
- Corporation tax is at the rate of 17% for the foreseeable future.
- An analyst estimated the following:

  (1) If Continental were to fund the £1,000 million diversification entirely by borrowing, the market value of its existing debentures would fall by 5%.
  (2) If Continental were to fund the £1,000 million diversification entirely by equity, the market value of its existing debentures would rise by 5%.
  (3) The price of the company's ordinary shares would stay the same whether the project is funded entirely by debt or entirely by equity.

Requirements

3.1 Calculate on 30 November 2018:

(a) Continental's WACC using the dividend valuation model (dividend growth should be estimated using the earliest and latest dividend information provided).

(b) Continental's cost of equity using the CAPM.

(11 marks)

3.2 Using the CAPM and assuming that the current gearing of Continental remains unchanged after the diversification, calculate a **cost of equity** that reflects the systematic risk of the diversification and also explain your reasoning.

(8 marks)

3.3 Assuming the £1,000 million finance required is raised on 1 December 2018, calculate Continental's gearing (measured as debt/equity by market values) if it comes entirely from:

(a) debt or

(b) equity **(4 marks)**

3.4 Discuss whether the £1,000 million finance required for the diversification should be raised from debt, equity or a combination of debt and equity sources. You should make reference to:

- relevant theories
- Continental's current gearing
- your calculations in 3.3 above
- other relevant practical issues. **(12 marks)**

Total: 35 marks