

Specimen Exam 1

Exam Name: Finance and Investment (E4)

Time Allowed: 3 hours

Pass Mark: 50%

This exam contains 3 sections:

Section A:

15 questions, each worth 2 marks

30 marks in total

Section B:

3 questions, each worth 10 marks

30 marks in total

Section C:

2 questions, each worth 20 marks

40 marks in total

Section A

Question 1

Frost Co is planning a 1 for 4 rights issue with an issue price at a 10% discount to the current share price.

The earnings per share (EPS) is currently \$0.50 and the shares of Frost Co are trading on a price/earnings ratio of 20 times. The market capitalisation of the company is \$50m.

Calculate the theoretical ex-rights price per share (to two decimal places).

\$

Question 2

Swap Co is due to receive goods costing \$2,500. The terms of trade state that payment must be received within three months. However, a discount of 1.5% will be given for payment within one month.

What is the annual percentage cost of ignoring the discount and paying within three months?

- A 6.23%
- B 9.34%
- C 6.14%
- D 9.49%

Question 3

A US company is due to make a supplier payment of €6m in three months’ time. To hedge the foreign currency exposure, the company will sell 56 June futures contracts, each with a contract size of \$125,000. The following information is available:

	Today	In three months
Spot rate	€0.8518 per \$1	€0.8608 per \$1
June futures price	€0.8537 per \$1	€0.8616 per \$1

Select the correct options from each drop-down list to complete the sentence.

When the position is closed out in three months’ time, there will be a
on the futures market of

Select... ▼
€55,300
€47,400
€63,000

Select... ▼
gain
loss

Question 4

Andrew Co is a large, listed company financed by both equity and debt.

Which of the following areas will be LEAST impacted by working capital management?

- A Liquidity management
- B Interest rate management
- C Management of relationship with the bank
- D Dividend policy management

Question 5

Which TWO of the following statements in relation to basis risk are true?

- A It is the difference between the spot exchange rate and the currency futures exchange rate
- B It is the risk that futures exchange rates do not move exactly in line with spot exchange rates
- C It is the difference between fixed and floating interest rates
- D It is one of the reasons for an imperfect currency futures hedge

Question 6

Which of the following statements relating to an irredeemable security paying a fixed rate of interest is correct?

- A As risk rises, the market value of the security will fall to ensure that investors receive an increased yield
- B As risk rises, the market value of the security will fall to ensure that investors receive a reduced yield
- C As risk rises, the market value of the security will rise to ensure that investors receive an increased yield
- D As risk rises, the market value of the security will rise to ensure that investors receive a reduced yield

Question 7

Select whether each of the following statements about a company's market capitalisation are true or false.

		True	False
1.	Market capitalisation will fluctuate		
2.	Market capitalisation incorporates a premium for taking control of the company		

Question 8

The following financial information relates to an investment project:

	\$'000
Present value of sales revenue	50,025
Present value of variable costs	(25,475)
Present value of contribution	24,550
Present value of fixed costs	(18,250)
Present value of operating income	6,300
Initial investment	(5,000)
Net present value (NPV)	1,300

Calculate the sensitivity of the NPV to a change in sales volume (to one decimal place).

%

Question 9

Sunny Peaks Co has a current market capitalisation of \$42m and has recently paid a dividend of \$7m. The estimated annual growth rate for dividends is 2%.

Calculate the cost of equity for Sunny Peaks Co.

%

Question 10

Which of the following actions is LEAST likely to increase shareholder wealth?

- A The weighted average cost of capital is decreased by a recent financing decision
- B The financial rewards of directors are linked to increasing earnings per share
- C The board of directors decide to invest in a project with a positive net present value
- D The annual report declares full compliance with the corporate governance code

Question 11

Governments have a number of economic targets as part of their monetary policy.

Which TWO of the following targets relate predominantly to monetary policy?

- A Increasing tax revenue
- B Controlling the growth of the money supply
- C Reducing public expenditure
- D Keeping interest rates low
- E Reducing income equality

Question 12

Which of the following are always seen as benefits of financial intermediation?

- (1) Interest rate fixing
- (2) Risk pooling
- (3) Maturity transformation

- A 2 only
- B 1 and 3 only
- C 2 and 3 only
- D 1, 2 and 3

Question 13

Which of the following statements concerning capital structure theory is correct?

- A In the traditional view, there is a linear relationship between the cost of equity and financial risk
- B Modigliani and Miller stated that, in the absence of tax, the cost of equity would remain constant
- C Pecking order theory indicates that preference shares are preferred to debt as a source of finance
- D Business risk is assumed to be constant as the capital structure changes

Question 14

The owners of a private company wish to dispose of their entire investment in the company. The company has an issued share capital of \$1m consisting of \$0.50 nominal value ordinary shares. The company has the following assets and liabilities:

	\$m
Non-current assets (carrying amount)	30
Current assets	18
Non-current liabilities	12
Current liabilities	10

The net realisable value of the non-current assets exceeds their carrying amount by \$4m. The current assets include \$2m of accounts receivable which are thought to be irrecoverable.

Calculate the minimum price per share which the owners should accept for the company.

\$

Question 15

Which of the following statements about discounted cash flow investment appraisal methods is correct?

- A NPV can take account of changes in a company's weighted average cost of capital
- B IRR always offers the correct investment advice with respect to mutually exclusive investment projects
- C NPV is a relative measure of the value of an investment project
- D A company should accept investment projects which have an IRR greater than zero.

Section B

The following scenario relates to questions 16 to 20.

Tulip Co is a large company, financed by debt and equity. The company's equity beta is currently 1.05. Tulip Co's board plans to significantly expand the company's existing business operations by acquiring a new factory at a cost of \$20m.

The finance for the expansion will be raised from an issue of 3% loan notes, issued at a nominal value of \$100 per loan note. The loan notes will be redeemable after five years at nominal value or convertible at that time into ordinary shares in Tulip Co with a value expected to be \$115 per loan note. Tulip Co intends to secure the loan notes with a fixed charge on the company's non-current assets and the bank loan is secured by a floating charge on its current assets.

The board is due to meet next week to discuss the impact of the new investment on Tulip Co's cost of equity.

The risk-free rate of return is 2.5% and the equity risk premium is 7.8%.

Note: ignore taxation.

Question 16

Calculate the cost of equity of Tulip Co using the capital asset pricing model (to one decimal place).

%

Question 17

What is the cost of debt of the convertible loan notes, using estimates of 5% and 6%?

- A 3.0%
- B 5.2%
- C 6.9%
- D 5.7%

Question 18

Select the correct option from each drop-down list to complete the sentence.

If the proposed investment goes ahead, Tulip Co’s business risk will

Select... ▼
increase
remain unchanged
decrease

and financial risk will

Select... ▼
increase
remain unchanged
decrease

causing the cost of equity to

Select... ▼
increase.
remain unchanged.
decrease.


Question 19

Which of the following statements about equity finance is correct?

- A Equity finance reserves represent cash which is available to a company to invest
- B Additional equity finance can be raised by rights issues and bonus issues
- C Retained earnings are a source of equity finance
- D Equity finance includes both ordinary shares and preference shares

Question 20

Move the sources of finance of Tulip Co into the correct order according to the level of risk to the investor with the highest risk source of finance at the top and the lowest risk source of finance at the bottom.

Item	Response area
Loan notes	
Ordinary shares	
Redeemable preference shares	
Bank loan	

The following scenario relates to questions 21 to 25.

The board of Ring Co is due to review the company’s recent share price performance. In preparation for its review, the board has requested valuations of the company’s ordinary shares. The most recent draft statement of financial position is as follows:

Draft statement of financial position as at 31 December 20X6

	\$'000	\$'000
Non-current assets	495	
Current assets	537	
Total assets		1,032
Equity		
Ordinary shares (\$1 nominal value)	600	
8% preference shares	110	
Reserves	126	
Total equity		836
Non-current liabilities		
6% loan notes		120
Current liabilities		76
Total liabilities		196
Total equity and liabilities		1,032

Ring Co has just paid a dividend of \$0.450 per share for the year 20X6. Ring Co pays dividends at the year end, and has paid the following dividends in previous years:

Year end	20X5	20X4	20X3	20X2
Dividend per share	\$0.428	\$0.408	\$0.389	\$0.370

Ring Co’s loan notes are redeemable in seven years’ time at their nominal value of \$100 per loan note and pay interest of 6% per year.

Ring Co has a cost of equity of 10% per year and a before-tax cost of debt of 4% per year. The company pays tax on its profits at a rate of 25% per year.

The board recently approved an investment which is expected to have a significant positive net present value (NPV). The investment is due to be announced next month. The marketing director believes the share price will increase once the announcement has been made whereas the finance director believes the information about the new project is already reflected in the current share price.

Question 21

What is the value of each ordinary share on a net asset basis using carrying amounts?

- A \$1.21
- B \$1.39
- C \$1.54
- D \$1.00

Question 22

Calculate the value of each ordinary share using the dividend growth model (to two decimal places).

\$

Question 23

What is the market value of each loan note?

- A \$109.34
- B \$112.01
- C \$116.57
- D \$118.68

Question 24

Which of the following statements about valuation methods is true?

- A The earnings yield method multiplies earnings by the earnings yield
- B The equity market value is the number of shares multiplied by the share price, plus the market value of debt
- C The dividend valuation model makes the unreasonable assumption that average dividend growth is constant
- D The price/earnings ratio method divides earnings by the price/earnings ratio

Question 25

Select the form of market efficiency which is consistent with the views of the marketing and finance directors about Ring Co's future share price performance.

		Weak	Semi-strong	Strong
1.	Marketing director			
2.	Finance director			

The following scenario relates to questions 26 to 30.

Peony Co's finance director is concerned about the effect of future interest rates on the company and has been looking at the yield curve.

Peony Co, whose domestic currency is the dollar (\$), plans to take out a \$100m loan in 3 months' time for a period of 9 months. The company is concerned that interest rates might rise before the loan is taken out and its bank has offered a 3 v 12 forward rate agreement at 7.10 – 6.85.

The loan will be converted into pesos and invested in a 9-month project which is expected to generate income of 580m pesos, with 200m pesos being paid in 6 months' time (from today) and 380m pesos being paid in 12 months' time (from today). The current spot exchange rate is 5 pesos per \$1.

The following information on current short-term interest rates is available:

Dollars	6.5% per year
Pesos	10.0% per year

The finance director is also concerned about the company's exposure to foreign currency risk. Peony Co is due to make a payment of €600,000 to a supplier in three months' time.

Peony Co is considering a variety of ways in which to manage its exposure to foreign currency risk and interest rate risk, including the use of derivatives.

Question 26

Peony Co intends to hedge the foreign currency risk associated with the payment to its supplier using over-the-counter (OTC) currency options. The company can purchase either euro call or put options with an exercise price of \$1.1812 per €1. The option premium is \$0.03 per €1 for the call option and \$0.08 per €1 for the put option.

Calculate the maximum dollar cost of the payment to Peony Co's supplier if OTC currency options are used to hedge the exposure to foreign currency risk (to the nearest \$).

\$

Question 27

Match both the appropriate compensatory payment under the forward agreement and the correct settlement outcome if the interest rate on the loan is 6.7% when it is taken out.

Compensatory payment
\$75,000
\$300,000
\$400,000
Settlement outcome
Peony Co pays the bank
Bank pays Peony Co

Compensatory payment
Settlement outcome

Question 28

Calculate the dollar income received from the project using exchange rates based on interest rate parity (to one decimal place).

\$ m

Question 29

Which of the following statements is/are correct in respect of Peony Co managing its interest rate risk.

- (1) Smoothing is an interest rate risk hedging technique which involves maintaining a balance between fixed-rate and floating-rate debt
- (2) Asset and liability management can hedge interest rate risk by matching the maturity of assets and liabilities

- A 1 only
 B 2 only
 C Both 1 and 2
 D Neither 1 nor 2

Question 30

Which TWO of the following statements are correct in relation to the yield curve?

- A The yield curve is normally downward sloping as short-term debt is riskier to a company than long-term debt
- B An inverted yield curve can be caused by government action to increase its long-term borrowing
- C A kink (discontinuity) in the normal yield curve can be due to differing yields in different market segments
- D Basis risk can cause the corporate yield curve to rise more steeply than the government yield curve
- E An inverted yield curve can highlight expectations of an economic slowdown or recession

Section C

Question 31

The following scenario relates to four requirements.

Guillermo Co is a medium-sized company which manufactures a single product. It takes two days to manufacture the product.

Figures from its most recent financial statements are as follows:

	\$'000
Revenue	6,000
Inventory – raw material	120
Inventory – work in progress	20
Inventory – finished goods	80
Trade receivables	850
Trade payables	162

Sales

Credit sales account for 75% of the total revenue and Guillermo Co's gross profit margin is 60%. Guillermo Co has a large number of credit customers but there is no separate credit control function and chasing of overdue debt is left to the relevant customer account manager. The finance manager considers this to be satisfactory to enable the finance department to concentrate on more important aspects of the business. The standard credit term for credit customers is 30 days and no credit accounts are currently suspended. All customer account managers are paid a bonus based on the level of sales achieved.

Purchases

Raw material purchases in the year totalled \$2,160,000 and 90% of this was purchased on credit. Raw material is the only supply Guillermo Co purchases on credit. Guillermo Co has always tried to maintain good supplier relations and the average credit term from suppliers is 35 days.

Cash management

The industry Guillermo Co operates in has experienced significant changes in recent years, with new regulations and stronger competition. This has made it more difficult to predict

cash flows. As a result, the finance director has proposed adopting the Miller-Orr model for managing Guillermo Co's cash.

However, in a recent board meeting, the marketing director stated: "We already use the Baumol model for managing cash, I think switching to the Miller-Orr model will be more complex without adding much benefit".

The management of Guillermo Co has decided that the minimum cash balance should be \$40,000 but the cash flows are volatile with a daily standard deviation of \$15,000.

If extra cash is needed, then Guillermo Co will sell tradeable securities from an investment portfolio it owns. The transaction cost for a purchase is the same as for a sale at \$55 per transaction.

Interest rates are currently 9% per year.

Assume a 360 day-year for ALL calculations.

Requirements:

(a) Calculate Guillermo Co's cash operating cycle.

(5 marks)

(b) Assess THREE ways in which Guillermo Co could reduce its cash operating cycle.

(6 marks)

(c) Using the Miller-Orr model, calculate the target cash balance (return point) and upper limit for Guillermo Co and recommend what Guillermo Co should do when cash reaches the upper and lower limits, including any relevant calculations.

(5 marks)

(d) Analyse the benefits of the finance director's proposal to switch to the Miller-Orr model to manage Guillermo Co's cash.

(4 marks)

(20 marks)

Question 32

The following scenario relates to three requirements.

Vip Co, a large stock-exchange listed company, is evaluating an investment proposal to manufacture Product W33, which has performed well in test marketing trials conducted recently by the company's research and development division. Vip Co plans to introduce a fully-automated process to manufacture Product W33. This process is expected to yield significant savings in operating costs.

The following information relating to this investment proposal has now been prepared:

Initial investment	\$2 million
Selling price (current price terms)	\$20 per unit
Expected selling price inflation	3% per year
Variable operating costs (current price terms)	\$8 per unit
Fixed operating costs (current price terms)	\$170,000 per year
Expected operating cost inflation	4% per year

The research and development division has prepared the following demand forecast as a result of its test marketing trials. The forecast reflects expected technological change and its effect on the anticipated life cycle of Product W33.

Year	1	2	3	4
Demand (units)	60,000	70,000	120,000	45,000

It is expected that all units of Product W33 produced will be sold, in line with the company's policy of keeping no inventory of finished goods. No machinery scrap value is expected at the end of four years, when production of Product W33 is planned to end. For investment appraisal purposes, Vip Co uses a nominal (money) discount rate of 10% per year and a target return on capital employed of 30% per year.

Note: Ignore taxation.

Non-financial factors

Product W33 will be manufactured using a fully-automated process which would lead to a major reduction in the workforce whilst significantly increasing noise levels from Vip Co's factory. The success of the project also relies on the intensive use of scarce natural resources, such as energy and water, in a region where supply constraints already exist. Environmental groups have expressed concern that such a proposal may not be compatible with sustainable development objectives.

Requirements:

(a) Calculate the following values for the investment proposal:

(i) Net present value

(5 marks)

(ii) Internal rate of return; and

(2 marks)

(iii) Return on capital employed based on average investment.

(2 marks)

(b) Recommend whether the investment proposal is financially acceptable based on your calculations in part (a)

(3 marks)

(c) Assess the relevance of the non-financial factors associated with the Product W33 proposal to the investment decision.

(8 marks)

(20 marks)