CIMA

Financial Management Pillar

Managerial Level Paper

P7 – Financial Accounting and Tax Principles

24 November 2005 – Thursday Afternoon 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, make annotations 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). The requirements for questions in Sections B and C are highlighted in a dotted box.
Answer the ONE compulsory question in Section A. This is comprised of 20 sub-questions on pages 2 to 9.
Answer ALL SIX compulsory sub-questions in Section B on pages 10 to 12.
Answer ONE of the two questions in Section C on pages 14 to 17.
Maths Tables and Formulae are provided on pages 19 to 21. These pages are detachable for ease of reference.
Write your full examination number, paper number and the examination subject title in the spaces provided on the front of the examination 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.

P7 – Financial Accounting and Tax Principles

TURN OVER

SECTION A – 50 MARKS

[the indicative time for answering this Section is 90 minutes]

ANSWER *ALL* TWENTY SUB-QUESTIONS

Instructions for answering Section A:

The answers to the twenty sub-questions in Section A should ALL be written in your answer book.

Your answers should be clearly numbered with the sub-question number and then ruled off, so that the markers know which sub-question you are answering. For multiple choice questions, you need only write the sub-question number and the letter of the answer option you have chosen. You do not need to start a new page for each sub-question.

For sub-questions **1.5**, **1.6**, **1.7**, **1.9** and **1.18** you should show your workings as marks are available for the method you use to answer these sub-questions.

Question One

1.1 The following measures relate to a non-current asset:

(i)	Net book value	$20,000
(ii)	Net realisable value	$18,000
(iii)	Value in use	$22,000
(iv)	Replacement cost	$50,000

The recoverable amount of the asset is

A $18,000

B $20,000

C $22,000

D $50,000

(2 marks)

1.2 Which ONE of the following would be regarded as a related party of BS?

A BX, a customer of BS.

B The president of the BS Board, who is also the chief executive officer of another entity, BU, that supplies goods to BS.

C BQ, a supplier of BS.

D BY, BS's main banker.

(2 marks)

1.3 Which ONE of the following would be regarded as a change of accounting policy under IAS 8 *Accounting policies, changes in accounting estimates and errors?*

A An entity changes its method of depreciation of machinery from straight line to reducing balance.

B An entity has started capitalising borrowing costs for assets under the alternative treatment allowed by IAS 23 *Borrowing costs*. The borrowing costs previously had been charged to income statement.

C An entity changes its method of calculating the provision for warranty claims on its products sold.

D An entity disclosed a contingent liability for a legal claim in the previous year's accounts. In the current year, a provision has been made for the same legal claim.

(2 marks)

1.4 An entity's working capital financing policy is to finance working capital using short-term financing to fund all the fluctuating current assets as well as some of the permanent part of the current assets.

The above policy is an example of

A an aggressive policy.

B a conservative policy.

C a short-term policy.

D a moderate policy.

(2 marks)

1.5 An item of machinery leased under a five year finance lease on 1 October 2003 had a fair value of $51,900 at date of purchase.

The lease payments were $12,000 per year, payable in arrears.

If the sum of digits method is used to apportion interest to accounting periods, calculate the finance cost for the year ended 30 September 2005.

(3 marks)

Section A continues on the next page

TURN OVER

1.6 At 30 September 2005, BY had the following balances, with comparatives:

Balance Sheet extracts:

As at 30 September	*2005*	*2004*
	$000	*$000*
Non-current tangible assets		
Property, plant and equipment	260	180
Equity and reserves		
Property, plant and equipment revaluation reserve	30	10

The income statement for the year ended 30 September 2005 included:

Gain on disposal of an item of equipment	$10,000
Depreciation charge for the year	$40,000

Notes to the accounts:
Equipment disposed of had cost $90,000. The proceeds received on disposal were $15,000.

Calculate the property, plant and equipment purchases that BY would show in its cash flow statement for the year ended 30 September 2005, as required by IAS 7 *Cash flow statements*.

(4 marks)

1.7 BC, a small entity, purchased its only non-current tangible asset on 1 October 2003. The asset cost $900,000, all of which qualified for tax depreciation.

BC's asset qualified for an accelerated first year tax allowance of 50%. The second and subsequent years qualified for tax depreciation at 25% per year on the reducing balance method.

BC's accounting depreciation policy is to depreciate the asset over its useful economic life of five years, assuming a residual value of $50,000.

Assume that BC pays tax on its income at the rate of 30%.

Calculate BC's deferred tax balance required in the balance sheet as at 30 September 2005 according to IAS 12 *Income taxes*.

(4 marks)

1.8 The setting of International Accounting Standards is carried out by co-operation between a number of committees and boards, which include:

(i) International Accounting Standards Committee Foundation (IASC Foundation)

(ii) Standards Advisory Council (SAC)

(iii) International Financial Reporting Interpretations Committee (IFRIC)

Which of the above reports to, or advises, the International Accounting Standards Board (IASB)?

	Reports to:	*Advises:*
A	(i) and (iii)	(ii)
B	(i) and (ii)	(iii)
C	(iii)	(ii)
D	(ii)	(i)

(2 marks)

1.9 Country B has a corporate income tax system that treats capital gains/losses separately from trading profits/losses. Capital gains/losses cannot be offset against trading profits/losses. All losses can be carried forward indefinitely, but cannot be carried back to previous years. Trading profits and capital gains are both taxed at 20%.

BD had no brought forward losses on 1 October 2002. BD's results for 2003 to 2005 were as follows:

	Trading profit/(loss) *$000*	*Capital gains/(loss)* *$000*
Year to September 2003	200	(100)
Year to September 2004	(120)	0
Year to September 2005	150	130

Calculate BD's corporate income tax due for each of the years ended 30 September 2003 to 2005.

(3 marks)

Section A continues on the next page

TURN OVER

1.10 Which ONE of the following would require a provision to be created by BW at its balance sheet date of 31 October 2005?

A The government introduced new laws on data protection which come into force on 1 January 2006. BW's directors have agreed that this will require a large number of staff to be retrained. At 31 October 2005, the directors were waiting on a report they had commissioned that would identify the actual training requirements.

B At the balance sheet date, BW is negotiating with its insurance provider about the amount of an insurance claim that it had filed. On 20 November 2005, the insurance provider agreed to pay $200,000.

C BW makes refunds to customers for any goods returned within 30 days of sale, and has done so for many years.

D A customer is suing BW for damages alleged to have been caused by BW's product. BW is contesting the claim and, at 31 October 2005, the directors have been advised by BW's legal advisers it is very unlikely to lose the case.

(2 marks)

1.11 IAS 18 *Revenue recognition* defines when revenue may be recognised on the sale of goods.

List FOUR of the five conditions that IAS 18 requires to be met for income to be recognised.

(4 marks)

1.12 Country OS has a value added tax (VAT) system where VAT is charged on all goods and services. Registered VAT entities are allowed to recover input VAT paid on their purchases.

VAT operates at different levels in OS:

- Standard rate 10%
- Luxury rate 20%
- Zero rate 0%

During the last VAT period, an entity, BZ, purchased materials and services costing $100,000, excluding VAT. All materials and services were at standard rate VAT.

BZ converted the materials into two products Z and L; product Z is zero rated and product L is luxury rated for VAT purposes.

During the VAT period, BZ made the following sales, excluding VAT:

	$
Z	60,000
L	120,000

At the end of the period, BZ paid the net VAT due to the tax authorities.

Assuming BZ had no other VAT-related transactions, how much VAT did BZ pay?

(2 marks)

1.13 At 1 October 2004, BK had the following balance:

Accrued interest payable	$12,000 credit

During the year ended 30 September 2005, BK charged interest payable of $41,000 to its income statement. The closing balance on accrued interest payable account at 30 September 2005 was $15,000 credit.

How much interest paid should BK show on its cash flow statement for the year ended 30 September 2005?

A $38,000

B $41,000

C $44,000

D $53,000

(2 marks)

1.14 If an external auditor does not agree with the directors' treatment of a material item in the accounts, the first action they should take is to

A give a qualified opinion of the financial statements.

B give an unqualified opinion of the financial statements.

C force the directors to change the treatment of the item in the accounts.

D persuade the directors to change the treatment of the item in the accounts.

(2 marks)

1.15 BL started a contract on 1 November 2004. The contract was scheduled to run for two years and has a sales value of $40 million.

At 31 October 2005, the following details were obtained from BL's records:

	$m
Costs incurred to date	16
Estimated costs to completion	18
Percentage complete at 31 October 2005	45%

Applying IAS 11 *Construction contracts*, how much revenue and profit should BL recognise in its income statement for the year ended 31 October 2005?

(2 marks)

Section A continues on the next page

TURN OVER

1.16 An entity sells furniture and adds a sales tax to the selling price of all products sold. A customer purchasing furniture from the entity has to pay the cost of the furniture plus the sales tax. The customer therefore bears the cost of the sales tax.

This is referred to as

A formal incidence.

B indirect incidence.

C effective incidence.

D direct incidence.

(2 marks)

1.17 BN is a listed entity and has the following balances included on its opening balance sheet:

	$000
Equity and reserves:	
Equity shares, $1 shares, fully paid	750
Share premium	250
Retained earnings	500
	1,500

BN reacquired 100,000 of its shares and classified them as "treasury shares". BN still held the treasury shares at the year end.

How should BN classify the treasury shares on its closing balance sheet in accordance with IAS 32 *Financial instruments – disclosure and presentation*?

A As a non-current asset investment.

B As a deduction from equity.

C As a current asset investment.

D As a non-current liability.

(2 marks)

1.18 BE has been offering 60 day payment terms to its customers, but now wants to improve its cash flow. BE is proposing to offer a 1·5% discount for payment within 20 days.

Assume a 365 day year and an invoice value of $1,000.

What is the effective annual interest rate that BE will incur for this action?

(4 marks)

1.19 BM has a taxable profit of $30,000 and receives a tax assessment of $3,000.

BV has a taxable profit of $60,000 and receives a tax assessment of $7,500.

BM and BV are resident in the same tax jurisdiction.

This tax could be said to be

A a progressive tax.

B a regressive tax.

C a direct tax.

D a proportional tax.

(2 marks)

1.20 IAS 1 *Presentation of financial statements* requires some of the items to be disclosed on the face of the financial statements and others to be disclosed in the notes.

(i) Depreciation

(ii) Revenue

(iii) Closing inventory

(iv) Finance cost

(v) Dividends

Which TWO of the above have to be shown on the face of the income statement, rather than in the notes:

A (i) and (iv)

B (iii) and (v)

C (ii) and (iii)

D (ii) and (iv)

(2 marks)

(Total for Section A = 50 marks)

End of Section A

Section B starts on the next page

TURN OVER

SECTION B – 30 MARKS

[the indicative time for answering this Section is 54 minutes]

ANSWER *ALL* SIX SUB-QUESTIONS

Question Two

(a)

Required:

(i) Explain the difference between tax avoidance and tax evasion.

(2 marks)

(ii) Briefly explain the methods that governments can use to reduce tax avoidance and tax evasion.

(3 marks)

(Total for sub-question (a) = 5 marks)

(b) BF manufactures a range of domestic appliances. Due to past delays in suppliers providing goods, BF has had to hold an inventory of raw materials, in order that the production could continue to operate smoothly. Due to recent improvements in supplier reliability, BF is re-examining its inventory holding policies and recalculating economic order quantities (EOQ).

- Item "Z" costs BF — $10·00 per unit
- Expected annual production usage is — 65,000 units
- Procurement costs (cost of placing and processing one order) are — $25·00
- The cost of holding one unit for one year has been calculated as — $3·00

The supplier of item "Z" has informed BF that if the order was 2,000 units or more at one time, a 2% discount would be given on the price of the goods.

Required:

(i) Calculate the EOQ for item "Z" before the quantity discount.

(2 marks)

(ii) Advise BF if it should increase the order size of item "Z" so as to qualify for the 2% discount.

(3 marks)

(Total for sub-question (b) = 5 marks)

(c) BJ is an entity that provides a range of facilities for holidaymakers and travellers. At 1 October 2004 these included:

- a short haul airline operating within Europe; and
- a travel agency specialising in arranging holidays to more exotic destinations, such as Hawaii and Fiji.

BJ's airline operation has made significant losses for the last two years. On 31 January 2005, the directors of BJ decided that, due to a significant increase in competition on short haul flights within Europe, BJ would close all of its airline operations and dispose of its fleet of aircraft. All flights for holiday makers and travellers who had already booked seats would be provided by third party airlines. All operations ceased on 31 May 2005.

On 31 July 2005, BJ sold its fleet of aircraft and associated non-current assets for $500 million, the carrying value at that date was $750 million.

At the balance sheet date, BJ were still in negotiation with some employees regarding severance payments. BJ has estimated that in the financial period October 2005 to September 2006, they will agree a settlement of $20 million compensation.

The closure of the airline operation caused BJ to carry out a major restructuring of the entire entity. The restructuring has been agreed by the directors and active steps have been taken to implement it. The cost of restructuring to be incurred in year 2005/2006 is estimated at $10 million.

Required:

Explain how BJ should report the events described above and quantify any amounts required to be included in its financial statements for the year ended 30 September 2005. (Detailed disclosure notes are not required.)

(Total for sub-question (c) = 5 marks)

(d) The International Accounting Standards Board's (IASB's) *Framework for the preparation and presentation of financial statements* (Framework) identifies four principal qualitative characteristics of financial information.

Required:

Identify and explain EACH of the FOUR principal qualitative characteristics of financial information listed in the IASB's Framework.

(Total for sub-question (d) = 5 marks)

TURN OVER

(e) BI owns a building which it uses as its offices, warehouse and garage. The land is carried as a separate non-current tangible asset in the balance sheet.

BI has a policy of regularly revaluing its non-current tangible assets. The original cost of the building in October 2002 was $1,000,000; it was assumed to have a remaining useful life of 20 years at that date, with no residual value. The building was revalued on 30 September 2004 by a professional valuer at $1,800,000.

BI also owns a brand name which it acquired 1 October 2000 for $500,000. The brand name is being amortised over 10 years.

The economic climate had deteriorated during 2005, causing BI to carry out an impairment review of its assets at 30 September 2005. BI's building was valued at a market value of $1,500,000 on 30 September 2005 by an independent valuer. A brand specialist valued BI's brand name at market value of $200,000 on the same date.

BI's management accountant calculated that the brand name's value in use at 30 September 2005 was $150,000.

Required:

Explain how BI should report the events described above and quantify any amounts required to be included in its financial statements for the year ended 30 September 2005.

(Total for sub-question (e) = 5 marks)

(f) BH purchased a bond with a face value of $1,000 on 1 June 2003 for $850. The bond has a coupon rate of 7%. BH intends holding the bond to its maturity on 31 May 2008 when it will repay its face value.

Required:

(i) Explain the difference between the coupon rate of a security and its yield to maturity.

(2 marks)

(ii) Calculate the bond's yield to maturity.

(3 marks)

(Total for sub-question (f) = 5 marks)

(Total for Section B = 30 marks)

End of Section B

Section C starts on the next page

TURN OVER

SECTION C – 20 MARKS

[the indicative time for answering this Section is 36 minutes]

ANSWER *ONE* QUESTION FROM TWO

Question Three

BG provides office cleaning services to a range of organisations in its local area. BG operates through a small network of depots that are rented spaces situated in out-of-town industrial developments. BG has a policy to lease all vehicles on operating leases.

The trial balance for BG at 30 September 2005 was as follows:

	$000	*$000*
10% bonds (redeemable 2010)		150
Administrative expenses	239	
Available for sale investments at market value 30 September 2004	205	
Bank & cash	147	
Bond interest paid – half year to 31 March 2005	8	
Cost of cleaning materials consumed	101	
Direct operating expenses (including cleaning staff)	548	
Dividend paid	60	
Equipment and fixtures, cost at 30 September 2005	752	
Equity shares $1 each, fully paid		200
Income tax	9	
Inventory of cleaning materials at 30 September 2005	37	
Investment income received		11
Provision for deferred tax		50
Provision for depreciation at 30 September 2004:		
Equipment and fixtures		370
Provision for legal claim balance at 30 September 2004		190
Retained earnings at 30 September 2004		226
Revaluation reserve at 30 September 2004		30
Revenue		1,017
Share premium		40
Trade payables		24
Trade receivables	141	
Vehicle operating lease rentals paid	61	
	2,308	2,308

Additional information:

(i) Available for sale investments are carried in the financial statements at market value. The market value of the available for sale investments at 30 September 2005 was $225,000. There were no purchases or sales of available for sale investments held during the year.

(ii) The income tax balance in the trial balance is a result of the underprovision of tax for the year ended 30 September 2004.

(iii) The taxation due for the year ended 30 September 2005 is estimated at $64,000 and the deferred tax provision needs to be increased by $15,000.

(iv) Equipment and fixtures are depreciated at 20% per annum straight line. Depreciation of equipment and fixtures is considered to be part of direct cost of sales. BG's policy is to charge a full year's depreciation in the year of acquisition and no depreciation in the year of disposal.

(v) The 10% bonds were issued in 2000.

(vi) BG paid an interim dividend during the year, but does not propose to pay a final dividend as profit for the year is well below expectations.

(vii) At 30 September 2004, BG had an outstanding legal claim from a customer alleging that BG had caused a major fire in the customer's premises. BG was advised that it would very probably lose the case, so a provision of $190,000 was set up at 30 September 2004. During 2005, new evidence was discovered and the case against BG was dropped. As there is no further liability, the directors have decided that the provision is no longer required.

Required:

Prepare the income statement and a statement of changes in equity for BG for the year to 30 September 2005 and a balance sheet at that date, in a form suitable for presentation to the shareholders and in accordance with the requirements of International Financial Reporting Standards.

Notes to the financial statements are NOT required, but all workings must be clearly shown. All workings should be to the nearest $000. DO NOT prepare a statement of accounting policies.

(Total for Question Three = 20 marks)

Section C continues on the next page

TURN OVER

Question Four

BB is a private sector training entity, which provides short courses and various in-house courses for large employers.

BB's forecast financial statements for the year ended 31 December includes the following:

Forecast Balance Sheet at 31 December 2005 (extract)

Current assets	
Trade receivables: In-house training courses	\$34,100
Bank	\$12,460

Forecast Income Statement for the year ended 31 December 2005 (extract)

Revenue: In-house training courses	\$125,000

BB is preparing its budgets for the year 1 January 2006 to 31 December 2006, but the cash budget has not yet been completed. The Finance Director is concerned about the cash flow forecast for the first six months and has asked you, a trainee management accountant, to prepare a cash budget for the six months from January to June 2006 from the budgeted information provided.

Budgeted revenue

Short training courses
Short training courses budgeted charge \$100 per person per course.

Short courses are generally one night a week for four weeks commencing on the first of each month, except December and January.

Budgeted short course information:	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*
Number of courses	0	2	3	3	4	4	4
Forecast students per course	0	10	12	12	14	13	15

BB expects to receive payment in advance of each course. Experience shows that, on average, one third of students pay one month in advance and the rest pay on the first day of the course.

In-house training courses
The exact number and type of in-house training courses is unknown at present but, during 2006, BB is expecting to earn \$130,000 spread evenly throughout the year. Based on previous experience, the following receipts are forecast:

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*
In-house training course fee receipts (including trade receivables at 31 December 2005)	\$5,000	\$8,000	\$10,000	\$11,000	\$12,000	\$6,000

BB has previously experienced problems of slow payment from some large employers and is monitoring the trade receivables collection period.

Budgeted expenditure
BB employs permanent full-time members of staff to run the entity and provide key lecturing skills. Most of the trainers are part-time tutors at an hourly rate.

Budgeted wages 2006	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*
Part-time tutor wages	\$0	\$2,500	\$4,000	\$4,000	\$5,000	\$6,000

Permanent staff salaries are currently \$4,000 a month. All full-time staff will receive an increase of 5% from 1 March 2006.

BB rents the premises for $2,500 a year, payable in quarterly instalments in January, April, July and October.

Teaching materials, printing and photocopying average $150 per short course (paid in the month of the course). The in-house courses cost, on average, $100 per month.

Budgeted payments in respect of overheads (electricity, telephone and so on) for January and April are $1,500 and for February, March, May and June are $600.

Capital expenditure in the first six months of 2006 is planned as follows:

(i) New furniture for the managing director's office $5,000 payable in April.

(ii) BB needs to replace all the IT equipment in one of its computer labs early in 2006. This is currently planned to take place in April, with payment in May 2006. The budgeted cost of the equipment is $40,000 for 20 top-of-the-range PCs and related equipment.

Other information
BB has negotiated an overdraft facility with the bank for an overdraft up to $5,000.

Required:

(a) Calculate BB's in-house training course trade receivables days outstanding

(i) according to the forecast at 31 December 2005;

(ii) according to the projected figures at 30 June 2006, assuming the revenue and cash flow budgets are implemented.

(5 marks)

(b) Prepare BB's cash budget for the first six months of 2006 (January to June).

(10 marks)

(c) Advise BB of any actions it can take to make sufficient funds available to purchase the new technology as budgeted in May 2006.

(5 marks)

(Total for Question Four = 20 marks)

(Total for Section C = 20 marks)

End of Question Paper

Maths Tables and Formulae are on pages 19 to 21

TURN OVER

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MATHS TABLES AND FORMULAE

Present value table

Present value of $1, 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	0705	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 per annum

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

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) Future value of *S*, of a sum *X*, invested for *n* periods, compounded at *r*% interest: $S = X[1 + r]^n$

(ii) Present value of $1 payable or receivable in *n* years, discounted at *r*% per annum:

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

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

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

(iv) Present value of $1 per annum, payable or receivable in perpetuity, commencing in one year, discounted at *r*% per annum:

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

(v) Present value of $1 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:

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

Inventory management

(i) Economic Order Quantity

$$EOQ = \sqrt{\frac{2C_oD}{C_h}}$$

where: C_o = cost of placing an order
C_h = cost of holding one unit in Inventory for one year
D = annual demand

Cash management

(i) Optimal sale of securities, Baumol model:

$$\text{Optimal sale} = \sqrt{\frac{2 \text{ x Annual cash disbursements x Cost per sale of securities}}{\text{interest rate}}}$$

(ii) Spread between upper and lower cash balance limits, Miller-Orr model:

$$\text{Spread} = 3\left[\frac{\frac{3}{4} \text{ x transaction cost x variance of cash flows}}{\text{interest rate}}\right]^{\frac{1}{3}}$$

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Financial Management Pillar

Managerial Level

P7 – Financial Accounting and Tax Principles

November 2005

Thursday Afternoon Session