

DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO.



Financial Pillar

## F1 – Financial Operations

21 November 2013 – Thursday Morning Session

### **Instructions to candidates**

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| You are allowed three hours to answer this question paper.   |
| You are allowed 20 minutes reading time <b>before the examination begins</b> during which you should read the question paper and, if you wish, highlight and/or make notes on the question paper. However, you will <b>not</b> be allowed, <b>under any circumstances</b> , 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 <b>not</b> be submitted for marking.  |
| You should show all workings as marks are available for the method you use.  |
| ALL QUESTIONS ARE COMPULSORY.  |
| Section A comprises 10 sub-questions and is on pages 3 to 5.   |
| Section B comprises 6 sub-questions and is on pages 6 to 8.  |
| Section C comprises 2 questions and is on pages 10 to 13.  |
| The country 'Tax Regime' for the paper is provided on page 2. Maths tables and formulae are provided on pages 17 and 18.   |
| References to IFRS in this paper refer to International Financial Reporting Standards or International Accounting Standards as issued or adopted by the International Accounting Standards Board.  |
| The list of verbs as published in the syllabus is given for reference on page 19.  |
| 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 the questions you have answered.  |

**F1 – Financial Operations**

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## COUNTRY X - TAX REGIME FOR USE THROUGHOUT THE EXAMINATION PAPER

### Relevant Tax Rules for Years Ended 31 March 2007 to 2014

#### Corporate Profits

Unless otherwise specified, only the following rules for taxation of corporate profits will be relevant, other taxes can be ignored:

- Accounting rules on recognition and measurement are followed for tax purposes.
- All expenses other than depreciation, amortisation, entertaining, taxes paid to other public bodies and donations to political parties are tax deductible.
- Tax depreciation is deductible as follows:
  - 50% of additions to property, plant and equipment in the accounting period in which they are recorded;
  - 25% per year of the written-down value (i.e. cost minus previous allowances) in subsequent accounting periods except that in which the asset is disposed of;
  - No tax depreciation is allowed on land.
- The corporate tax on profits is at a rate of 25%.
- No indexation is allowable on the sale of land.
- Tax losses can be carried forward to offset against future taxable profits from the same business.

#### Value Added Tax

Country X has a VAT system which allows entities to reclaim input tax paid. In country X the VAT rates are:

|                |     |
|----------------|-----|
| Zero rated     | 0%  |
| Standard rated | 15% |
| Exempt goods   | 0%  |

## SECTION A – 20 MARKS

[You are advised to spend no longer than 36 minutes on this section]

ANSWER ALL TEN SUB-QUESTIONS IN THIS SECTION

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*Instructions for answering Section A:*

The answers to the ten 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.

### Question One

1.1 Which ONE of the following is regarded as a direct tax?

- A Value added tax
- B Capital gains tax
- C Excise duties
- D Property tax

(2 marks)

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1.2 In many countries employees' earnings have tax deducted by their employers before being paid to them. This is sometimes referred to as "Pay-as-you-earn".

**Identify** TWO advantages of "Pay-as-you-earn" to *employees*.

(2 marks)

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TURN OVER

**1.3** UI has the following details:

- (i) Incorporated in Country A.
- (ii) Senior management hold regular board meetings in Country B and exercise control from there, but there are no sales or purchases made in Country B.
- (iii) Carries out its main business activities in Country C.

Assume all three countries have double taxation treaties with each other, based on the OECD model tax convention.

In which country/countries will UI be deemed to be resident for tax purposes?

- A** Country A
- B** Country B
- C** Country C
- D** Countries B and C

**(2 marks)**

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**1.4** DF, a small entity resident in Country X, purchased its only item of plant on 1 October 2011 for \$200,000.

DF charges depreciation on a straight line basis over 5 years.

DF's deferred tax balance as at 30 September 2013, in accordance with IAS 12 *Income Taxes* is:

- A** \$3,750
- B** \$11,250
- C** \$18,750
- D** \$45,000

**(2 marks)**

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**1.5** GH is registered for VAT in Country X and is partially exempt for VAT purposes.

GH's sales for the last VAT period, excluding VAT, were:

|                        |        |
|------------------------|--------|
|                        | \$     |
| Goods at standard rate | 15,000 |
| Goods exempt from VAT  | 10,000 |

During the period GH purchased materials and services costing a total of \$12,075, including VAT at standard rate. These materials and services were used to produce standard rated goods and exempt goods.

Assume that GH had no other VAT related transactions in the period.

**Calculate** the net VAT due to/from GH for the VAT period.

**(2 marks)**

**1.6 Identify** TWO advantages of having an ethical code for accountants.

*(2 marks)*

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**1.7 Identify** any TWO responsibilities of the IFRS Foundation.

*(2 marks)*

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**1.8** The IASB's *Conceptual Framework for Financial Reporting (2010) (Framework)* identifies faithful representation as a fundamental qualitative characteristic of financial information.

Which ONE of the following is NOT a characteristic of faithful representation?

- A** Free from error
- B** Verifiable
- C** Neutral
- D** Complete

*(2 marks)*

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**1.9 Identify** TWO actions required under IAS 1 (*Revised*) *Presentation of Financial Statements* to ensure that "Financial statements shall present fairly the financial position, financial performance and cash flows of an entity."

*(2 marks)*

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**1.10** The IASB's Framework states that "materiality is an entity-specific aspect of relevance".

**Describe** the term "materiality" as used in the Framework.

*(2 marks)*

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*(Total for Section A = 20 marks)*

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### *Reminder*

**All** answers to Section A must be written in your answer book.  
Answers or notes to Section A written on the question paper will  
**not** be submitted for marking.

*End of Section A*

TURN OVER

## SECTION B – 30 MARKS

[You are advised to spend no longer than 9 minutes on each sub-question in this section.]

ANSWER ALL SIX SUB-QUESTIONS IN THIS SECTION – 5 MARKS EACH

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### Question Two

(a)

An investment in another entity's equity is classified as an investment in a subsidiary, if the investor can exercise control over the investee.

AB acquired 4,000 of the 10,000 equity voting shares and 8,000 of the 10,000 non-voting preference shares of CD.

AB acquired 4,000 of the 10,000 equity voting shares of EF and had a signed agreement giving it the power to appoint or remove all of the directors of EF.

*Required:*

**Explain** whether CD and/or EF should be classified as subsidiaries/a subsidiary of AB. You should refer to the provisions of IFRS 10 *Consolidated Financial Statements* in your answer.

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

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(b)

YZ purchased 100% of the equity shares in WX on 1 October 2012.

YZ and WX trade with each other. During the year ended 30 September 2013 YZ sold WX inventory at a sales price of \$28,000. YZ applied a mark up on cost of  $33\frac{1}{3}\%$ .

At 30 September 2013 WX still owed YZ \$10,000 of the cost and had remaining in inventory \$6,000 of the goods purchased from YZ.

*Required:*

**Prepare** the journal entries to make the required adjustment in YZ's consolidated financial statements for the year ended 30 September 2013 for the above.

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

(c)

UV purchased an asset for \$50,000 on 1 October 2009, incurring import duties of \$8,000. UV depreciated the asset at 10% per year on a straight line basis.

UV sold the asset for \$80,000 on 30 September 2013, incurring costs of \$2,000. The asset was subject to capital gains tax of 25% and the indexation factor from 1 October 2009 to 30 September 2013 was 14%.

*Required:*

(i) **Explain** the purpose of “indexation” when used in the calculation of capital gains tax. *(2 marks)*

(ii) **Calculate** the capital gains tax arising on the disposal of UV’s asset. *(3 marks)*

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

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(d)

TY is resident in Country X.

TY’s statement of profit or loss for year ended 30 September 2013 was as follows:

|                                     |                  |
|-------------------------------------|------------------|
|                                     | \$               |
| Revenue                             | 950,000          |
| Cost of sales                       | <u>(550,000)</u> |
| Gross profit                        | 400,000          |
| Administrative expenses             | (132,000)        |
| Taxes paid to other public bodies   | (1,900)          |
| Entertaining expenses               | (1,200)          |
| Depreciation of plant and equipment | (47,500)         |
| Distribution costs                  | <u>(42,000)</u>  |
|                                     | 175,400          |
| Finance cost                        | <u>(3,500)</u>   |
| Profit before tax                   | <u>171,900</u>   |

TY has accumulated tax losses of \$125,000 brought forward from 2011/12.

TY owns plant and equipment purchased on 1 October 2010 at a cost of \$385,000 and plant purchased on 1 October 2012 at a cost of \$90,000. TY charges depreciation at 10% per year on a straight line basis on all non-current assets.

*Required:*

**Calculate** the tax payable by TY for the year ended 30 September 2013.

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

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(e)

You are a trainee accountant working for JHG, which owns a number of subsidiary entities.

A new Chief Executive has recently been appointed and has raised the following queries:

- JHG is a member of a tax group. What is a tax group?
- What are the benefits to JHG and its subsidiaries of being in a tax group?

*Required:*

**Prepare** a short briefing note that answers the Chief Executive's questions.

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

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(f)

*Required:*

**Explain** the typical duties of an external auditor of an entity.

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

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*(Total for Section B = 30 marks)*

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*End of Section B*

*Section C starts on page 10*



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*Section C starts on page 10*

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## SECTION C – 50 MARKS

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

ANSWER *BOTH* QUESTIONS FROM THIS SECTION – 25 MARKS EACH

### Question Three

RDX's trial balance at 30 September 2013 is shown below:

|  | Notes  | \$000         | \$000         |
|--|--------|---------------|---------------|
| 5% Loan notes (issued 2010, redeemable 2020)                     | (ix)   |               | 1,480         |
| Administrative expenses  |        | 779           |               |
| Cash received on sale of equipment                               | (v)    |               | 23            |
| Cash and cash equivalents  |        | 207           |               |
| Cost of sales  |        | 4,080         |               |
| Distribution costs   |        | 650           |               |
| Equity dividend paid 1 February 2013                             | (vii)  | 335           |               |
| Income tax   | (ii)   | 24            |               |
| Inventory at 30 September 2013                                   | (i)    | 1,055         |               |
| Land and buildings at cost at 1 October 2012                     |        | 5,180         |               |
| Loan interest paid   |        | 37            |               |
| Equity shares \$1 each, fully paid at 1 October 2012             |        |               | 5,650         |
| RDX ordinary shares purchased                                    | (viii) | 135           |               |
| Plant and equipment at cost at 1 October 2012                    | (v)    | 4,520         |               |
| Provision for deferred tax at 1 October 2012                     | (iii)  |               | 282           |
| Provision for buildings depreciation at 1 October 2012           | (iv)   |               | 262           |
| Provision for plant and equipment depreciation at 1 October 2012 | (vi)   |               | 2,260         |
| Retained earnings at 1 October 2012                              |        |               | 1,990         |
| Sales revenue  |        |               | 6,780         |
| Share premium  |        |               | 565           |
| Trade payables   |        |               | 300           |
| Trade receivables  | (x)    | 2,590         |               |
|  |        | <u>19,592</u> | <u>19,592</u> |

#### Notes:

- (i) RDX has always valued its inventories using a manual system. On 1 October 2012 RDX purchased and installed a computerised inventory system and changed its inventory valuation method to the industry standard method.

The impact on inventory valuation due to the change in policy was calculated as:

Inventory value increase at 30 September 2012 by \$148,000.

Inventory value increase up to 30 September 2013 by \$210,000.

- (ii) The income tax balance in the trial balance is a result of the under provision for the year ended 30 September 2012.
- (iii) The tax due for the year ended 30 September 2013 is estimated at \$160,000 and the deferred tax provision should be decreased by \$30,000.
- (iv) Depreciation is charged on buildings using the straight line method at 3% per annum. The cost of land included in land and buildings is \$3,000,000. Buildings depreciation is treated as an administrative expense.
- (v) During the year RDX disposed of old equipment for \$23,000. The original cost of the equipment sold was \$57,000 and its book value at 30 September 2012 was \$6,000.

- (vi) Plant and equipment is depreciated at 20% per annum using the reducing balance method. Depreciation of plant and equipment is considered to be part of cost of sales. RDX's policy is to charge a full year's depreciation in the year of acquisition and no depreciation in the year of disposal.
- (vii) During the year RDX paid a dividend of \$335,000 for the year ended 30 September 2012.
- (viii) RDX purchased and cancelled 100,000 of its own equity shares on 30 September 2013 for \$135,000. These shares had originally been issued at a 10% premium.
- (ix) Long term borrowings consist of loan notes issued on 1 April 2010 at 5% interest per annum.
- (x) On 22 October 2013 RDX discovered that ZZZ, one of its customers, had gone into liquidation. RDX has been informed that it will receive none of the outstanding balance of \$230,000 at 30 September 2013.

*Required:*

- (a) **Explain** how the change in inventory accounting policy should be recorded in RDX's financial statements for the year ended 30 September 2013, in accordance with IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*.

*(3 marks)*

- (b) **Prepare** RDX's statement of profit or loss and statement of changes in equity for the year to 30 September 2013 AND the statement of financial position at that date, 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. Do NOT prepare a statement of accounting policies.*

*(22 marks)*

*(Total for Question Three = 25 marks)*

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*Section C continues on page 12*

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## Question Four

The financial statements of AWX for the year ended 31 March 2012 and 31 March 2013 are given below:

### AWX Statement of Financial Position as at:

|                                     | Notes    | 31 March 2013 |              | 31 March 2012 |              |
|-------------------------------------|----------|---------------|--------------|---------------|--------------|
|                                     |          | \$000         | \$000        | \$000         | \$000        |
| <b>Non-current Assets</b>           |          |               |              |               |              |
| Property, plant and equipment       | (i) (ii) | 4,191         |              | 4,500         |              |
| Intangible assets                   | (iv)     | <u>156</u>    |              | <u>315</u>    |              |
|                                     |          |               | 4,347        |               | 4,815        |
| <b>Current Assets</b>               |          |               |              |               |              |
| Inventories                         |          | 738           |              | 805           |              |
| Trade receivables                   |          | 564           |              | 480           |              |
| Cash and cash equivalents           |          | <u>515</u>    |              | <u>265</u>    |              |
|                                     |          |               | <u>1,817</u> |               | <u>1,550</u> |
| <b>Total Assets</b>                 |          |               | <u>6,164</u> |               | <u>6,365</u> |
| <b>Equity and Liabilities</b>       |          |               |              |               |              |
| Equity shares of \$1 each           |          | 2,180         |              | 2,180         |              |
| Preference shares                   | (v)      | 700           |              | --            |              |
| Share premium                       |          | 968           |              | 968           |              |
| Revaluation reserve                 |          | 469           |              | 353           |              |
| Retained earnings                   | (vii)    | <u>901</u>    |              | <u>727</u>    |              |
|                                     |          |               | 5,218        |               | 4,228        |
| <b>Non-current liabilities</b>      |          |               |              |               |              |
| 9% loan notes                       | (vi)     | -             |              | 1,100         |              |
| Deferred tax                        |          | <u>225</u>    |              | <u>220</u>    |              |
|                                     |          |               | 225          |               | 1,320        |
| <b>Current liabilities</b>          |          |               |              |               |              |
| Trade payables                      |          | 535           |              | 500           |              |
| Tax payable                         |          | 84            |              | 218           |              |
| Provisions                          |          | 90            |              | -             |              |
| Interest payable                    |          | <u>12</u>     |              | <u>99</u>     |              |
|                                     |          |               | <u>721</u>   |               | <u>817</u>   |
| <b>Total Equity and Liabilities</b> |          |               | <u>6,164</u> |               | <u>6,365</u> |

### Statement of Profit or Loss for the year ended 31 March 2013

|                         | Notes  | \$000          |
|-------------------------|--------|----------------|
| Revenue                 |        | 6,858          |
| Cost of sales           | (iii)  | <u>(3,552)</u> |
| Gross profit            |        | 3,306          |
| Administrative expenses | (viii) | <u>(2,042)</u> |
| Distribution costs      |        | <u>(816)</u>   |
|                         |        | 448            |
| Finance cost            |        | <u>(40)</u>    |
|                         |        | 408            |
| Income tax expense      |        | <u>(124)</u>   |
| Profit for the year     |        | <u>284</u>     |

**Notes:**

- (i) Property, plant and equipment includes properties which were revalued upwards during the year.
- (ii) Property, plant and equipment disposed of in the year had a net book value of \$70,000; cash received on their disposal was \$92,000.
- (iii) Depreciation charged for the year was \$675,000.
- (iv) There were no additions or disposals of intangible assets during the year.
- (v) On 1 April 2012, AWX issued 700,000 5% cumulative \$1 preference shares at par, redeemable at 10% premium on 1 April 2022. Issue costs of \$50,000 have been paid by AWX and included in administrative expenses. The effective rate of interest is 6.74%. The cash received for the issue of the preference shares has been debited to cash and credited to equity.
- (vi) On 1 May 2012, AWX purchased and cancelled all its 9% loan notes at par plus accrued interest (included in finance costs).
- (vii) Equity dividends paid during the year were \$75,000 and preference share dividends paid were \$35,000.
- (viii) AWX has been advised that it is probably going to lose a court case and at 31 March 2013 has provided \$90,000 for the estimated cost of this case.

**Required:**

- (a) (i) **Explain** how AWX should treat its preference shares in its financial statements for the year ended 31 March 2013 according to IAS 32 *Financial Instruments: Presentation* AND,
- (ii) **Calculate** AWX's revised profit before tax for the year ended 31 March 2013 in accordance with IAS 39 *Financial Instruments: Recognition and Measurement*.

(6 marks)

- (b) **Prepare** AWX's Statement of cash flows, using the indirect method, for the year ended 31 March 2013 in accordance with IAS 7 *Statement of Cash Flows*.

(19 marks)

*Notes to the financial statements are not required, but all workings must be clearly shown.*

**(Total for Question Four = 25 marks)**

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**(Total for Section C = 50 marks)**

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*End of Question Paper*

*Maths Tables and Formulae are on Pages 17 and 18*

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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<br>(n) | Interest rates (r) |       |       |       |       |       |       |       |       |       |
|----------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | 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<br>(n) | Interest rates (r) |       |       |       |       |       |       |       |       |       |
|----------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | 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<br>( $n$ ) | Interest rates ( $r$ ) |        |        |        |        |        |        |       |       |       |
|--------------------|------------------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
|                    | 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<br>( $n$ ) | Interest rates ( $r$ ) |       |       |       |       |       |       |       |       |       |
|--------------------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    | 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 | 4.793 | 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

### Annuity

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

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

### Perpetuity

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

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

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

*Financial Pillar*

*Operational Level Paper*

*F1 – Financial Operations*

*November 2013*

*Thursday Morning Session*