## CIMA

Financial Pillar

## F1 - Financial Operations

## 20 November 2014 - Thursday Morning Session

## Instructions to candidates



## Relevant Tax Rules for Years Ended 31 March 2007 to 2015

## 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:
o $50 \%$ of additions to property, plant and equipment in the accounting period in which they are recorded;
o $25 \%$ 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;
o 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

## 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 The effective incidence of a tax is:

A the date the tax is actually paid.
B the person or entity that finally bears the cost of the tax.
C the date the tax assessment is issued.
D the person or entity paying the tax authority.
(2 marks)
1.2 BH purchased 250 items of a product from a foreign entity and imported them into Country $X$. On import, the products were subject to an excise duty of $\$ 8$ per item and standard rate VAT on cost, including the excise duty.

BH purchased the items for \$45 each and after importing them sold all of the items for $\$ 65$ each plus VAT at standard rate.

How much is due to be paid by BH to the tax authorities in total for these transactions?
A $\$ 450$
B $\$ 2,450$
C $\quad \$ 2,750$
D $\$ 3,988$
1.3 Define the term "tax evasion".
1.4 List TWO of the three main tax bases used in developed countries.
1.5 Tax authorities are generally given powers to ensure the right amount of tax is paid when due. Which ONE of the following powers is a tax authority least likely to have granted to it?

A Power to examine records of previous periods
B Power of entry and search
C Power of arrest
D Power to give information to other countries' tax authorities

### 1.6 Which ONE of the following best describes a role of the IFRS Foundation?

A Prepares and publishes exposure drafts
B Provides the IASB with views of its members relating to current discussion documents
C Promotes the IASB, its work and the use of IFRS
D Clarifies issues where conflicting interpretations have developed
1.7 At its financial year end HX has an outstanding legal action against it by a large multinational entity. It is highly probable that the legal action will be successful and HX will have to pay substantial damages. HX has refused to provide for these damages. In the opinion of the auditor, failure to make this provision means that the financial statements are seriously misleading.

What type of audit report will be issued in this situation?
A A modified report with an adverse opinion
B An unmodified report with an emphasis of matter paragraph
C A modified report with a disclaimer of opinion
D A modified report with a qualified opinion
1.8 According to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, which ONE of the following is a change in accounting policy?

A The depreciation method of vehicles being changed from straight line to reducing balance.
B The provision for warranty claims being recalculated using a different method.
C Recognising a provision for a legal claim which had been disclosed as a contingent liability in the previous year's financial statements.
D Presenting depreciation in cost of sales which had previously been presented in administrative expenses.
(2 marks)

## 1.9

PH purchased 100,000 of its own $\$ 1$ equity shares on the stock market for $\$ 105,000$. PH classified the shares as "treasury shares". PH still held the treasury shares at the year end.

How should PH present the treasury shares according to IAS 32 Financial Instruments, Presentation?

A As a non-current asset investment \$100,000
B As a non-current asset investment \$105,000
C As a deduction from equity $\$ 100,000$
D As a deduction from equity $\$ 105,000$
1.10 Which ONE of the following would NOT automatically be regarded as a related party of WQ by IAS 24 Related Party Disclosures?

A QZ, a subsidiary of WQ, that does not trade with WQ
B $\quad$ A close relative of a director of WQ
C $\quad \mathrm{ABC}, \mathrm{WQ}$ 's main banker
D WQ's employee pension fund
(2 marks)
(Total for Section A = 20 marks)

## 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

[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

## Question Two

## (a)

ALZ had the following balances on its non-current asset accounts at:

|  | 31 March 2014 | 31 March 2013 |
| :--- | :---: | :---: |
| Tangible assets: | $\$ 000$ | $\$ 000$ |
| Property, plant and equipment <br> Intangible assets: <br> Deferred development expenditure | 27,660 | 28,000 |
|  | 370 | 290 |

ALZ recorded the following movements of its non-current assets for the year to 31 March 2014:

Property, plant and equipment was revalued upwards by $\$ 3,000,000$.
Property, plant and equipment disposed of during the year had a carrying value of \$95,000 and incurred a loss on disposal of $\$ 23,000$.
Property, plant and equipment depreciation charged to profit or loss during the year was $\$ 4,055,000$.

Deferred development expenditure amortised during the year was \$73,000

## Required:

Prepare the "cash flows from investing activities" section of ALZ's statement of cash flows for the year ended 31 March 2014.
(Total for sub-question (a) = 5 marks)

## (b)

CXV was incorporated in Country $Y$ many years ago. It has reduced its operations in Country $Y$ but still has its registered office in Country $Y$ and carries out a small proportion (less than $15 \%$ ) of its trade there.

CXV buys most of its products and raw materials from Country Z and also generates $75 \%$ of its revenue in Country $Z$.

The remaining 10\% of revenue is generated in Country X. All CXV's senior management live in Country X and hold all the management board meetings there.

## Required:

Explain, for corporate income tax purposes:
(i) why it is important to determine corporate residence.
(ii) the country of residence of CXV.
(3 marks)
(Total for sub-question (b) = 5 marks)

## (c)

An ethical dilemma exists when one or more of the five fundamental principles that form the basis of the CIMA code of ethics are threatened.

## Required:

(i) Describe two of the five fundamental principles of ethical behaviour contained in the code.
(ii) Explain how an accountant should resolve an ethical dilemma.
(Total for sub-question (c) = 5 marks)

## (d)

## Required:

Explain the four enhancing qualitative characteristics of financial information identified in the IASB's Conceptual Framework for Financial Reporting (2010).
(Total for sub-question (d) = 5 marks)

## (e)

YT commenced business in Country X on 1 October 2012 and, on that date, it acquired property, plant and equipment for $\$ 440,000$. YT uses the straight line method of depreciation. The estimated useful life of the assets was five years with no residual value. YT's accounting year end is 30 September.

All the assets acquired qualified for a first year tax allowance and then an annual tax allowance.

On 1 October 2013, YT revalued all of its property, plant and equipment. This revaluation resulted in an increase in asset values of $\$ 100,000$.

## Required:

(i) Explain why YT's revaluation of its assets would cause a temporary difference as defined by IAS 12 Income Taxes.
(2 marks)
(ii) Calculate the amount of the deferred tax provision that $Y T$ should include in its statement of financial position as at 30 September 2014, in accordance with IAS 12 Income Taxes.
(Total for sub-question (e) = 5 marks)

## (f)

MX is resident in Country X for tax purposes.
Part of MX's plant and equipment was purchased on 1 October 2012 at a cost of $\$ 112,000$ and the remainder was purchased on 1 October 2013 at a cost of $\$ 188,000$. MX depreciates all its plant and equipment on the straight line basis at 20\% per annum.

For the year ended 30 September 2014 MX's profit before tax was $\$ 291,100$.
MX's expenses included entertaining \$22,120; staff travel and subsistence \$41,300 and donations to political parties of $\$ 9,440$.

## Required:

Calculate the tax payable by MX for the year ended 30 September 2014.
(Total for sub-question (f) = 5 marks)
(Total for Section B = 30 marks)

## End of Section B. Section C starts on page 10

## Turn over for Section C

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

TYV is a manufacturing entity and produces a range of products in several factories.
TYV's trial balance at 30 September 2014 is shown below:

|  | Notes | \$000 | \$000 |
| :---: | :---: | :---: | :---: |
| Accumulated depreciation at 30 September 2013: |  |  |  |
| Buildings | (i) |  | 1,700 |
| Plant and equipment | (iv) |  | 4,510 |
| Administrative expenses |  | 1,820 |  |
| Cash and cash equivalents |  | 272 |  |
| Cost of sales |  | 10,200 |  |
| Distribution costs |  | 1,110 |  |
| Equity dividend paid |  | 350 |  |
| Equity shares \$1 each, fully paid at 30 September 2014 |  |  | 6,000 |
| Finance charges for new factory building |  | 113 |  |
| Income tax | (v) | 80 |  |
| Inventory at 30 September 2014 |  | 575 |  |
| Land and buildings at cost at 30 September 2013 | (ii)\&(iii) | 17,386 |  |
| Long term borrowings | (vi) |  | 5,000 |
| Long term borrowings loan interest | (vi) | 233 |  |
| New factory building cost |  | 1,014 |  |
| Plant and equipment at cost at 30 September 2013 | (iv) | 7,750 |  |
| Provision for deferred tax at 30 September 2013 | (v) |  | 625 |
| Receipt from disposal of plant and equipment | (iv) |  | 7 |
| Retained earnings at 30 September 2013 |  |  | 491 |
| Sales revenue |  |  | 19,460 |
| Share premium at 30 September 2014 |  |  | 850 |
| Short term loan | (iii) |  | 1,500 |
| Suspense account | (ii) |  | 1,130 |
| Trade payables |  |  | 1,880 |
| Trade receivables |  | 2,250 |  |
|  |  | 43,153 | 43,153 |

## Notes:

(i) On 1 October 2013 two of TYV's factories, factory A and factory B, were deemed obsolete and no longer suitable for TYV's use. On 1 June 2014 both factories were closed and production moved to a new facility. TYV disposed of factory B with all legal formalities completed and cash received on 31 August 2014. Factory A was not sold by the financial year end, however at 30 September 2014 negotiations for the sale of factory A were well advanced and TYV's management expected to conclude the sale by 31 December 2014. The cost and accumulated depreciation included in land and buildings along with the fair value of each factory is shown below:

| Factory | Cost | Buildings | Depreciation <br> at 30 September 2013 | Fair value less <br> cost of disposal <br> at 30 Sept. 2014 |
| :--- | :--- | :--- | :--- | :--- |
| A | $\$ 1,375,000$ | $\$ 455,000$ | $\$ 364,000$ | $\$ 1,420,000$ |
| B | $\$ 1,120,000$ | $\$ 325,000$ | $\$ 286,000$ | $\$ 1,130,000$ |

(ii) The suspense account is the cash received from the disposal of factory B. The only entries made in the ledgers for this item was in cash and cash equivalents and suspense account.
(iii) The cost of land included in land and buildings was \$11,000,000 on 1 October 2013. TYV built the new factory on land it already owned, commencing on 1 October 2013 and completing it on 30 June 2014. To fund the project TYV raised a short term loan on 1 October 2013, repayable on 30 September 2015.
(iv) Plant and equipment in factories $A$ and $B$ was relocated to the new factory, except for plant and equipment with a carrying value of $\$ 55,000$ (cost $\$ 175,000$ ) that was sold as scrap, realising $\$ 7,000$. Buildings are depreciated at $2 \%$ per annum on the straight line basis. Buildings depreciation is treated as an administrative expense. Plant and equipment is depreciated at $25 \%$ per annum using the reducing balance method and is charged to cost of sales. TYV's accounting policy for depreciation is to charge a full year in the year of acquisition and none in the year of disposal.
(v) The director estimate the income tax charge on the year's profits at $\$ 940,000$. The balance on the income tax account represents the under-provision for the previous year's tax charge. The deferred tax provision is to be reduced by $\$ 49,000$.
(vi) The long term borrowings consist of one loan issued in 2000 for 20 years at $7 \%$ interest per year. Interest is paid half yearly on 1 June and 1 December.

## Required:

Prepare TYV's statement of profit or loss and a statement of changes in equity for the year ended 30 September 2014 and a statement of financial position at that date, in accordance with the requirements of international financial reporting standards. (All workings should be to the nearest $\$ 000$ ).

Notes to the financial statements are not required but all workings must be clearly shown. Do not prepare a statement of accounting policies.
(Total for Question Three = 25 marks)

## Section C continues on page 12

## Question Four

The draft statements of financial position at 30 September 2014 and statements of profit or loss for the year ended 30 September 2014 for three entities, HC, SU and AS are given below:

Statements of Financial Position as at 30 September 2014:

|  | Notes | HC | SU | AS |
| :---: | :---: | :---: | :---: | :---: |
|  |  | \$000 | \$000 | \$000 |
| Non-current Assets |  |  |  |  |
| Property, plant and equipment |  | 2,192 | 920 | 684 |
| Investments: | (i) |  |  |  |
| Loan to SU | (iii) | 250 | 0 | 0 |
| Investment in AS | (ii) | 384 | 0 | 0 |
|  |  | 2,826 | $\underline{920}$ | 684 |
| Current Assets |  |  |  |  |
| Inventory | (iv) | 1,810 | 782 | 52 |
| Trade and other receivables |  | 2,292 | 686 | 57 |
| Cash and cash equivalents | (iv) | 113 | 70 | 19 |
|  |  | 4,215 | 1,538 | 128 |
| Total Assets |  | 7,041 | 2,458 | 812 |
| Equity and Liabilities |  |  |  |  |
| Equity |  |  |  |  |
| Equity shares of \$1 each |  | 5,520 | 720 | 320 |
| Retained earnings |  | 796 | 457 | 229 |
|  |  | 6,316 | 1,177 | 549 |
| Non-current liabilities |  |  |  |  |
| Long term loans | (iii) | 0 | 650 | 0 |
| Current liabilities |  |  |  |  |
| Payables and accruals |  | 725 | 631 | 263 |
| Total Equity and Liabilities |  | 7,041 | 2,458 | 812 |

Statements of profit or loss for the year ended 30 September 2014

|  | $H C$ | SU | AS |
| :--- | ---: | ---: | ---: |
|  | $\$ 000$ | $\$ 000$ | $\$ 000$ |
| Revenue | 1,925 | 480 | 285 |
| Cost of sales | $(925)$ | $\underline{(230)}$ | $\underline{(119)}$ |
| Gross profit | 1,000 | 166 |  |
| Expenses | $\frac{(240)}{760}$ | $\underline{(54)}$ | $\underline{(42)}$ |
|  | 250 | 124 |  |
| Interest received | 25 | 0 | 0 |
| Finance cost | $\underline{(27)}$ | $\underline{(45)}$ | $\underline{0}$ |
| Income tax expense | $\underline{(147)}$ | $\underline{151}$ | 124 |
| Profit for the year | $\underline{(38)}$ | $\underline{(27)}$ |  |
|  | $\underline{113}$ | $\underline{97}$ |  |

## Notes:

(i) HC acquired all of SU's equity shares on 1 October 2013 by issuing 600,000 new HC shares. The agreed purchase consideration was $\$ 1,356,000$, however HC has not yet recorded the acquisition in its accounting records. SU's retained earnings were $\$ 319,000$ on 1 October 2013. The fair value of SU's property, plant and equipment on 1 October 2013 exceeded its carrying value by $\$ 231,000$. The excess of fair value over carrying value was attributed to buildings owned by SU. At the date of acquisition these buildings had a remaining useful life of 21 years. HC's accounting policy is to depreciate buildings using the straight line basis with no residual value. HC carried out an impairment review of goodwill arising on acquisition of SU and found that as at 30 September 2014 the goodwill had been impaired by 15\%.
(ii) HC purchased 96,000 $\$ 1$ equity shares in AS on 1 October 2013 for $\$ 384,000$ when AS's retained earnings were $\$ 132,000$. The fair value of AS's net assets was the same as its carrying value at that date. HC exercises significant influence over all aspects of AS's financial and operating policies.
(iii) On 1 October 2013 HC advanced SU a 10 year loan of $\$ 250,000$ at 10\% interest per year. SU paid the interest due on 25 September 2014.
(iv) HC occasionally trades with SU. During September 2014 HC sold SU goods for $\$ 170,000$. HC uses a mark-up of $25 \%$ on cost. At 30 September 2014 $50 \%$ of the goods remained in SU's inventory. SU paid $\$ 90,000$ to HC on 29 September 2014. HC did not receive the payment until 2 October 2014.

## Required:

(a) Prepare the journal entry to record the purchase of SU in HC 's accounting records.
(b) Prepare the consolidated statement of profit or loss for HC for the year ended 30 September 2014 AND a consolidated statement of financial position for HC as at 30 September 2014, in accordance with the requirements of International Financial Reporting Standards.
(22 marks)
Notes to the financial statements are not required, but all workings must be clearly shown.
(Total for Question Four = 25 marks)

End of Question Paper<br>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:

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

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

$$
P V=\frac{1}{r}
$$

## 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

| Level 1 - KNOWLEDGE <br> What you are expected to know. |  |  |
| :--- | :--- | :--- |
|  | List | Make a list of |
| Level $\mathbf{2}$ - COMPREHENSION |  |  |
| What you are expected to understand. | Define | Express, fully or clearly, the details/facts of |
| Give the exact meaning of |  |  |

## Financial Pillar

## Operational Level Paper

## F1 - Financial Operations

## November 2014

Thursday Morning Session

