



# Singapore CA Qualification (Foundation) Examination 21 June 2023 Principles of Financial Reporting

## **INSTRUCTIONS TO CANDIDATES:**

- 1. The time allowed for this examination paper is **3 hours 15 minutes**.
- 2. This examination paper has **FOUR (4)** questions and comprises **SIXTEEN (16)** pages (including this instruction sheet, Appendix A and Appendix B). Each question may have **MULTIPLE** parts and **ALL** questions are examinable.
- 3. This is a restricted open book examination. You are allowed to have only the following materials with you at your exam location:
  - One A4-sized double-sided cheat sheet
  - One A4-sized double-sided blank scratch paper
- 4. During the examination, you are allowed to use your laptop and any calculators that comply with the ACRA's regulations. Please note that watches, mobile phones, tablets, and all other electronic devices **MUST NOT** be used during the examination.
- 5. During the examination, videos of you and your computer screen will be recorded for the purpose of ensuring examination integrity and you have consented to these recordings.
- 6. This examination paper and all video recordings of this exam are the property of the Accounting and Corporate Regulatory Authority.





#### **MODULE-SPECIFIC INSTRUCTIONS:**

- 7. Assume that all dollar amounts are in Singapore dollar (S\$) unless otherwise stated.
- 8. Unless specified otherwise, assume that all the reporting entities in all the questions adopt, for all the relevant years, the Singapore Financial Reporting Standards (International) (SFRS(I)) that were issued by the Accounting Standards Council as at 1 January 2023.
- 9. Present all Journal Entries in the following format:

Transaction date

DR Account Name xxx

CR Account Name xxx

(Narration or journal title)

#### **IMPORTANT NOTICE:**

If you are not feeling well, please do not press "Start Assessment". If you have started and leave during the exam, you would be deemed to have attempted the paper.

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# \*\*VERY IMPORTANT NOTICE\*\*

1. Your question paper is attached under the "Resource" tab found at the bottom right of **EACH** question.

# Other important information:

- 2. You will **only be allowed** to access the Excel function from your computer.
- 3. You are **NOT ALLOWED** to access any websites or reference materials (except for your A4 sized double sided cheat sheet) during the exam.
- 4. You are **NOT ALLOWED** to print the question paper.
- 5. Please take note that your screen will be monitored throughout the examination. If you are found to have accessed unauthorised materials or websites, or if you cheat or attempt to cheat, you will be liable to severe disciplinary action.

Should you encounter any issues during the exam, please call the following number:

+65 6100 0518

6. You do not need to fill in an answer for this question.

# Question 1 – (a) and (b)

The CFO of Company Newton provided you the following financial statements.

| Statement of Comprehensive Income              |              |  |  |  |  |
|--|--------------|--|--|--|--|
| for the financial year ending 31 December 2022 |              |  |  |  |  |
|  | \$ ('000)    |  |  |  |  |
| Sales revenues                                 | 85,600       |  |  |  |  |
| Cost of goods sold                             | (67,200)     |  |  |  |  |
| Gross profit                                   | 18,400       |  |  |  |  |
| Depreciation expense                           | (1,800)      |  |  |  |  |
| Impairment loss                                | (450)        |  |  |  |  |
| Other operating expenses                       | (12,600)     |  |  |  |  |
| Profit before tax                              | 3,550        |  |  |  |  |
| Tax expense                                    | <u>(550)</u> |  |  |  |  |
| Profit after tax                               | 3,000        |  |  |  |  |
| Fair value gains on FVOCI equity investment    | <u>400</u>   |  |  |  |  |
| Total comprehensive income                     | <u>3,400</u> |  |  |  |  |

| Statement of Financial Position for the financial year ending |                  |                  |  |  |  |  |
|---|------------------|------------------|--|--|--|--|
|   | 31 December 2022 | 31 December 2021 |  |  |  |  |
|   | \$ ('000)        | \$ ('000)        |  |  |  |  |
| Cash  | 1,900            | 1,300            |  |  |  |  |
| Inventory   | 8,000            | 7,500            |  |  |  |  |
| Accounts receivable   | 4,500            | 4,800            |  |  |  |  |
| FVOCI equity investments                                      | 7,000            | 7,600            |  |  |  |  |
| Property plant and equipment (net of                          | 23,100           | 20,700           |  |  |  |  |
| accumulated depreciation)                                     |                  |                  |  |  |  |  |
| Total Assets  | 44,500           | <u>41,900</u>    |  |  |  |  |
|   |                  |                  |  |  |  |  |
| Accounts payable  | 3,400            | 3,600            |  |  |  |  |
| Other payables  | 2,300            | 2,700            |  |  |  |  |
| Provisions  | 1,300            | 1,000            |  |  |  |  |

| Bank Loan payable                | 9,000         | <u>7,500</u>  |
|----------------------------------|---------------|---------------|
| Total Liabilities                | <u>16,000</u> | <u>14,800</u> |
|                                  |               |               |
| Share capital                    | 10,000        | 10,000        |
| Retained earnings                | 17,100        | 16,100        |
| Fair value gains on FVOCI equity | 1,400         | <u>1,000</u>  |
| investments                      |               |               |
| Total Shareholder's Equity       | 28,500        | <u>27,100</u> |

#### Additional information:

- 1. Impairment loss arose from inventory.
- 2. Newton made acquisitions of \$4.2 million in leasehold property, with \$2.2 million funded by increase in bank loan payable. The latter is the only new loan for the year.
- 3. Newton disposed of \$1.5 million in FVOCI equity investments at the same price on 1 January 2022 and made further purchases during the year 2022. Newton does not reclassify the fair value gain on disposal of FVOCI equity investments.
- 4. Other payables include tax payables of \$350 and \$230 on 31 December 2022 and 31 December 2021 respectively.

#### **Question 1 required:**

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(a) Prepare statement of cash flows for the year ending 31 December 2022. Ignore the accounting changes in **part** (b), as the financial statements have been appropriately adjusted.

(21 marks)

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- **(b)** Explain each type of accounting change. Determine the disclosures to be made on the following accounting changes, including where appropriate the effects on financial statements.
  - (i) Accounting for inventory was changed from FIFO (First-in First-out) used in 2021 to weighted-average costing method in the year 2022. The inventory balance of \$7.5 million on 31 December 2021 was based on comparable weighted-average costing method. The 31 December 2021 balance reported in 2021 based on FIFO method had been \$7.2 million.
  - (ii) Correction was made to patent cost of \$48,000 erroneously recognised in expense in year 2021.

(7 marks)

(Total: 28 marks)

#### Question 2 - Part I and Part II

## Part I

Company Novena sells and develops a range of software systems to its customers. On 1 April 2022, Customer Tampines purchased software system named MARS in customer management and requested Novena to provide maintenance support for the system for six months from 1 April 2022 to 30 September 2022. Novena delivered the MARS system and sent Tampines the invoice with 60 days credit term on 15 April 2022. Novena provided the maintenance support evenly through the six months. The purchase price for MARS is \$30,000 to be paid on 15 June 2022 with an interest cost of 5% per annum. The fee for maintenance support is \$6,000 per month for the sixmonth period payable and cash settled at the end of each month.

On 1 April 2022, Customer Tampines also purchased access to Novena's social media platform named JUPITER for marketing the products of Tampines for a period of six months. There are two components to the marketing fees:

- (1) Fee that is \$0.04 per view on the platform payable and cash settled at the end of each month. The number of views were 15,000, and 25,000 for the months of April 2022 and May 2022 respectively.
- (2) Additional fees payable and cash settled at the end of six-month period as follows:

| Total number of views for period | Additional fees |
|----------------------------------|-----------------|
| >180,000                         | \$6,000         |
| >150,000 and <=180,000           | \$3,000         |

The probabilities of meeting the thresholds at the end of the period are as follows and Company Novena uses the expected value method for revenue recognition.

| Probabilities at end of month | 6-month views <= 150,000 | 6-month views > 150,000, <=180,000 | 6-month views > 180,000 |
|-------------------------------|--------------------------|------------------------------------|-------------------------|
| April 2022                    | 0.70                     | 0.20                               | 0.10                    |
| May 2022                      | 0.60                     | 0.30                               | 0.10                    |

Ignore tax and GST (goods and services tax) effects.

| e-Exam<br>Question<br>Number | Question 2 Part I required:  |
|------------------------------|--|
| 4                            | <ul><li>(a) Prepare journal entries on Company Novena's ledger in relation to the above transactions for April 2022 and May 2022.</li><li>(12 marks)</li></ul> |

#### Part II

Company Bartley's financial controller faced the following situations on 31 December 2022.

- a) The operations manager found defects in its products on 15 December 2022 and estimated inventory write-downs of \$120,000.
- b) The CEO announced a 5% cut in the company's workforce with no details on the business and employees to be laid off. The CEO gave a rough estimate of the retrenchment pay-outs to be \$100,000.

Company Bartley's financial statements would be issued on 21 March 2023. After the issue date, on 10 April 2023, the operations manager re-assessed inventory writedowns from product defects to be \$135,000.

On 1 March 2023, the CEO announced further details on the retrenchment plan, including the businesses and functions affected and the names of employees to be laid off. The retrenchment package was one month pay for every year of service capped at maximum of 6 months pay. Based on the details, the retrenchment pay-out was calculated at about \$140,000.

You are a junior accountant on a contract with Company Bartley. The financial controller instructed you to make additional provisions on both inventory write-downs and retrenchment pay-outs, on top of the estimates above. Her rationale is that this is to be conservative and would help the company exhibit growth in net profits in the year 2023. The financial controller further indicated that whether you carry out her instruction is a factor to consider if your contract would be renewed.

## **Question 2 Part II required:**

5

(a) Explain the indicators of impairment in general. Separately, explain why net realisable value for inventory may not equal fair value less costs to sell.(3 marks)

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- **(b) (i)** On 31 December 2022, explain if any journal entry were required for inventory write-down and state the journal entry if required.
- **(b) (ii)** Explain why the re-assessment of inventory write-down should or should not be adjusted on 10 April 2023, and the journal entry if adjustment were required.

(4 marks)

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- **(c) (i)** On 31 December 2022, explain if any journal entry were required for retrenchment pay-out and state the journal entry if required.
- (c) (ii) Explain why the CEO announcement on 1 March 2023 should or should not be adjusted, and the journal entry if adjustment were required.

(4 marks)

8

(d) Assess the ethical dilemma position you face arising from the instruction by the financial controller. Recommend an appropriate course of action in the face of the ethical dilemma. Explain the potential consequences of not upholding ethical principles.
(3 marks)

(Total: 26 marks)

#### Question 3 - Part I and Part II

### Part I

Company Raffles is a trading company based in Singapore with 60% of its sales revenues generated from overseas and 40% generated locally in Singapore. Of its overseas sales, half are generated from the Malaysian market and half are generated from Thailand. Company Raffles' costs are substantially in Singapore dollars. Company Raffles also obtained its funding in Singapore dollars.

# e-Exam Question Number

# **Question 3 Part I required:**

9

(a) Explain the factors to consider in determining the functional currency of Company Raffles, using supporting facts from the question.(4 marks)

#### Part II

Assume the functional currency of Company Raffles is Singapore dollars. Company Raffles purchased US dollar FVOCI (fair value through other comprehensive income) equity investment in Blueberry Inc. of USD200,000 on 1 January 2022. The fair value of the FVOCI equity investment was USD210,000 on 31 January 2022.

Company Raffles made fee revenues of MYR300,000 for January 2022. Assume 80% of the revenues are on credit, and the remaining 20% are cash sales. There is one month lag in collection of accounts receivable. For example, January 2022 accounts receivable are collected on 28 February 2022. The 1 January 2022 opening balance accounts receivable of MYR100,000 was collected on 31 January 2022.

Company Raffles incurred operating expenses of MYR200,000 for January 2022. Assume 70% of the expenses are incurred on credit, and the remaining 30% are cash sales. There is one month lag in payment of accounts payable. The 1 January 2022 opening balance accounts payable of MYR90,000 was collected on 31 January 2022.

On 1 January 2022 Company Raffles issued bonds of USD100,000 to partially fund the FVOCI equity investments. The bonds issued at par were classified at amortised cost. The coupon rate of the bond investments was 5% per annum payable quarterly with first payment on 31 March 2022.

The foreign exchange rates are as follows.

|                                  | 1 USD to SGD | 1 MYR to SGD |
|----------------------------------|--------------|--------------|
| 31 December 2021/ 1 January 2022 | 1.3577       | 0.3238       |
| 31 January 2022                  | 1.3295       | 0.3236       |
| Average January 2022             | 1.3507       | 0.3237       |

Company Raffles held cash balances of USD1,000,000 and MYR2,000,000 on 1 January 2022. Ignore taxes and transaction costs.

# **Question 3 Part II required:**

10

(a) Record journal entries for the month of January 2022 in the functional currency of Company Raffles. Journal entries for foreign exchange gains and losses on monetary assets and monetary liabilities should be recorded at month end.

(26 marks)

(Total: 30 marks)

# Question 4 – (a) and (b)

Company Pagar manufactured a piece of equipment at cost of \$68,000 and useful life of five years on 1 July 2022. Company Pagar leases the equipment to Company Tanjong on 1 July 2022. The lease term is over four years with annual lease payments of \$20,000 on 30 June, with the first payment on 30 June 2023. At the end of four years, Company Tanjong needs to return the equipment to Company Pagar. There is zero guaranteed residual value. The implicit return on the lease known to both companies is 4% per year.

Company Tanjong uses the equipment in its business from 1 July 2022 to 31 December 2022.

Both Company Pagar and Company Tanjong prepare financial statements on 31 December.

| e-Exam<br>Question<br>Number | Que | estion 4 required:  |
|------------------------------|-----|---|
| 11                           | (a) | Record the journal entries for Company Pagar and Company Tanjong for the period 1 July 2022 to 31 December 2022.  (11 marks)  |
| 12                           | (b) | Explain the measurement bases allowed under SFRS(I) for equipment and financial liabilities. For each measurement basis, state the condition when this basis could be used. |
|                              |     | (5 marks)   |
|                              |     | (Total: 16 marks)   |
|                              |     |   |
|                              |     | END OF PAPER  |

# Appendix A - Common verbs used by the Examiners

| Verb              | Description  |
|-------------------|--|
| Assess            | Make a judgment about the value, quality, outcomes, results, or size. Often there will be a qualifier in the instruction, which will tell you exactly what to <b>assess</b> . For instance, " <b>Assess</b> the <u>adequacy</u> of the disclosures in the financial statements relating to". Professional judgment and scepticism (a questioning mind) are called for when making an <b>assessment</b> . <b>Appraise</b> and <b>Assess</b> are interchangeable.    |
| Determine         | Ascertain or <b>conclude</b> after <b>analysis</b> and <b>evaluation</b> the most appropriate course of action or most correct answer from a range of viable alternatives.   |
| Explain           | <b>Explain</b> requires you to write at least several sentences conveying how you have <b>analysed</b> the information in a way that a layperson can easily understand the concept or grasp the technical issue at hand.   |
| Prepare / Present | <b>Prepare</b> (or <b>present</b> ) requires you to produce your answer using a specific format. For instance, " <b>Present</b> an extract of the notes to the accounts for" or " <b>Prepare</b> all the relevant journal entries for". Remember, a journal is only complete if it shows the date of the entry, the correct accounts, the correct amounts, and has a description (narration) – easy marks are often thrown away through carelessness.              |
| Record            | <b>Record</b> is similar to <b>prepare</b> in that you may need to perform a calculation and show the specific components in an appropriate format.  |
| Recommend         | Make a statement about the most appropriate course of action. If there is more than one possible course of action, <b>state</b> which action you would choose and why ( <b>justify</b> your choice). Your professional judgment and your ability to <b>interpret</b> the wider situation are critical to scoring well in these types of questions. Don't forget to think about the future and the past, not just the present when making a <b>recommendation</b> . |
| State             | State is similar to <b>list</b> , but the items require your professional judgement. For instance, " <b>State</b> any restrictions that apply". One of the easiest ways to make sure that you <b>state</b> comprehensively is to think, " <b>list</b> <u>and</u> <b>justify</b> ". You will note that <b>state</b> appears in many of the verb descriptions given.   |

# **Appendix B - Future Value and Present Value Tables**

| Р                                      | resent va  | alue inte  | rest fac  | tor of \$1  | per pe  | riod at i   | % for n p   | periods (  | (T), PVIF  | (i,n).   |
|--|--|--|---|---|---|---|---|--|--|--|
| T                                      | 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  |
|  |  |  |   |   |   |   |   |  |  |  |
| F                                      | uture va   | lue inte   | rest fact   | or of \$1   | per per   | iod at i%   | 6 for n p   | eriods (   | T), FVIF(  | (i,n).   |
| T                                      | 1%   | 2%   | 3%  | 4%  | 5%  | 6%  | 7%  | 8%   | 9%   | 10%  |
| 1                                      | 1.010  | 1.020  | 1.030   | 1.040   | 1.050   | 1.060   | 1.070   | 1.080  | 1.090  | 1.100  |
| 2                                      | 1.020  | 1.040  | 1.061   | 1.082   | 1.103   | 1.124   | 1.145   | 1.166  | 1.188  | 1.210  |
| 3                                      | 1.030  | 1.061  | 1.093   | 1.125   | 1.158   | 1.191   | 1.225   | 1.260  | 1.295  | 1.331  |
| 4                                      | 1.041  | 1.082  | 1.126   | 1.170   | 1.216   | 1.262   | 1.311   | 1.360  | 1.412  | 1.464  |
| 5                                      | 1.051  | 1.104  | 1.159   | 1.217   | 1.276   | 1.338   | 1.403   | 1.469  | 1.539  | 1.611  |
| 6                                      | 1.062  | 1.126  | 1.194   | 1.265   | 1.340   | 1.419   | 1.501   | 1.587  | 1.677  | 1.772  |
| 7                                      | 1.072  | 1.149  | 1.230   | 1.316   | 1.407   | 1.504   | 1.606   | 1.714  | 1.828  | 1.949  |
| 8                                      | 1.083  | 1.172  | 1.267   | 1.369   | 1.477   | 1.594   | 1.718   | 1.851  | 1.993  | 2.144  |
| 9                                      | 1.094  | 1.195  | 1.305   | 1.423   | 1.551   | 1.689   | 1.838   | 1.999  | 2.172  | 2.358  |
|  |  |  |   |   |   |   |   |  |  |  |
|  | Present value interest factor of an (ordinary) annuity of \$1 per period (T) at i% for                           |  |   |   |   |   |   |  |  |  |
| Pre                                    | sent valu  | ue intere  | est facto   |   |   |   |   | per peri   | od (T) at  | i% for   |
|  |  |  |   |   | ds (T), I   | /) annuit<br>PVIFA(i,ı  |   | per peri   |  | i% for   |
| Т                                      | 1%   | 2%   | 3%  | n perio   | ds (T), I   | PVIFA(i,ı<br>6%   | n).   | 8%   | 9%   | 10%  |
|  | 1%<br>0.990  | 2%<br>0.980  | 3%<br>0.971   | n perio<br>4%<br>0.962  | ods (T), I<br>5%<br>0.952   | <b>PVIFA(i,i</b><br>6%<br>0.943   | 7%<br>0.935   |  |  |  |
| <b>T</b> 1 2                           | 1%<br>0.990<br>1.970   | 2%<br>0.980<br>1.942   | 3%<br>0.971<br>1.913  | n perio<br>4%<br>0.962<br>1.886   | 5%<br>0.952<br>1.859  | PVIFA(i,i<br>6%<br>0.943<br>1.833   | 7%<br>0.935<br>1.808  | 8%<br>0.926<br>1.783   | 9%<br>0.917<br>1.759   | 10%<br>0.909<br>1.736  |
| T 1 2 3                                | 1%<br>0.990<br>1.970<br>2.941  | 2%<br>0.980<br>1.942<br>2.884  | 3%<br>0.971<br>1.913<br>2.829   | 9 n perio<br>4%<br>0.962<br>1.886<br>2.775  | 5%<br>0.952<br>1.859<br>2.723   | 6%<br>0.943<br>1.833<br>2.673   | 7%<br>0.935<br>1.808<br>2.624   | 8%<br>0.926<br>1.783<br>2.577  | 9%<br>0.917<br>1.759<br>2.531  | 10%<br>0.909<br>1.736<br>2.487   |
| 1<br>2<br>3<br>4                       | 1%<br>0.990<br>1.970<br>2.941<br>3.902   | 2%<br>0.980<br>1.942<br>2.884<br>3.808   | 3%<br>0.971<br>1.913<br>2.829<br>3.717  | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630   | 5%<br>0.952<br>1.859<br>2.723<br>3.546  | 9VIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465   | 7%<br>0.935<br>1.808<br>2.624<br>3.387  | 8%<br>0.926<br>1.783<br>2.577<br>3.312   | 9%<br>0.917<br>1.759<br>2.531<br>3.240   | 10%<br>0.909<br>1.736<br>2.487<br>3.170  |
| T 1 2 3 4 5                            | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853  | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713  | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580   | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452  | 0.952<br>1.859<br>2.723<br>3.546<br>4.329   | PVIFA(i,1<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212  | 7%<br>0.935<br>1.808<br>2.624<br>3.387<br>4.100   | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993  | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890  | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791   |
| T 1 2 3 4 5 6                          | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795   | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601   | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417  | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452<br>5.242   | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076  | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917   | 7%<br>0.935<br>1.808<br>2.624<br>3.387<br>4.100<br>4.767  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623   | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486   | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355  |
| T 1 2 3 4 5 6 7                        | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728  | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472  | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230   | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452<br>5.242<br>6.002  | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582  | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623<br>5.206  | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486<br>5.033  | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868   |
| T 1 2 3 4 5 6 7 8                      | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728<br>7.652                                       | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472<br>7.325                                       | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230<br>7.020  | n period<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452<br>5.242<br>6.002<br>6.733                                      | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463  | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210   | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623<br>5.206<br>5.747                                       | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486<br>5.033<br>5.535                                   | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868<br>5.335                                      |
| T 1 2 3 4 5 6 7                        | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728  | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472  | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230   | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452<br>5.242<br>6.002  | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582  | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623<br>5.206  | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486<br>5.033  | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868   |
| T 1 2 3 4 5 6 7 8 9                    | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728<br>7.652<br>8.566                              | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472<br>7.325<br>8.162                              | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230<br>7.020<br>7.786                               | n perio<br>4%<br>0.962<br>1.886<br>2.775<br>3.630<br>4.452<br>5.242<br>6.002<br>6.733<br>7.435                              | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802  | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623<br>5.206<br>5.747<br>6.247                              | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486<br>5.033<br>5.535<br>5.995                          | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868<br>5.335<br>5.759                             |
| T 1 2 3 4 5 6 7 8 9                    | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728<br>7.652                                       | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472<br>7.325<br>8.162                              | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230<br>7.020<br>7.786                               | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435   | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802  | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  | 8%<br>0.926<br>1.783<br>2.577<br>3.312<br>3.993<br>4.623<br>5.206<br>5.747<br>6.247                              | 9%<br>0.917<br>1.759<br>2.531<br>3.240<br>3.890<br>4.486<br>5.033<br>5.535<br>5.995                          | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868<br>5.335<br>5.759                             |
| T 1 2 3 4 5 6 7 8 9                    | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728<br>7.652<br>8.566                              | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472<br>7.325<br>8.162<br>e interes                 | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230<br>7.020<br>7.786                               | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod   | 5% 0.952 1.859 2.723 3.546 4.329 5.076 5.786 6.463 7.108 rdinary a  | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>vIFA(i,n)   | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515 of \$1 pe  | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247 r period  | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995  (T) at i%  | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759  |
| T 1 2 3 4 5 6 7 8 9                    | 1%<br>0.990<br>1.970<br>2.941<br>3.902<br>4.853<br>5.795<br>6.728<br>7.652<br>8.566<br><b>ure valu</b>           | 2%<br>0.980<br>1.942<br>2.884<br>3.808<br>4.713<br>5.601<br>6.472<br>7.325<br>8.162<br>e interes                 | 3%<br>0.971<br>1.913<br>2.829<br>3.717<br>4.580<br>5.417<br>6.230<br>7.020<br>7.786<br>st factor                  | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod 4%  | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>rdinary a  | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%   | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe ).  | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period   | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i%   | 10%<br>0.909<br>1.736<br>2.487<br>3.170<br>3.791<br>4.355<br>4.868<br>5.335<br>5.759                             |
| T 1 2 3 4 5 6 7 8 9                    | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000                                     | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes   | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000                                     | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod 4% 1.000                                    | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>rdinary a<br>ls (T), F   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%<br>1.000  | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000                                     | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000                                     | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i%   | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759  |
| T 1 2 3 4 5 6 7 8 9 Fut                | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566 sure valu 1% 1.000 2.010                                | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes 2% 1.000 2.020                                | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786 st factor  3% 1.000 2.030                                | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod 4% 1.000 2.040                              | 5% 0.952 1.859 2.723 3.546 4.329 5.076 5.786 6.463 7.108 rdinary a ds (T), F 5% 1.000 2.050   | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>PVIFA(i,n)<br>6%<br>1.000<br>2.060                                    | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070                               | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247 r period  8% 1.000 2.080                                | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090                            | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100                               |
| T 1 2 3 4 5 6 7 8 9  Fut  T 1 2 3      | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030                         | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes 2% 1.000 2.020 3.060                          | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091                         | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod 4% 1.000 2.040 3.122                        | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>rdinary a<br>is (T), F<br>5%<br>1.000<br>2.050<br>3.153                            | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%<br>1.000<br>2.060<br>3.184                            | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215                         | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000 2.080 3.246                         | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090 3.278                      | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310                         |
| T 1 2 3 4 5 6 7 8 9  Fut 1 2 3 4       | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030 4.060                   | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes 2% 1.000 2.020 3.060 4.122                    | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091 4.184                   | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an or period 4% 1.000 2.040 3.122 4.246                | 1.000<br>2.050<br>3.153<br>4.310  | PVIFA(i,i) 6% 0.943 1.833 2.673 3.465 4.212 4.917 5.582 6.210 6.802  Annuity VIFA(i,n) 6% 1.000 2.060 3.184 4.375   | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215 4.440                   | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247 r period  8% 1.000 2.080 3.246 4.506                    | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090 3.278 4.573                | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310 4.641                   |
| T 1 2 3 4 5 6 7 8 9  Fut 1 2 3 4 5     | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030 4.060 5.101             | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes 2% 1.000 2.020 3.060 4.122 5.204              | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091 4.184 5.309             | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an operiod 4% 1.000 2.040 3.122 4.246 5.416            | 1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>5 (T), F<br>1.000<br>2.050<br>3.153<br>4.310<br>5.526                                       | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%<br>1.000<br>2.060<br>3.184<br>4.375<br>5.637          | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215 4.440 5.751             | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000 2.080 3.246 4.506 5.867             | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090 3.278 4.573 5.985          | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310 4.641 6.105             |
| T 1 2 3 4 5 6 7 8 9  Fut 1 2 3 4 5 6   | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030 4.060 5.101 6.152       | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes  2% 1.000 2.020 3.060 4.122 5.204 6.308       | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091 4.184 5.309 6.468       | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an or period 1.000 2.040 3.122 4.246 5.416 6.633       | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>rdinary a<br>is (T), F<br>5%<br>1.000<br>2.050<br>3.153<br>4.310<br>5.526<br>6.802 | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%<br>1.000<br>2.060<br>3.184<br>4.375<br>5.637<br>6.975 | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215 4.440 5.751 7.153       | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000 2.080 3.246 4.506 5.867 7.336       | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090 3.278 4.573 5.985 7.523    | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310 4.641 6.105 7.716       |
| T 1 2 3 4 5 6 7 8 9  Fut 1 2 3 4 5 6 7 | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030 4.060 5.101 6.152 7.214 | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes  2% 1.000 2.020 3.060 4.122 5.204 6.308 7.434 | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091 4.184 5.309 6.468 7.662 | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an or period 1.000 2.040 3.122 4.246 5.416 6.633 7.898 | 1.000<br>2.050<br>3.153<br>4.310<br>5.526<br>6.802<br>8.142   | PVIFA(i,i) 6% 0.943 1.833 2.673 3.465 4.212 4.917 5.582 6.210 6.802  Annuity VIFA(i,n) 6% 1.000 2.060 3.184 4.375 5.637 6.975 8.394                                       | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215 4.440 5.751 7.153 8.654 | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000 2.080 3.246 4.506 5.867 7.336 8.923 | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 1.000 2.090 3.278 4.573 5.985 7.523 9.200 | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310 4.641 6.105 7.716 9.487 |
| T 1 2 3 4 5 6 7 8 9  Fut 1 2 3 4 5 6   | 1% 0.990 1.970 2.941 3.902 4.853 5.795 6.728 7.652 8.566  ure valu  1% 1.000 2.010 3.030 4.060 5.101 6.152       | 2% 0.980 1.942 2.884 3.808 4.713 5.601 6.472 7.325 8.162 e interes  2% 1.000 2.020 3.060 4.122 5.204 6.308       | 3% 0.971 1.913 2.829 3.717 4.580 5.417 6.230 7.020 7.786  st factor  3% 1.000 2.030 3.091 4.184 5.309 6.468       | n period 4% 0.962 1.886 2.775 3.630 4.452 5.242 6.002 6.733 7.435 of an or period 1.000 2.040 3.122 4.246 5.416 6.633       | 0.952<br>1.859<br>2.723<br>3.546<br>4.329<br>5.076<br>5.786<br>6.463<br>7.108<br>rdinary a<br>is (T), F<br>5%<br>1.000<br>2.050<br>3.153<br>4.310<br>5.526<br>6.802 | PVIFA(i,i<br>6%<br>0.943<br>1.833<br>2.673<br>3.465<br>4.212<br>4.917<br>5.582<br>6.210<br>6.802<br>VIFA(i,n)<br>6%<br>1.000<br>2.060<br>3.184<br>4.375<br>5.637<br>6.975 | 7% 0.935 1.808 2.624 3.387 4.100 4.767 5.389 5.971 6.515  of \$1 pe 1.000 2.070 3.215 4.440 5.751 7.153       | 8% 0.926 1.783 2.577 3.312 3.993 4.623 5.206 5.747 6.247  r period  8% 1.000 2.080 3.246 4.506 5.867 7.336       | 9% 0.917 1.759 2.531 3.240 3.890 4.486 5.033 5.535 5.995 (T) at i% 9% 1.000 2.090 3.278 4.573 5.985 7.523    | 10% 0.909 1.736 2.487 3.170 3.791 4.355 4.868 5.335 5.759 6 for n  10% 1.000 2.100 3.310 4.641 6.105 7.716       |