# Singapore CA Qualification (Foundation) Examination 

## 9 June 2021

## Financial Management

## INSTRUCTIONS TO CANDIDATES:

1. The time allowed for this examination paper is $\mathbf{3}$ hours $\mathbf{1 5}$ minutes.
2. This examination paper has FOUR (4) questions and comprises TWENTY ONE (21) pages (including this instruction sheet and Appendix A). 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 SAC'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 Singapore Accountancy Commission.

## MODULE-SPECIFIC INSTRUCTIONS:

7. Assume that all dollar amounts are in Singapore dollar (S\$) unless otherwise stated.
8. All computations should be presented up to TWO (2) decimal places, unless otherwise stated.

## 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.
e-Exam Question Number

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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 61000516
6. You do not need to fill in an answer for this question.

## Question 1 - (a), (b) and (c)

Your Home Office Ltd (YHO) manufactures equipment to make working from home more efficient and effective. YHO has a year-end date of 31 December. Today is 1 January 20x3.

YHO has recently decided to launch a new range of pull-down projector screens. These are designed to fit to ceilings and to look as unobtrusive as possible when not in use - for example they can easily be removed as they are mounted on a patented sliding mechanism. The screens are designed to be pulled down behind home office seats to provide a neutral backdrop - for example for business video calls conducted from a home office.

The manufacturing of the equipment involves the use of specialist machinery with a useful life of 5 years. The machinery costs $\$ 3.5$ million to purchase, payable in 2 equal annual instalments, with the first one being on 1 January 20x3. It would be disposed of on 31 December of the final year for $20 \%$ of its initial cost. Annual maintenance costs will depend on the machine usage, and are estimated below:

| Demand | Probability | Annual Cost (\$'000) |
| :---: | :---: | :---: |
| High | 0.3 | 450 |
| Medium | 0.5 | 350 |
| Low | 0.2 | 300 |

The total initial investment of $\$ 3.5$ million is immediately eligible for capital allowances for tax purposes. YHO has elected to write the asset off over 2 years $-75 \%$ in the first year, $25 \%$ in the second year. A balancing allowance or charge will be levied upon eventual disposal.

The purchase of the machinery would be financed by the issue of $\$ 3.5$ million, $7 \%$ debentures, redeemable for $\$ 3.285$ million in 5 years' time. Interest would be paid annually in arrears.

## Lease alternative

Alternatively, the machinery could be leased from the machine manufacturer through their European finance subsidiary. The lease would involve 5 annual payments in advance of Euro 0.625 million and covers the use of the asset and its maintenance. This payment is deductible in Singapore for tax purposes.

Corporation tax is payable a year in arrears at a rate of $17 \%$ per annum. The EuroSingapore dollar exchange rate is Euro 0.65 / \$1 on 1 January $20 \times 3$. Interest rates in Singapore is $2 \%$ per annum, and in Europe is $0 \%$. These rates are expected to continue for the foreseeable future.

## e-Exam <br> Question <br> Number

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## Question 1 required:

(a) Calculate the cost of the debentures to be used to finance the purchase of the machinery if it is to be purchased.
(5 marks)
(b) Calculate, based on the information provided and present your answer to the nearest whole number:
(i) The Net Present Value of purchasing the asset outright; and
(10 marks)
(ii) The Net Present Value of leasing the asset and conclude, based on your calculations, which you would recommend.
(6 marks)
(c) State TWO assumptions made in your calculations and comment on the reasonableness of these assumptions.
(4 marks)
(Total: 25 marks)

## Question 2 - (a), (b) and (c)

Last Mile Mobility Ltd (LMM) is a listed company in Singapore that produces foldaway electric bicycles for city commutes. It is considering the purchase of Shockingly Small Pte Ltd (SSL), a battery developer and manufacturer that has patented a breakthrough in regenerative braking, extending the range of LMM's bicycles by as much as $30 \%$. The date is 1 January $20 \times 3$.

Recent extracts from SSL's latest financial statements:

|  | $\mathbf{3 1 . 1 2 . x 2}$ <br> $\mathbf{\$ \prime 0 0 0}$ |  |
| :--- | ---: | :---: |
| Non-current assets | 52,500 |  |
| Current assets | $\mathbf{2 8 , 1 2 3}$ |  |
| Current liabilities | $\underline{(16,843)}$ |  |
|  | $\underline{\underline{\mathbf{6 3 , 7 8 0}}}$ |  |
| Share capital <br> (\$0.25 nominal value) | $\mathbf{2 0 , 0 0 0}$ |  |
| Retained earnings | $\underline{33,780}$ |  |
|  | $\underline{53,780}$ |  |
| $5 \%$ Long-term loan | $\underline{10,000}$ |  |
|  | $\underline{\mathbf{6 3 , 7 8 0}}$ |  |

The non-current assets include buildings with a net book value of $\$ 20$ million which have recently been valued at $\$ 30$ million, and Plant and Machinery of $\$ 15$ million net book value of specialist equipment, which would be effectively worthless if SSL attempt to sell it separately.

Earnings before interest and tax for the year ending 31 December 20x2 were $\$ 3.0$ million. This excludes interest on the long-term loan, tax at $17 \%$ and a dividend of $\$ 2.5$ million. The $20 \times 2$ financial year includes an unusual write-off of $\$ 1,200,000$ receivable following the collapse of one of their major customers. This is tax deductible.

LMM feel that SSL's underlying earnings are likely to grow at a rate of 10\% per year for the next 3 years, stabilising at 6\% growth per year thereafter.

Volts to Miles Ltd (VTM) is a listed battery manufacturer operating in the same sector as SSL. It has a Price Earnings (P/E) ratio of 20. SSL has a faster growth potential than VTM which effectively doubles its P/E ratio. VTM has a beta factor of 1.6 and has a similar gearing ratio to SSL. VTM was listed lasted year. The listing process alone added $25 \%$ to the P/E ratio of VTM.

The risk-free rate is $2 \%$, and the market rate of return is $7 \%$.

## e-Exam <br> Question <br> Number

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## Question 2 required:

(a) Calculate a suitable discount rate for evaluating the purchase of SSL.
(b) Estimate the value of an SSL share (to the nearest cent) using the following bases:
(i) Discounted Cash Flow
(ii) Future Maintainable Earnings (using an adjusted Price Earnings ratio)
(iii) Revised Net Assets
(c) Briefly discuss the applicability of each method in this situation and justify a suitable range to be used for negotiation.
(Total: 25 marks)

Question 3 - (a), (b), (c) and (d)

Tan Enterprises Ltd (TEL) is a recently listed company that was formed when 2 brothers decided to combine their businesses into one group. It has 2 very different divisions - a courier business, and a business that specialises in refilling printer ink cartridges. There is a limited amount of synergy in sharing finance, office space, and couriering refilled cartridges to customers. The divisions are approximately equal in size. The date today is 1 January $20 \times 3$.

Partial information on 2 other comparable unrelated listed companies is provided below:

| Division | Company A |  | Company B |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Proportion of <br> company | Beta <br> factor | Proportion of <br> company | Beta <br> factor |
| Refilling printer ink <br> cartridges | $25 \%$ | $?$ |  |  |
| Courier | $75 \%$ | 1.8 |  | $?$ |
| Manufacture of <br> printers |  |  | $60 \%$ |  |
| Service of delivery <br> vehicles | $100 \%$ | 1.725 | $100 \%$ | 1.08 |
|  |  |  |  | 1.2 |

An extract from TEL's statement of financial position at 31 Dec $20 \times 2$ is given below:

|  | Notes | \$'000 |
| :--- | ---: | ---: |
| Non-current assets |  | 24,608 |
| Current assets |  | 6,143 |
| Current liabilities (excluding overdraft) |  | $(4,376)$ |
| Overdraft | Note 1 | $\underline{(3,500)}$ |
|  |  | $\underline{\mathbf{2 2 , 8 7 5}}$ |
|  |  |  |
| Share capital (\$0.25 nominal value) | Note 2 | 5,000 |


| Retained earnings |  | $\underline{3,500}$ |
| :--- | :--- | ---: |
| Total equity |  | 8,500 |
|  |  |  |
| $\$ 1,16 \%$ Preference shares | Note 3 | 5,000 |
| $10 \%$ Redeemable debentures | Note 4 | $\underline{9,375}$ |
|  |  | $\underline{\underline{\mathbf{2 2 , 8 7 5}}}$ |

Note 1 - The overdraft rate varies. The owners of TEL believe there is a $75 \%$ chance that the rate will be $7 \%$ going forward, and a $25 \%$ chance it will be $9 \%$. The amount of the overdraft varies between $\$ 3$ million and $\$ 5$ million. The facility has been in place for many years.

Note 2 - The shares are trading at $\$ 0.55$ ex div. Share price has been growing at $7 \%$ per annum and this is predicted to continue for the foreseeable future.

Note 3 - The preference shares are currently trading at $\$ 2.16$ cum div.

Note 4 - The 10\% redeemable debentures are currently trading at $\$ 80$ per $\$ 100$. They are redeemable at a $25 \%$ discount in 10 years' time, or convertible into 65 ordinary shares at the investors' option at that time.

Assume Company A and Company B have similar gearing to TEL.

The risk-free rate is $5 \%$ and the market risk premium is $6 \%$.

The Corporation Tax rate is $17 \%$.

## e-Exam <br> Question <br> Number

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## Question 3 required:

(a) Calculate the beta factor for TEL shares.
(b) Calculate the percentage cost of the following sources of finance:
(i) Equity
(5 marks)
(ii) Preference Shares
(5 marks)
(c) Calculate the Weighted Average Cost of Capital for TEL.
(7 marks)
(d) Explain what is likely to happen to the beta of TEL shares if further finance is raised by borrowing and why.
(2 marks)
(Total: 25 marks)

Question 4 - (a), (b), (c) and (d)

You have recently taken over as the Head of Finance for Tap and Deliver Pte Ltd (TAD), with a view to preparing the company to be listed on the Singapore Stock Exchange.

## Dividends and finance

The company has been growing fast since it started 5 years ago and has never paid a dividend. The Board appreciates that the stock exchange will expect dividend payments and want to consider how this will affect their future expansion plans. In this context, you have agreed to explain to the Board about the 3 central decisions in a financial strategy, and how they interrelate.

## Risk management

The Board also appreciates that risk needs to be formally managed, especially when the company becomes listed. The IT Director said in a recent meeting: 'The sooner we get a separate risk management function the better - If it means I don't need to worry about risk anymore, it'll be one more job off my list to be honest!'

## Increased gearing

Once listed, the Board intends to raise debt through the stock exchange to facilitate their continued expansion. The Chairman commented: 'I'm concerned if we borrow, it will reduce our credit rating, and so increase our Weighted Average Cost of Capital.'

## Working capital

Since taking over as the Head of Finance, you have been concerned that customer credit accounts have been getting out of control. With a turnover of $\$ 80$ million, TAD has receivables of $\$ 9.86$ million. You intend to reduce the period of credit to 1 month by a combination of closer monitoring and an early settlement discount of $0.5 \%$. You expect all customers to take advantage of this discount. You also expect the change to be permanent. TAD has an overdraft that costs the company 15\% a year after tax. The company has a Weighted Average Cost of Capital currently of $12 \%$.

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## Question 4 required:

(a)(i) Explain THREE key decisions of the financial strategy.
(a)(ii) Explain how the THREE key decisions in a financial strategy interrelates.
(a)(iii) Discuss THREE ways to accommodate the payment of a dividend and justify ONE recommendation.
(8 marks)
(b) Discuss THREE concerns with the proposed change in the receivables policy.
(c) Evaluate the comment of the IT Director and discuss THREE ways in which risk management can be embedded in the business.
(d) Evaluate the comment of the Chairman in relation to the impact of raising more debt finance.
(2 marks)
(Total: 25 marks)

## END OF PAPER

| Appendix A - Formulae and Present Value Tables |  |
| :---: | :---: |
| Financial ratios |  |
| Current ratio | = Current assets / Current liabilities |
| Net working capital | = Current assets - Current liabilities |
| Return on total assets | = Net income / Average total assets |
| Return on equity | = Net income / Average shareholders' equity |
| Receivables days | $=$ (Accounts receivable balance / annual credit sales) $\times 365$ |
| Receivables turnover | $=$ (Annual credit sales/ Accounts receivable balance) to give 'times a year' |
| Payables days | $=$ (Accounts payable balance $/$ annual purchases or cost of sales) $\times 365$ |
| Payables turnover | $=$ (Annual purchases or cost of sales/ Accounts payable balance) to give 'times a year' |
| Inventory days | $=$ (Inventory balance / cost of sales) $\times 365$ |
| Inventory turnover | $=$ (Cost of sales / inventory balance) to give 'times a year' |

## Dividend growth model

$\mathrm{K}_{\mathrm{e}}=\left[\mathrm{D}_{\mathrm{o}}(1+\mathrm{g}) / \mathrm{P}_{0}\right]+\mathrm{g}$
Where:
$\mathrm{K}_{\mathrm{e}}=$ the cost of equity
$\mathrm{D}_{0}=$ the current dividend per share
$g=$ future anticipated annual growth rate in dividends per share
$\mathrm{P}_{0}=$ the current ex-div share price

## $g$ can be estimated as

$\left(D_{r} / D_{e}\right)^{(1 / n)}-1$
Where:
$D_{r}=$ the latest dividend in a historical pattern
$D_{e}$ - the earliest dividend in a historical pattern
$\mathrm{n}=$ the number of years between the earliest and the latest dividend in a sequence of historical dividends.

Org $=b x r$
Where:
$b=$ the proportion of earnings held back
$r=$ the return on reinvested earnings

## Capital Asset Pricing Model (‘CAPM’):

$K_{e}=R_{f}+\boldsymbol{\beta}\left(\mathbf{R m}_{m}-\mathbf{R}_{\mathrm{f}}\right)$
$\mathrm{K}_{\mathrm{e}}=$ the cost of equity
$\mathbf{R}_{\mathrm{f}}=$ The risk-free rate of return
$\mathrm{R}_{\mathrm{m}}=$ the return on a market portfolio
$\beta=$ the systematic risk factor

## Pre-tax cost of Debentures $\boldsymbol{=}$ IRR of the relevant cashflows

## Valuations

Weighted Average Cost of Capital (WACC)
$\mathrm{WACC} \%=[(\mathrm{Ve} /(\mathrm{Ve}+\mathrm{Vd}) \times \mathrm{Ke}]+[(\mathrm{Vd} /(\mathrm{Ve}+\mathrm{Vd}) \times \mathrm{Kd}]$
Where:
$\mathrm{Ve}=$ The market value of all ordinary shares
$\mathrm{Vd}=$ The market value of debt
$\mathrm{Ke}=$ Cost of Equity
Kd = After-tax Cost of Debt

## Constant Growth Dividend discount model

$\mathrm{P}_{0}=\mathrm{D}_{0}(1+\mathrm{g}) /\left(\mathrm{K}_{\mathrm{e}}-\mathrm{g}\right)$
Where:
$\mathrm{K}_{\mathrm{e}}=$ the cost of equity
$\mathrm{D}_{0}=$ the current dividend per share
$\mathrm{g}=$ future anticipated annual growth rate in dividends per share
$P_{0}=$ the current ex-div share value of one share

## Price-Earnings (P/E) model (EPS)

$P_{0}=P / E \times E P S$
Where:
$\mathrm{P}_{0}=$ value of 1 ordinary share
P/E = an applicable price/earnings ratio (calculated as price per share / earnings per share)

EPS = earnings per share (being earnings available for distribution to ordinary shareholders / number of ordinary shares)

## Present value of an annuity

$\frac{1-(1+r)^{-n}}{r}$

Where:
$r=$ discount rate
$\mathrm{n}=$ number of periods

## Present value

$P V=F V_{n} /(1+i)^{n}$
Where:
PV = Present Value
$F V_{n}=$ Future value at end of period $n$
$\mathrm{i}=$ Interest rate per period
$\mathrm{n}=$ Number of periods

## Internal Rate of Return

IRR is approximately

$$
A+\frac{(B-A) N_{A}}{\left(N_{A}-N_{B}\right)}
$$

Where:
$\mathrm{A}=$ The lower discount rate chosen
$B \quad=$ The higher discount rate chosen
$N_{A}=$ The net present value calculated at $A \%$
$\mathrm{N}_{\mathrm{B}}=$ The net present value calculated at B\%

## The Baumol model of cash management:

$Q=\sqrt{\frac{2 \mathrm{C}_{\mathrm{o}} \mathrm{D}}{\mathrm{C}_{\mathrm{H}}}}$

Where:
Q $\quad=\quad$ The value of securities to sell each time
Co = The fixed costs associated with selling a parcel of securities
D $\quad=$ The annual demand for cash
$\mathrm{C}_{\mathrm{H}} \quad=$ The annual interest rate, as a decimal. Associated with holding cash as opposed to investments

Present value interest factor of an (ordinary) annuity of $\$ 1$ per period at $\mathbf{i} \%$ for $n$ periods, PVIFA(i,n).

| Period | $1 \%$ | $2 \%$ | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | $7 \%$ | $8 \%$ | $9 \%$ | $10 \%$ |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 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 | 15.678 | 14.324 | 13.134 | 12.085 | 11.158 | 10.336 | 9.604 | 8.950 | 8.365 |
| 20 | 18.046 | 16.351 | 14.877 | 13.590 | 12.462 | 11.470 | 10.594 | 9.818 | 9.129 | 8.514 |


| Period | $11 \%$ | $12 \%$ | $13 \%$ | $14 \%$ | $15 \%$ | $16 \%$ | $17 \%$ | $18 \%$ | $19 \%$ | $20 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | ---: |
| 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 |


| Present value interest factor of \$1 per period at i\% for n periods, PVIF(i,n). |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Period | 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 |


| Period | $11 \%$ | $12 \%$ | $13 \%$ | $14 \%$ | $15 \%$ | $16 \%$ | $17 \%$ | $18 \%$ | $19 \%$ | $20 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | ---: |
| 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 | 0.074 | 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 |

## Appendix B-Common verbs used by the Examiners

| Verb | Description |
| :--- | :--- |
| Calculate / <br> Compute | Do the number crunching and derive the correct answer. Make <br> sure that you write down your workings and crosscheck your <br> numbers. |
| Comment | Comment is similar to evaluate in that you are required to make a <br> judgment or provide your opinion based on the facts at hand. <br> Professional judgment and scepticism (a questioning mind) are <br> called for when commenting. |
| Discuss | Discuss requires you to provide the 'for' and 'against' arguments, <br> you cannot have a discussion without opposing views otherwise it <br> would be just a conversation. If discuss is placed near the front <br> of the instruction, then it requires you to provide an answer that is <br> similar to explain, but addresses both the for and against <br> arguments. |
| Estimate | Suggest an approximate value (or range of values) based on the <br> available information. Remember, although estimating involves <br> uncertainty, some answers will be more right (or appropriate) than <br> others. |
| Evaluate | Pass judgment on or provide your opinion based on the facts at <br> hand. When making an evaluation, there are often predetermined <br> criteria that you will use to base your opinion on. The key here is <br> to give your opinion or make a judgment of the facts, but providing <br> just a description of the facts is insufficient. Professional <br> judgment and scepticism (a questioning mind) are called for when <br> making an evaluation. |
| Explain | Explain requires you to write at least several sentences conveying <br> how you have analysed the information in a way that a layperson <br> can easily understand the concept or grasp the technical issue at <br> hand. For instance, "Explain whether an 'emphasis of matter' <br> paragraph or an 'other matter' paragraph would be most <br> appropriate in this situation", or "Explain how a partnership is <br> assessed for tax". Evaluate and Examine are interchangeable. |
|  | Whenever you see the word justify you must provide reasons for <br> your answer, in other words, provide support for your argument or <br> conclusion. If you fail to justify your answer, you will lose valuable <br> marks. Justify is similar to defend. |
|  | Justify |


| Verb | Description |
| :--- | :--- |
| Recommend | Make a statement about the most appropriate course of action. If <br> there is more than one possible course of action, state which <br> action you would choose and why (justify your choice). Your <br> professional judgment and your ability to interpret the wider <br> situation are critical to scoring well in these types of questions. <br> Don't forget to think about the future and the past, not just the <br> present when making a recommendation |
| State | State is similar to list, but the items require your professional <br> judgement. For instance, "State any restrictions that apply". One <br> of the easiest ways to make sure that you state comprehensively <br> is to think, "list and justify". You will note that state appears in <br> many of the verb descriptions given. |

