**CIMA**

Business Management Pillar

Strategic Level

# P6 – Management Accounting – Business Strategy

22 November 2005 - Tuesday Morning Session

*Instructions to candidates*

| You are allowed three hours to answer this question paper. |
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| You are allowed 20 minutes reading time **before the examination begins** during which you should read the question paper and, if you wish, make annotations on the question paper. However, you will **not** be allowed, **under any circumstances,** to open the answer book and start writing or use your calculator during this reading time. |
| You are strongly advised to carefully read ALL the question requirements before attempting the question concerned (that is, all parts and/or sub-questions). The question requirements are contained in a dotted box. |
| Answer the ONE compulsory question in Section A on pages 2, 3 and 5. |
| Answer TWO of the four questions in Section B on pages 7 to 10. |
| Maths Tables and Formulae are provided on pages 11 and 12. These pages are detachable for ease of reference. |
| Write your full examination number, paper number and the examination subject title in the spaces provided on the front of the examination answer book. Also write your contact ID and name in the space provided in the right hand margin and seal to close. |
| Tick the appropriate boxes on the front of the answer book to indicate which questions you have answered. |

**P6 – Business Strategy**

TURN OVER

## Question One

S Company provides transport by sea and air between a country's mainland and a small group of islands 30 miles off shore.  The company operates two ships, which make daily return trips to the islands.  One ship carries only freight and provisions while the other transports freight and passengers.  The islands are a popular holiday resort.

In addition to the ships, S operates some aircraft which convey passengers to and from the islands on a daily basis.  While other airlines also fly to the islands, S is the only operator of ships to the islands, though some tourists visit in their private yachts.  During the winter months the ships are repaired and maintained.  However, the two ships are never out of service at the same time.  The only other time the ships do not sail to the islands is in extreme weather conditions when it is considered unsafe to make the voyage.  Major aircraft repairs are undertaken by S itself.

*The Islands*

The main industries on the islands are agriculture and tourism.  Due to their location, the islands enjoy a climate that enables them to successfully cultivate crops ready for market much earlier than can be achieved on the mainland.  The islands have established a reputation for growing flowers and vegetables, which they supply to retailers on the mainland.  Some of these flowers and vegetables are exported to other locations throughout the world.  Much of the produce is transported from the islands on board the ships operated by S.

A strong tourist industry has developed on the islands, peaking during the months of July and August.  Most islanders are engaged in tourism, either by providing accommodation, boat trips, catering or retailing.  The tourist trade declines sharply after September of each year until the following April.  During this period the islanders are mainly engaged in agriculture.

*The Company*

S has 750,000 ordinary shares in issue, which are owned by the directors and employees of the company.

Over the years the company has established a good reputation for reliability and safety in its passenger services.  The passenger ship operated by S was launched in 1979.  It can carry a capacity of 200 passengers and can accommodate some cargo.  The company charges the same price of £120 per person for a return trip irrespective of whether the passenger is an islander or visitor.  This charge per passenger has increased steeply in recent years and considerably reduced the difference that, at one time, existed between the fares for travel by air and sea.  Similarly, the other airlines operating to and from the islands do not differentiate between visitors and islanders in their charging policies.

S has secured mooring rights at ports on the mainland and on the islands.  However, these are negotiated on a periodic basis and are due for renewal in one year's time.  In the last financial year, the company achieved an after tax profit of £120,000 on a turnover of £4·8m.  S has experienced a gradual reduction in profit over time, as it has not been able to cover all its continually increasing operating costs by increasing its passenger and freight charges.

S owns the two ships, which had a net book value of £1·6m at the end of the last financial year.  At the same point in time, S had in its accounts a net book value of £2·9m for all property, plant and equipment.

*Potential Development*

A few years ago, a mainland holiday company (M) applied to the government of the country and islands for permission to build a holiday complex on one of the uninhabited islands.  The complex was planned to accommodate a maximum capacity of 500 people constantly throughout the year, and intended to incorporate numerous entertainment facilities associated

with water and beach sports.  In addition, the complex was planned to have indoor swimming facilities as well as its own golf course and bars.  The application was refused by the government on the basis that the development would be out of character with the local environment.  This decision was well received by the local island communities.

Since the application was made, there has been residential holiday accommodation built on two of the other uninhabited islands.  This has been in the form of high quality hotels and apartments.  Since these developments have taken place, the government has undertaken an initiative to increase the revenue generated by tourism, and has indicated to M that it would now view its development proposals more favourably.  If the development was in a similar style to the other accommodation, the government would not oppose the scheme.  M has indicated to the government that it wishes to proceed with a development similar to that previously proposed (that is, for 500 guests).  M is preparing to invite quotations, from S and others, for the transport of building materials from the mainland to the site and the subsequent transport of tourists once the complex is operational.

*Implications for S*

The directors of S are aware that M intends that its visitors would travel to the complex by both air and sea.  In order to prepare for a quotation, the directors have recognised that they would need to be willing to increase their sea passenger capacity.  They would need to replace their existing passenger ship if they were awarded the contract.  A replacement ship with sufficient capacity would cost £7 million and would be bought in two years' time.  The scrap value of the existing ship would be £250,000.  The directors estimate that the cash running costs of the replacement ship would be £12 per passenger, the same as for the existing ship.

In order to moor the new ship, extensive building works would be required at the major port on the mainland.  S's directors expect that this will cost approximately £1 million and will take one year to complete.  These works will commence immediately upon the contract being agreed with the holiday company, which is expected to be in one year's time.  There will be no increase in passenger numbers until the new ship is bought in two years' time.

If awarded to S, the contract for the transportation of passengers will be for a duration of five years.  It is expected that 90% of the visitors attending the complex will go by the sea route rather than by air.  On average, the visitors travelling to the holiday complex will each remain there for two weeks and, due to the extensive entertainment provision at the complex, there will be constant demand throughout the year.  There is sufficient capacity available for the existing airlines servicing the islands to carry the extra passengers who wish to travel by air.

If awarded the contract for the conveyance of passengers, the directors of S expect that S will obtain an additional contribution of £2 million for transporting the materials necessary to build the holiday complex.  This contribution can be assumed to arise two years from now.

The contract terms (for the conveyance of passengers only) will be that S will receive from M an equal payment each year over the life of the actual contract.  Payments to the successful bidder will commence in three years' time and run for a period of five years.  It may be assumed that S will also charge each passenger £120 for a return trip throughout the period of the contract.

S requires a return of 20% on this project, to reflect the degree of risk involved. The directors believe that the value of the new ship will have fallen to £4 million by the end of the contract. All cash flows can be assumed to arise at the end of the year to which they relate unless otherwise stated.


## The requirement for this question is on page 5 which is detachable for ease of reference

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*(Total for Section A = 50 marks)*

## End of Section A

TURN OVER

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**Question Two**

*Introduction*

The 222 Organisation (222) is a large information systems consultancy, based in the southern African country of Jurania.  222 was founded in 1987 and has become very successful, both within Jurania and in neighbouring countries, due to growth in the economies of those countries and the highly developed technology sector of the Juranian economy.  222 advises organisations on the development of Intranet and knowledge sharing systems, and has many clients among the top 100 companies in Jurania.

222 employs over 500 staff in its very impressive modern office building on a business park near the capital city of Jurania.  Also based on the business park are several IT hardware and software companies, and the country's largest Internet service provider (ISP), JuraWeb.  Many of 222's staff were trained at Jurania's university, which has an excellent reputation.  Whenever 222 advertises for additional staff, it receives a large number of applications from suitably qualified applicants.

*The Internet strategy*

Recognising that the growth of 222 is limited by the size of the local market for its services, the directors of 222 are considering the further development of its rather basic website.  At present, the 222.com website only contains a description of the organisation and contact details.  The site was designed by employees of 222 and is hosted by JuraWeb.  The directors hope that a better website will allow the organisation to develop new business in other parts of Africa, but have no desire to become a global business at this stage.

The directors are considering using the services of a local specialist web design company to develop a sophisticated website with case studies of previous 222 contracts, and detailed descriptions of staff and services.  The directors also believe that 222 should be hosting the website itself, and are considering the purchase of a powerful web server.  They also want to upgrade the telecommunications infrastructure of the organisation by investing in a new fibre-optic broadband service, which is available from a recently formed company that has just opened its office on the business park.

*Required:*

*(a)*   Evaluate whether the 222 Organisation might gain a competitive advantage as a result of being based in Jurania.

*(13 marks)*

*(b)*   Evaluate the risks to 222 if it decides to pursue its Internet strategy as the directors have suggested.

*(12 marks)*

*(Total for Question Two = 25 marks)*

**Question Three**

C is a large multinational car manufacturer. It has factories in five countries and sells its products through networks of independent dealerships throughout the world. As part of its strategy of reducing unit costs and improving quality, C has entered into a number of 'sole supplier' agreements. This means that, on a worldwide basis, C buys all of its requirement for a specific material or component from a single supplier organisation. Such contracts are normally for a five year period.

S is a specialist manufacturer of safety equipment. It has recently been invited, by C, to submit a tender to supply all of the 'airbag' safety devices to be installed in C's cars. This will be the biggest order for which S has ever tendered and, if won, would require a two hundred per cent increase in production capacity (that is to three times its present scale) for S. In return for this large order, S would have to agree to deliver the required parts to each C factory twice a day. Any failure to deliver on time would lead to S being liable for the cost of lost production.

As part of the contract, C would allow S access to its extranet. This would mean that S was able to see C's forecast production schedules on a real-time basis. C maintains detailed forecasts of the number of each model of car being produced in each factory. This information is available on an hour-by-hour basis for the next month, on a day-by-day basis for the following five months, and a week-by-week basis for the subsequent 18 months. This means that S would be able to view detailed production forecasts for a two year period. The extranet also has a 'virtual trading room' where suppliers bid for new contracts. It also contains a lot of car industry information, some of which is not available to organisations that do not supply C.

*Required:*

*(a)* Discuss the advantages and disadvantages, to S, of the sole supplier arrangement described.

*(15 marks)*

*(b)* Evaluate the benefits, to S, of access to the C extranet.

*(10 marks)*

*(Total for Question Three = 25 marks)*

**Question Four**

In the 'five forces model', one of the conclusions reached by Porter is that firms or strategic business units (SBUs) compete with their customers and suppliers.

The same model can be used to evaluate the competitive environment of the SBUs of large, complex organisations. In such organisations, some of the SBUs may be customer and supplier to one another. This leads to management accountants becoming involved in negotiations leading to the agreement of appropriate transfer prices between these SBUs.

*Required:*

*(a)* Explain how the forces exerted in a customer-supplier relationship led Michael Porter to conclude that firms compete with their customers and suppliers.

*Note: You are NOT required to explain the whole of Porter's model or draw the diagram.*

*(10 marks)*

*(b)* Discuss the issues to be considered when negotiating and agreeing transfer prices between SBU's within a large, complex organisation. You should make reference to Porter's model, and your arguments in part *(a)* where appropriate.

*(15 marks)*

*(Total for Question Four = 25 marks)*

TURN OVER

**Question Five**

The MTM Group (MTM) is a major tobacco products manufacturer. As a global organisation, MTM has production facilities on every continent, and a highly sophisticated distribution network. MTM uses the 'rational planning model' to produce a strategic plan for each country in which it operates. The plan states any assumptions about the business environment in that country, then forecasts retail price levels, the market size and market share of MTM for each of the next five years. This plan is then used as a basis for next year's budget for that country. The budget is fixed at the beginning of the year, and used for control and reporting for the year.

The directors of MTM are currently formulating the organisation's strategy relating to a small Asian country (referred to as the SAC) where the government is known to be considering the introduction of a ban on all tobacco advertising. At present, the probability of such legislation has been estimated at 40%, and the marketing department has estimated that the effect of the ban would be to reduce MTM's profits in the SAC by 20%. Such a reduction would be significant enough to threaten the viability of MTM's operations in the SAC. The marketing manager has therefore suggested that the strategic plan should assume an 8% reduction in profits from the SAC (40% x 20%)

*Required*

*(a)* Discuss the limitations of the use of the expected values technique in the context of a single strategic decision such as this.

*(6 marks)*

*(b)* Recommend how the planning processes of MTM, for the SAC, should be modified to take account of the possible new legislation.

*(12 marks)*

*(c)* Evaluate different methods that MTM might use to influence the government of the SAC.

*(7 marks)*

*(Total for Question Five = 25 marks)*

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*(Total for Section B = 50 marks)*

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*End of Question Paper*

*Maths Tables and Formulae follow on pages 11 and 12*

# MATHS TABLES AND FORMULAE

## Present value table

Present value of $1, that is $(1 + r)^{-n}$ where $r$ = interest rate; $n$ = number of periods until payment or receipt.

| Periods | Interest rates ($r$) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ($n$) | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 |
| 2 | 0.980 | 0.961 | 0.943 | 0.925 | 0.907 | 0.890 | 0.873 | 0.857 | 0.842 | 0.826 |
| 3 | 0.971 | 0.942 | 0.915 | 0.889 | 0.864 | 0.840 | 0.816 | 0.794 | 0.772 | 0.751 |
| 4 | 0.961 | 0.924 | 0.888 | 0.855 | 0.823 | 0.792 | 0.763 | 0.735 | 0.708 | 0.683 |
| 5 | 0.951 | 0.906 | 0.863 | 0.822 | 0.784 | 0.747 | 0.713 | 0.681 | 0.650 | 0.621 |
| 6 | 0.942 | 0.888 | 0.837 | 0.790 | 0.746 | 0705 | 0.666 | 0.630 | 0.596 | 0.564 |
| 7 | 0.933 | 0.871 | 0.813 | 0.760 | 0.711 | 0.665 | 0.623 | 0.583 | 0.547 | 0.513 |
| 8 | 0.923 | 0.853 | 0.789 | 0.731 | 0.677 | 0.627 | 0.582 | 0.540 | 0.502 | 0.467 |
| 9 | 0.914 | 0.837 | 0.766 | 0.703 | 0.645 | 0.592 | 0.544 | 0.500 | 0.460 | 0.424 |
| 10 | 0.905 | 0.820 | 0.744 | 0.676 | 0.614 | 0.558 | 0.508 | 0.463 | 0.422 | 0.386 |
| 11 | 0.896 | 0.804 | 0.722 | 0.650 | 0.585 | 0.527 | 0.475 | 0.429 | 0.388 | 0.350 |
| 12 | 0.887 | 0.788 | 0.701 | 0.625 | 0.557 | 0.497 | 0.444 | 0.397 | 0.356 | 0.319 |
| 13 | 0.879 | 0.773 | 0.681 | 0.601 | 0.530 | 0.469 | 0.415 | 0.368 | 0.326 | 0.290 |
| 14 | 0.870 | 0.758 | 0.661 | 0.577 | 0.505 | 0.442 | 0.388 | 0.340 | 0.299 | 0.263 |
| 15 | 0.861 | 0.743 | 0.642 | 0.555 | 0.481 | 0.417 | 0.362 | 0.315 | 0.275 | 0.239 |
| 16 | 0.853 | 0.728 | 0.623 | 0.534 | 0.458 | 0.394 | 0.339 | 0.292 | 0.252 | 0.218 |
| 17 | 0.844 | 0.714 | 0.605 | 0.513 | 0.436 | 0.371 | 0.317 | 0.270 | 0.231 | 0.198 |
| 18 | 0.836 | 0.700 | 0.587 | 0.494 | 0.416 | 0.350 | 0.296 | 0.250 | 0.212 | 0.180 |
| 19 | 0.828 | 0.686 | 0.570 | 0.475 | 0.396 | 0.331 | 0.277 | 0.232 | 0.194 | 0.164 |
| 20 | 0.820 | 0.673 | 0.554 | 0.456 | 0.377 | 0.312 | 0.258 | 0.215 | 0.178 | 0.149 |

| Periods | Interest rates ($r$) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ($n$) | 11% | 12% | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% |
| 1 | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 |
| 2 | 0.812 | 0.797 | 0.783 | 0.769 | 0.756 | 0.743 | 0.731 | 0.718 | 0.706 | 0.694 |
| 3 | 0.731 | 0.712 | 0.693 | 0.675 | 0.658 | 0.641 | 0.624 | 0.609 | 0.593 | 0.579 |
| 4 | 0.659 | 0.636 | 0.613 | 0.592 | 0.572 | 0.552 | 0.534 | 0.516 | 0.499 | 0.482 |
| 5 | 0.593 | 0.567 | 0.543 | 0.519 | 0.497 | 0.476 | 0.456 | 0.437 | 0.419 | 0.402 |
| 6 | 0.535 | 0.507 | 0.480 | 0.456 | 0.432 | 0.410 | 0.390 | 0.370 | 0.352 | 0.335 |
| 7 | 0.482 | 0.452 | 0.425 | 0.400 | 0.376 | 0.354 | 0.333 | 0.314 | 0.296 | 0.279 |
| 8 | 0.434 | 0.404 | 0.376 | 0.351 | 0.327 | 0.305 | 0.285 | 0.266 | 0.249 | 0.233 |
| 9 | 0.391 | 0.361 | 0.333 | 0.308 | 0.284 | 0.263 | 0.243 | 0.225 | 0.209 | 0.194 |
| 10 | 0.352 | 0.322 | 0.295 | 0.270 | 0.247 | 0.227 | 0.208 | 0.191 | 0.176 | 0.162 |
| 11 | 0.317 | 0.287 | 0.261 | 0.237 | 0.215 | 0.195 | 0.178 | 0.162 | 0.148 | 0.135 |
| 12 | 0.286 | 0.257 | 0.231 | 0.208 | 0.187 | 0.168 | 0.152 | 0.137 | 0.124 | 0.112 |
| 13 | 0.258 | 0.229 | 0.204 | 0.182 | 0.163 | 0.145 | 0.130 | 0.116 | 0.104 | 0.093 |
| 14 | 0.232 | 0.205 | 0.181 | 0.160 | 0.141 | 0.125 | 0.111 | 0.099 | 0.088 | 0.078 |
| 15 | 0.209 | 0.183 | 0.160 | 0.140 | 0.123 | 0.108 | 0.095 | 0.084 | 0.079 | 0.065 |
| 16 | 0.188 | 0.163 | 0.141 | 0.123 | 0.107 | 0.093 | 0.081 | 0.071 | 0.062 | 0.054 |
| 17 | 0.170 | 0.146 | 0.125 | 0.108 | 0.093 | 0.080 | 0.069 | 0.060 | 0.052 | 0.045 |
| 18 | 0.153 | 0.130 | 0.111 | 0.095 | 0.081 | 0.069 | 0.059 | 0.051 | 0.044 | 0.038 |
| 19 | 0.138 | 0.116 | 0.098 | 0.083 | 0.070 | 0.060 | 0.051 | 0.043 | 0.037 | 0.031 |
| 20 | 0.124 | 0.104 | 0.087 | 0.073 | 0.061 | 0.051 | 0.043 | 0.037 | 0.031 | 0.026 |

Cumulative present value of $1 per annum, Receivable or Payable at the end of each year for $n$ years

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

| Periods | Interest rates ($r$) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ($n$) | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 |
| 2 | 1.970 | 1.942 | 1.913 | 1.886 | 1.859 | 1.833 | 1.808 | 1.783 | 1.759 | 1.736 |
| 3 | 2.941 | 2.884 | 2.829 | 2.775 | 2.723 | 2.673 | 2.624 | 2.577 | 2.531 | 2.487 |
| 4 | 3.902 | 3.808 | 3.717 | 3.630 | 3.546 | 3.465 | 3.387 | 3.312 | 3.240 | 3.170 |
| 5 | 4.853 | 4.713 | 4.580 | 4.452 | 4.329 | 4.212 | 4.100 | 3.993 | 3.890 | 3.791 |
| 6 | 5.795 | 5.601 | 5.417 | 5.242 | 5.076 | 4.917 | 4.767 | 4.623 | 4.486 | 4.355 |
| 7 | 6.728 | 6.472 | 6.230 | 6.002 | 5.786 | 5.582 | 5.389 | 5.206 | 5.033 | 4.868 |
| 8 | 7.652 | 7.325 | 7.020 | 6.733 | 6.463 | 6.210 | 5.971 | 5.747 | 5.535 | 5.335 |
| 9 | 8.566 | 8.162 | 7.786 | 7.435 | 7.108 | 6.802 | 6.515 | 6.247 | 5.995 | 5.759 |
| 10 | 9.471 | 8.983 | 8.530 | 8.111 | 7.722 | 7.360 | 7.024 | 6.710 | 6.418 | 6.145 |
| 11 | 10.368 | 9.787 | 9.253 | 8.760 | 8.306 | 7.887 | 7.499 | 7.139 | 6.805 | 6.495 |
| 12 | 11.255 | 10.575 | 9.954 | 9.385 | 8.863 | 8.384 | 7.943 | 7.536 | 7.161 | 6.814 |
| 13 | 12.134 | 11.348 | 10.635 | 9.986 | 9.394 | 8.853 | 8.358 | 7.904 | 7.487 | 7.103 |
| 14 | 13.004 | 12.106 | 11.296 | 10.563 | 9.899 | 9.295 | 8.745 | 8.244 | 7.786 | 7.367 |
| 15 | 13.865 | 12.849 | 11.938 | 11.118 | 10.380 | 9.712 | 9.108 | 8.559 | 8.061 | 7.606 |
| 16 | 14.718 | 13.578 | 12.561 | 11.652 | 10.838 | 10.106 | 9.447 | 8.851 | 8.313 | 7.824 |
| 17 | 15.562 | 14.292 | 13.166 | 12.166 | 11.274 | 10.477 | 9.763 | 9.122 | 8.544 | 8.022 |
| 18 | 16.398 | 14.992 | 13.754 | 12.659 | 11.690 | 10.828 | 10.059 | 9.372 | 8.756 | 8.201 |
| 19 | 17.226 | 15.679 | 14.324 | 13.134 | 12.085 | 11.158 | 10.336 | 9.604 | 8.950 | 8.365 |
| 20 | 18.046 | 16.351 | 14.878 | 13.590 | 12.462 | 11.470 | 10.594 | 9.818 | 9.129 | 8.514 |

| Periods | Interest rates ($r$) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ($n$) | 11% | 12% | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% |
| 1 | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 |
| 2 | 1.713 | 1.690 | 1.668 | 1.647 | 1.626 | 1.605 | 1.585 | 1.566 | 1.547 | 1.528 |
| 3 | 2.444 | 2.402 | 2.361 | 2.322 | 2.283 | 2.246 | 2.210 | 2.174 | 2.140 | 2.106 |
| 4 | 3.102 | 3.037 | 2.974 | 2.914 | 2.855 | 2.798 | 2.743 | 2.690 | 2.639 | 2.589 |
| 5 | 3.696 | 3.605 | 3.517 | 3.433 | 3.352 | 3.274 | 3.199 | 3.127 | 3.058 | 2.991 |
| 6 | 4.231 | 4.111 | 3.998 | 3.889 | 3.784 | 3.685 | 3.589 | 3.498 | 3.410 | 3.326 |
| 7 | 4.712 | 4.564 | 4.423 | 4.288 | 4.160 | 4.039 | 3.922 | 3.812 | 3.706 | 3.605 |
| 8 | 5.146 | 4.968 | 4.799 | 4.639 | 4.487 | 4.344 | 4.207 | 4.078 | 3.954 | 3.837 |
| 9 | 5.537 | 5.328 | 5.132 | 4.946 | 4.772 | 4.607 | 4.451 | 4.303 | 4.163 | 4.031 |
| 10 | 5.889 | 5.650 | 5.426 | 5.216 | 5.019 | 4.833 | 4.659 | 4.494 | 4.339 | 4.192 |
| 11 | 6.207 | 5.938 | 5.687 | 5.453 | 5.234 | 5.029 | 4.836 | 4.656 | 4.486 | 4.327 |
| 12 | 6.492 | 6.194 | 5.918 | 5.660 | 5.421 | 5.197 | 4.988 | 7.793 | 4.611 | 4.439 |
| 13 | 6.750 | 6.424 | 6.122 | 5.842 | 5.583 | 5.342 | 5.118 | 4.910 | 4.715 | 4.533 |
| 14 | 6.982 | 6.628 | 6.302 | 6.002 | 5.724 | 5.468 | 5.229 | 5.008 | 4.802 | 4.611 |
| 15 | 7.191 | 6.811 | 6.462 | 6.142 | 5.847 | 5.575 | 5.324 | 5.092 | 4.876 | 4.675 |
| 16 | 7.379 | 6.974 | 6.604 | 6.265 | 5.954 | 5.668 | 5.405 | 5.162 | 4.938 | 4.730 |
| 17 | 7.549 | 7.120 | 6.729 | 6.373 | 6.047 | 5.749 | 5.475 | 5.222 | 4.990 | 4.775 |
| 18 | 7.702 | 7.250 | 6.840 | 6.467 | 6.128 | 5.818 | 5.534 | 5.273 | 5.033 | 4.812 |
| 19 | 7.839 | 7.366 | 6.938 | 6.550 | 6.198 | 5.877 | 5.584 | 5.316 | 5.070 | 4.843 |
| 20 | 7.963 | 7.469 | 7.025 | 6.623 | 6.259 | 5.929 | 5.628 | 5.353 | 5.101 | 4.870 |

# FORMULAE

**Annuity**

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

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

**Perpetuity**

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

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

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# *Business Management Pillar*

# *Strategic Level Paper*

# *P6 – Management Accounting – Business Strategy*

# *November 2005*

# *Tuesday Morning Session*