Actuarial Society of South Africa

EXAMINATION

October 2016

Subject A302 — Communications

EXAMINERS' REPORT

General Examiner's comments

QUESTION 1

This question tested candidates' ability to communicate a rating structure to an uneducated audience, who possesses no technical background, in a manner that could be understood by a them and was informative and persuasive enough to encourage water saving.

Candidates needed to create a pamphlet that consisted of a generic and household specific portion. A few candidates failed to separate out the information into two sections. The task was not technically challenging, although some candidates did not calculate the present and/or future water bill correctly.

It was imperative for candidates to transform the information given in the question in a way that could be readily grasped by households. It was expected that candidates would interpret the decrease in annual dam levels and the number of months' water supply remaining if the current situation continued for households. Those that merely reproduced data or gave vague results did not scored as well.

The old and new tariff system had to be explained in an understandable manner. Better candidates constructed a comparative graph of the cost of water usage per kl under both systems.

Few candidates determined how much water the given household had to save to enable them to receive the same water bill as under the old system. This would have been of interest to households. In addition, water savings tips that would help the household achieve a specific saving in kl terms would have been appreciated.

QUESTION 2

This question tested candidates' ability to explain the relative value of two investments in 20 years' time. Some of the values required in the letter had to be derived from the information given. It was alarming how many candidates could not determine the future value of an increasing annuity.

On the whole, candidates scored poorly on this question from a technical standpoint. Those who incorrectly determined that either renting or buying would be better under both growth environments were deemed to have committed a fatal flaw. Candidates who got the calculations wrong, but to a lesser extent (correctly stating which strategy outperformed the other in which growth environment), were penalised to a lesser extent. Even so, they would have found it more difficult to achieve an exemption than those who did the calculations correctly.

Candidates were not required or expected to give a recommendation, but rather to present the facts in an unbiased way.

Overall
Most candidates found question 1 more challenging from a communication point of view and question 2 more challenging from a technical point of view.

October 2016 A302 exam marking schedule

QUESTION 1: Pamphlet

Length: Full marks can be given if range falls within 450 – 550 and includes manually counted words in graphics/tables that have not been picked up by highlighted word count. Award 3 marks to students whose highlighted word count is within range (as indicated) but who have not manually added word/figures in graphics. Award 1 mark if actual word count is between 400 – 449 or between 551 – 600 (irrespective of whether they have added graphics word count or not). No marks if the word count is outside these ranges on either side.

Format: As the pamphlet is from a municipal service provider and aims to persuade customers to save water, it should use a clear and clean format which communicates at a glance (as people tend to throw these away). This should include headings, indication of a logo, paragraphing and a graphic and/or table. Marks are available for creating a design that would be appealing in terms of font (type and size), bold for headings, tables/ textbox/graphic, indentation, use of space etc. – the extrinsic aspects of structure and layout i.e. what does the pamphlet actually look like?

Language and tone: This section includes choice of words, register/level of language, style and tone etc. It is important that the pamphlet is written in an accessible tone to appeal to a wide audience. The language should be jargon free and aim to explain the need and seriousness of situation clearly and simply. The tone should be a careful balance between purpose to inform, persuade and to build personal rapport. The persuasion to save water should be based on fact, be courteous yet communicate how urgent/dire the situation is. Technical terms/abbreviations involving measurement should be easy to follow. The pamphlet should give the background to the situation first before giving specifics (from general to particular) So, "a household" will become "your household" so reader realises that the measurement and billing figures are related specifically to his/her household. A before/after picture (comparison/contrast) is useful to drive the point home. However, a consultative tone is still required, which is not familiar or colloquial as readers still strangers and this is a professional exchange.

Planning and structure: The opening about the drought situation should be interesting enough for reader to continue. The facts must be set out in a logical and coherent arrangement so that dam levels and billing tariff differences are clear. Internal arrangements of fact could include description/definition, explanation, comparison and contrast. How the pamphlet progresses through the different aspects must aid the explanation and realisation.]

Tables and graphs must underscore the impact of the changes. Any tables/graphs must be clearly embedded (lead-in) and add value to the leaflet. If student cuts and paste table(s) from exam question without adding any value and adds no other graphs, then this mark will be very low. Tables can be used if complemented by additional graphs to stimulate interest and aid persuasion.
This section is more about the intrinsic aspects of verbal and visual structure.

Overall impression: How does the pamphlet 'hang' together in terms of unity, coherence and emphasis, logical development, and overall structure of message? Do all the elements

above work together to create a good understanding of the situation? Would the reader be able to understand and be persuaded by the call to action: save water?

Content

Content marks for each point may be scaled down where the content is unclear.

1. Aridville experiencing draught

- Dam levels about *half* those in previous 3 years OR half that in
- If no further rainfall, current usage continues, then
- About 5 months until dams run dry

  {need to hedge comment by referring to circumstances in which will run dry}

- Aridville average 16.8 kl per month
- Higher than country average of 14 kl p.m.

2. Tariff system

- New from 1 Nov 2016
  - Summary: use < 14 kl, pay less in future and vice versa
  - First 5 kl still free

    {may be stated anywhere, including in separate sections or a table}
  - Remainder: change from flat R3 per kl to sliding scale
  - Sliding scale above free kl correctly given by student

- Generic word-based example for working out new household cost
  - Example correct and ends mid tariff block

  {full credit also given if 21 kl example given in words}
- Graphic depicting cost per kl used at old and new price

  {if graph only illustrates beginning of tariff block, but not in between – eg 12 kl – partial marks awarded}
- More water used, higher rate charged (average) per kl used

  {vague statements such as "the less water you use, the more you save not awarded marks}

3. Household specific
    - 21 kl used; bill = R48
    - Bill Nov onwards for same usage = R70.50; R22.50 more OR 1,5 times more
    - Reduce usage by 3 kl to keep bill at R48/ the same

4. Saving hints

- Example: household specific to save 3 kl or more
- Give other 3 savings options and website

Meeting the overall objectives

Overall, will households:

- Understand the need to save water: draught situation & monetary
- Understand
    - Old and new tariff system
    - Estimated future bill based on current usage i.e. R70,50
- Be encouraged to save water and know how to keep bill constant

*{**Note**: need to use less than 14 kl to reduce current bill under new tariff system, not just use less water than currently usin}*

2016/2017 Water tariffs Aridville logo

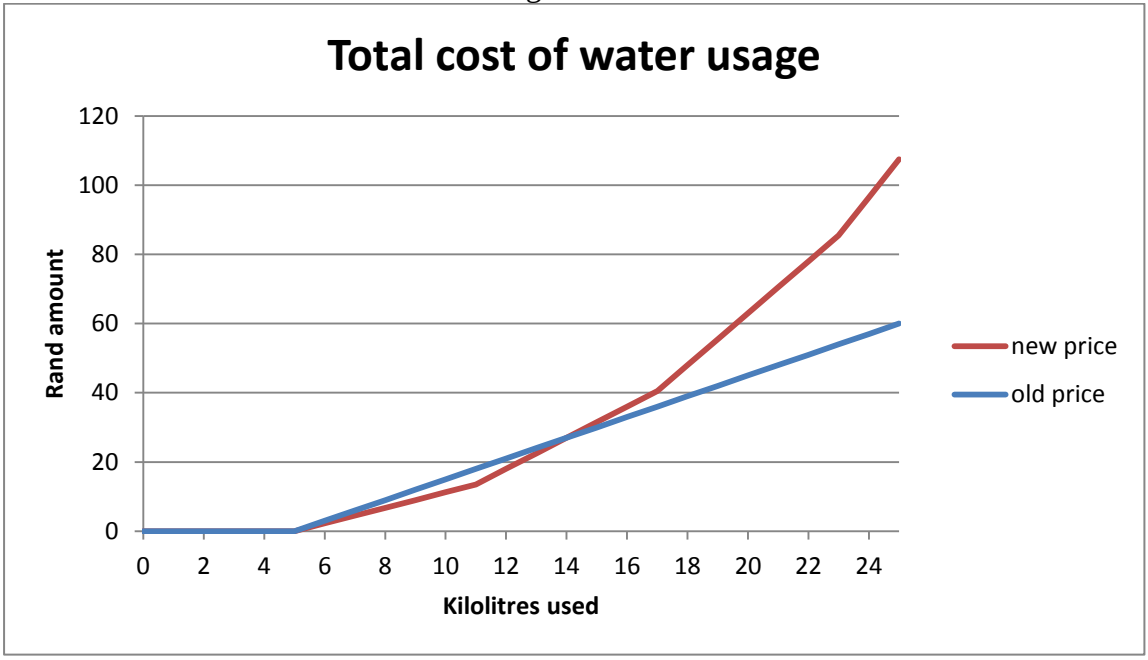
Water is one of our most precious resources. Aridville is experiencing a drought and current dam levels are about half that of the last three years. If no rains fall and Aridville's households continue to use water at their current rate, there is only enough water to last for another five months before our dams run dry!

Aridville's households currently use an average of 16,8 kilolitres (kl) of water a month. The average monthly usage for all the households in the country is lower at 14 kl a month. In an effort to encourage reduced water usage, a new tariff system will be introduced from 1 November 2016. Households using less than 14 kl of water a month will be rewarded by paying less than they do now. Those using more than 14 kl will pay more in the future. The first five kilolitres of water used by any household will still be supplied for free. If a household uses more water than this, they will no longer be charged a fixed amount of R3 for each kl used. Water will be charged according to a sliding scale in future. Customers who use more water will pay a higher price for each kl used. Water will be priced in five tariff blocks as shown below:

Tariff block	Number of kl in tariff block	Price per kl used in tariff block
1	5	Free
2	6	R2,25
3	6	R4,50
4	6	R7,50
5	unlimited	R11

For example, if a household uses 11 kl of water in a month, they will only pay for 6 kl of water. The first 5 kl are free and the 6 kl of water is charged at R2,25 a kl which amounts to R13,50 for the month. A household that uses 14 kl of water will pay R27. This is double the amount paid by the first household. The additional 3 kl they use falls in tariff block 3 and costs a higher rate of R4,50 a kl.

Total cost for various levels of water usage is shown in the chart below.



Your household used 21 kl this month and was billed R48. You will be charged R70,50 (R22,50 more than you paid this month) for this level of usage from next month onwards. However, if you save 3 kl of water next month then your water bill will remain unchanged at R48. Please see the *hints* block for ideas on how to lower your water bill and conserve our water.

Water-saving hints

Water savings build up quicker than you may think: a family of four who each shower for two minutes less a day will save around 4 kl in a month.

You can also save water immediately by:

- putting less water into your bath
- closing taps when not in use
- ensuring that any water leaks are fixed immediately.

For more detailed information of likely savings per household and further helpful tips on how to save water, please visit www.aridvillewater.gov.za/water savings .

word count: around 500

QUESTION 2

Letter

Length: Award 4 marks if the actual word count is between 500 and 600 or 1 mark if between 450 and 499 or 601 and 650. No marks if the word count is outside this range.

Format Sender's address is a letterhead box across top of page simply stating: <Company letterhead and address, including full including contact details>. The date should be on right OR left, but not below the recipient's address. It should be written out formally e.g. 3 January 2016. Recipient's address should include his name (Mr Thami Dlamini or Mr T Dlamini) and address (no punctuation). The format mark also include a subject line, the salutation (Dear Mr Dlamini) and close (Yours sincerely). Students should indicate <signature> before giving name in full (e.g. Mike James) without title and add sender's position below name. If they include anything with letter, can also add Enc.(1) for instance. Marks will be lost if student chooses a "Dear Sir/Madam" approach. Correct spacing throughout is crucial.

Language: This section includes choice of words, register/level of language and avoidance of jargon/formulae. It also includes style and tone, grammar, punctuation, spelling etc. Tone should be professional, courteous and formal in that Mr Dlamini is a stranger to writer and new to company. However, personal language can be used as writer is dealing with his enquiry exclusively and he is a high net worth client - good impression important. If figures misleading, vague, ambiguous, etc., penalise accordingly especially if this is combined with a recommendation.

Planning and structure of content: This involves the use of headings in the letter. Also includes the logical, coherent arrangement of information comparing rental versus property ownership and 5% versus 4%. All assumptions must be covered. Look for good sentence and paragraph structure, clear use of information without technical formulae etc. as well as good beginning, middle, end conventions: Opening paragraph: goodwill and topic identification; relevant body explanations and close: goodwill once again and pointing the way ahead in terms of offer of contact (recommendation not required!). Adding a personal contact number/extension or email a good idea as unlikely to be in the letterhead.

Overall impression: How does the whole letter 'hang' together in terms of clarity and completeness? Would Mr Dlamini be satisfied with this reply or would he have further queries/requests for clarification?

Content

Content marks for each point may be scaled down where the content is unclear.

1. Situation review:

- Rental: A$27 200 pa, growing at 4% pa (not merely stating "inflation"}
- Options: buy and maintain or rent and invest in fixed interest
- Maintenance costs of 1% pa of property value
- Fixed interest at 8% pa
- As rent increases, fixed interest investment decreases

2. 5% pa expected growth in house prices

- Fixed interest investment worth A$1 152 000 in 20 yrs
- Owning home = investment or asset; Expected value $1 804 000 in 20 yrs
- A$652 000 more than rental, ignoring maintenance costs OR maintenance costs here = A$ 491 000
- Allow for maintenance costs by increasing fixed interest investment
- Property still A$161 000 more advantageous

3. 4% pa expected growth in house prices

- Fixed interest investment unaffected : bond & rental payments fixed
  {say explicitly or show in numbers}
- House value A$1 490 000 in 20 yrs
    - A$314 000 less than current expectations
    - reduces benefit of home ownership
- Maintenance now A$38 000 less; fixed interest also OR maintenance costs here = A$453 000
- Renting now A$115 000 more advantageous than buying

4. State principle that changing house price expectations impacts which option better
   {not just give comparative figures and leave principle unsaid}

Meeting the overall objectives

Overall, will the client understand:

- House ownership = asset / has value
- Why maintenance costs added to fixed interest investment

Follow calculations under

- 5% growth
- 4% growth

Be likely to continue to be a client *{zero if calculations wrong}*

Company letterhead and address, including full contact details

3 January 2016

Mr Thami Dlamini
PO Box 1
Edgewood City
7550

Dear Mr Dlamini

Relative financial attractiveness of rental versus property ownership

Thank you for your letter dated 1 January 2016 about the relative financial benefits of renting or buying a house. A reduction in expected house price growth over the next 20 years will impact which option is better. I will explain the impact that house price growth, and an allowance for maintenance costs, has on the relative value of house rental versus ownership.

5% expected growth in house prices
You currently rent a house for A$27 200 and invest A$32 800 in a fixed interest investment at the start of each year. As your rental increases at 4% p.a., your annual investments will reduce (but still remain positive). Your fixed interest investment would indeed grow at 8% p.a. to around A$1 152 000 by the end of 20 years.

Alternatively, you could combine the above amounts and use the full A$60 000 to buy your house. Home ownership is an investment. Your home is expected to grow at 5% p.a. in value from A$680 000 to around A$1 804 000 after 20 years. Ignoring maintenance costs, buying your house would leave you with an investment worth around A$652 000 more than if you continued with your current rental arrangement.

As a home owner, you would need to pay an additional annual maintenance cost of 1% of the market value of your property to retain its value. To make a fair comparison between buying and renting a house, we need to allow for an increase in the fixed

interest investment equal to this. Allowing for accumulated maintenance costs of around A$491 000, buying the property would still be around A$161 000 more advantageous than renting it. The situation changes if house price growth slows to 4% p.a.

4% expected growth in house prices
A change in the rate at which house prices grow will not impact the value of your fixed interest investment. This is because mortgage repayments are fixed when a loan is taken out and your rent increases yearly at a fixed rate.

If houses increase in value at 4% p.a., then your house will be worth around A$1 490 000 in 20 years' time. This is A$314 000 less than under current expectations, reducing the benefit of home ownership. Only allowing for this change, it would now be A$153 000 more advantageous to rent your property.

However, the annual cost of house maintenance is dependent on the market value of the house. Future maintenance costs will be lower than is currently the case if house growth slows to 4% p.a. Your annual fixed interest investments would therefore be smaller. The value of your fixed interest investment would be A$38 000 lower after 20 years. This reduces the relative value of renting a property. Renting is therefore expected to be A$115 000 more advantageous than buying a house.

Conclusion
It is AS161 000 more beneficial to buy and maintain your house than to rent it if house market prices grow at 5% p.a. If house price growth reduces to 4% p.a., it becomes A$115 000 more beneficial to rent your house and continue with your fixed interest investments.

Please write back or call me on +99 22 8576 if you would like to discuss this interesting topic further.

Yours sincerely

<signature>

Leslie Grant
Investment Consultant

Around 550 words

END OF EXAMINERS' REPORT

