INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2016

Subject SA4 – Pensions and other Benefits Specialist Applications

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chair of the Board of Examiners
July 2016

© Institute and Faculty of Actuaries

A. General comments on the *aims of this subject and how it is marked*

1. The aim of the Pensions and other Benefits Specialist Applications subject is to instil in successful candidates the ability to apply knowledge of the United Kingdom pensions and employee benefit environment and the principles of actuarial practice to providers of pensions and employee benefits in the United Kingdom.

2. This subject examines the ability of candidates to apply actuarial practice and concepts, together with specific knowledge of the UK pensions and employee benefit environment to potentially complex problems, integrating their analysis into a coherent whole, and evaluating and interpreting results to draw explicit conclusions.

3. The Examiners therefore look for candidates to demonstrate their understanding of the syllabus but in particular they need to demonstrate ability in applying their knowledge and core actuarial skills to the specific situations that the Examiners have raised, having read the question carefully. Consistently, many of the unsuccessful candidates provide answers that are not sufficiently specific to the subject matter of the question, reproduce core reading that does not directly relate to the question context, or focus on one specific point without covering a sufficient range of points to answer the question. This does not enable the candidates to achieve the required marks. As regularly stated, the Examiners encourage future candidates to remind themselves of what they learned in the Core Actuarial subjects, and to use past paper questions to practice applying these skills to the specific scenarios tested.

4. Good candidates demonstrate that they have structured their solutions well – this is a big advantage in making points clearly and without repetition. There is a significant incidence of points being repeated in slightly different ways, restricting the scope for candidates to score marks. Good structure enables candidates to use the latter parts of questions to generate ideas for answers to the early parts (or use their solutions to earlier parts of questions to create a structure for latter parts). Time management is important so that candidates give answers to all questions that are roughly proportionate to the number of marks available. The questions are set so that it should take approximately twice as long to answer a 10 mark question as a 5 mark one. Answers should therefore be similarly proportionate.

5. In addition, candidates should carefully consider the instruction – for example an instruction to list points should be answered with a list without attaching discussion. Similarly, a question asking for a discussion cannot be answered with a list of undeveloped points.

6. Finally, it is very helpful to the Examiners if candidates clearly identify points made; if they are set out clearly, well-spaced and easily legible. Whilst there is no loss of marks for not doing so, doing so does make it easier to identify scoring opportunities.

B. General comments on *student performance in this diet of the examination*

1. The overall standard of scripts was similar to the previous session, with candidates over recent years maintaining a very consistent level of performance.

2. The step up from the earlier subjects to a smaller number of more involved questions is relatively difficult for some candidates who find the application aspects of the course harder to score well on. This is an area that SA candidates consistently need to work harder on in their preparation. By taking a methodical approach to answers, step by step, however, there are opportunities to score well. It is important that candidates make sure they provide a full answer to all questions. Breaking the question down into smaller parts helps to make sure that a suitable breadth of answer is supplied. It is critical that candidates check that their answers specifically refer to the details of the question, using all of the information in the question pre-ambles. It is not the intention of the Examiners to include information in the questions that is not relevant to the answers. Taking care in these points of technique will help students score better.

3. More detailed feedback is provided on each question below.

C. Comparative Pass Rates for the past 3 years for this diet of examination

Year	%
April 2016	44
September 2015	44
April 2015	42
September 2014	40
April 2014	36
September 2013	39

Reasons for any significant change in Pass Rates in current diet to those in the past:

The Pass Rate for this examination diet is in line with recent sessions.

D. Pass Mark

The Pass Mark for this exam was 59%.

Solutions

Q1 (i)

- TAS R – Reporting, TAS D – Data and TAS M – Modelling are generic TASs
- TAS P – Pensions is a specific pensions TAS
- All apply to reserved work and aggregate reports

TAS R – Reporting
- The purpose of TAS R is to ensure that the reporting of actuarial work enables users to judge the relevance
- … and understand the implications of the report's contents
- and that the information is presented in a clear and comprehensible manner
- It has requirements covering data used,
- assumptions made
- method of calculation
- cashflows being quantified
- relevant risks involved
- development of the results (comparison with previous results, projected future results)

TAS D – Data
- Its purpose is to ensure that data is subject to sufficient scrutiny and checking
- so that users can rely on the resulting actuarial information,
- and that appropriate actions are taken where data is inaccurate or incomplete
- It includes documentation requirements relating to the data checks made
- and the approach taken to incomplete or inaccurate data

TAS M – Modelling

- Its purpose is to ensure that actuarial models sufficiently represent the issues that are relevant to the user's decisions
- and are fit for purpose both as theoretical concepts and as practical tools.
- TAS M requires that models are properly documented
- … including the checks made on the model, and the data and assumptions used as inputs for each run of the model.
- Material limitations of the model and their implications must be included in the aggregate report.

TAS P – Pensions
- Applies to some non-reserved work
- Its purpose is to ensure that trustees, sponsors and other relevant parties are provided with sufficient information to enable them to make decisions which relate to the financing of the pension scheme
- or affect the benefits payable to members of the pension scheme
- and to enable them to carry out their regulatory responsibilities.

- Information should be included on risk and uncertainty.
- Its purpose is also to ensure that actuarial calculations which result in payments to or from pension schemes are performed correctly and are carried out using methods, measures and assumptions which are fit for purpose
- It includes requirements relating to making assumptions,
- obtaining data
- setting actuarial factors
- showing an approximate neutral estimate alongside the prudent technical provisions
- including information in the formal funding valuation report

- APS P1 – Duties and responsibilities of members undertaking work in relation to pension schemes
- The purpose of APS P1 is to set out ethical obligations for members undertaking work in relation to pension schemes.
- APS P1 sets out the matters that should normally be covered by a Scheme Actuary's appointment with the trustees
- APS P1 also sets out other responsibilities of Scheme Actuaries to inform the trustees of any significant matter arising that might have an impact on the financing of the scheme
- share their concerns with the trustees if they have material concerns about the way the trustees are fulfilling their duties
- notify the trustees of any relevant wider issues to consider when giving an actuarial certificate
- notify the trustees of any conflicts of interest

- APS X2 – Review of actuarial work
- It sets out the circumstances in which a Scheme Actuary is required to seek a review of their written work
- … and whether it should be independent

- The Actuaries' Code
- Sets out five core principles that actuaries are expected to observe in their professional lives
- In particular, competence and care, and communications

(ii)

- General – assumptions should contain a degree of prudence consistent with the employer covenant
- … and with SFO legislative requirements for prudence
- … and with each other so that the basis is considered in aggregate
- Assumptions may allow for prudence
- Inflation – base on difference between fixed and index-linked gilt yields
- E.g. 2.5% – (–0.5%) = 3.00% per annum
- Assume that a bond yield plus risk premium approach is used (or other methodology as appropriate)
- Using separate pre and post discount rates

- … reflecting how the investment strategy might change over time for a closed scheme e.g. is a 20 year duration gilt yield appropriate
- Pre retirement discount rate based on equity returns, e.g. margin over gilts
- Allowing for inflation risk premium
- And allowing for investment management expenses
- E.g. 2.5% + 4% (margin over gilts) – 2% (prudence) – 0.5% (expenses) = 4% per annum
- Post retirement discount rate based on corporate bond yields
- And investment management fees / expenses
- E.g. 3.5% – 0.25% (prudence) – 0.25% (expenses) = 3% per annum
- Pension increases based on inflation assumption
- Adjusted for effect of cap
- E.g. 3.00% – 0.5% = 2.5%
- A salary increase assumption is not required as the scheme is revalued career average

Other valid derivations were given credit.

(iii)

- Trust Deed and Rules
- Announcements to members
- Scheme booklet
- Minutes of Trustee Meetings
- Details of special arrangements for any members
- Details of pension increases granted
- And intentions for the future
- Including any discretionary increases
- Details of actuarial factors used by the Scheme
- Previous actuarial valuation reports and associated documents
- Data relating to the future operation of the Scheme, including:
    - Future investment strategy
    - Any planned benefit changes
    - Events that might affect the sponsor covenant
    - Views on future discretionary practices
- Annual accounts for the Scheme for the intervaluation period
- Full details of the Scheme's assets at the valuation date
- And at the previous valuation date to permit an analysis of experience
- Data relating to longer-term experience of scheme to set demographic assumptions e.g. mortality base table
- Current market conditions e.g. gilt yields
- Covenant review reports

(iv)

- Investment Risk - the Scheme's assets may not achieve the investment returns necessary to meet the liabilities
- Interest rate risk – funding position will be volatile in the short term if assets are not matched to liabilities

- Longevity Risk – the Scheme's pensioners may live longer than expected, with the result that insufficient assets have been reserved to meet their benefits
- Inflation Risk – as the benefits are linked to inflation, higher than expected inflation may result in the benefits being more expensive than expected
- Employer Covenant Risk – the risk that the sponsor is unable to provide any additional resources that may be required to fund the benefits
- Regulatory / Political Risk – changing legislation my increase the cost of benefits
- Risk of expenses being higher than expected
- Risk of fraud
- Selection risk – Members exercise options to their own advantage
- Liquidity risk – sufficient liquid funds will not be available to pay benefits as they fall due
- Currency risk as over 60% of the Scheme's assets are invested in global equities

(v)

- The trustees should obtain further details about the employer covenant
- Is the weakness related to the sponsor's balance sheet…
- …or current profitability / trading conditions…
- …and is the weakness likely to be temporary or permanent…
- Discussion with the sponsor is likely to be necessary
- … particularly concerning business plans and intentions with regards to cashflow
- … and the immediate impact on the scheme e.g. redundancies
- Is the weakness in covenant related to this employer only or the whole industry)
- The Trustees should assess the implications of the covenant assessment for their funding strategy,
- I.e. technical provisions (are the technical provisions consistent with the revised covenant position)…
- …and length of recovery plan (if any) (can the employer afford the contributions and will they be around to pay them); and
- Investment strategy…
- …i.e. ability to withstand adverse investment returns
- Are there any ways that the Trustees can aid the employer without jeopardising the security of benefits,
- Such as agreeing to a longer recovery plan in exchange for alternative security
- Consider impact on option terms and consent required e.g. for Cash Equivalent Transfer Values,
- And any discretionary benefits

(vi)

- Investment risk – invest the Scheme's assets in lower risk asset classes such as government bonds

- Consider investing in assets that are expected to earn a return connected with inflation over the long term
- Such as equities
- Matched to the currency, duration and inflation sensitivity of the liabilities
- Improve diversification of the investment portfolio
- Invest in interest rate swaps etc.
- Consider insurance products such as annuities
- Longevity risk – consider insurance products such as annuities
- Or the use of longevity insurance / swaps
- Inflation risk – ensure bonds are correctly matched to inflation linked liabilities
- Employer covenant risk – use prudent assumptions to calculate technical provisions
- And invest cautiously
- So that Scheme is less reliant on financial support from the sponsor
- E.g. fund on a self-sufficiency basis
- Consider investments that will pay out in the event of sponsor insolvency, e.g. credit default swaps, insolvency insurance
- Ask for contingent assets that will be taken over by the Scheme in the event of sponsor insolvency such as a fixed charge over land or property or a floating charge over other assets…
- A special purpose vehicle may be able to help
- Regulatory / Political Risk – take regular professional advice
- Expenses Risk – regular benchmarking of service providers and robust fee and service level agreements
- Fraud – have robust internal controls in place
- Liquidity risk – review profile of contribution and investment income versus benefit outgo and ensure sufficient liquid assets are held to meet any shortfall
- Currency risk – hedge risk or hold more UK assets

(vii)

- the liability structure may have changed significantly
- E.g. the cashflow requirements could have changed from positive to negative…
- …or the Scheme may have closed to benefit accrual
- … meaning the duration of the liabilities will become shorter requiring a review of the invested assets
- the funding position may have changed significantly
- the manager's performance may be significantly out of line with that of other funds
- legislation may have changed
- New investment products or services may have been developed…
- …e.g. Liability Driven Investment
- The economic environment / investment landscape may have changed…
- …altering the relative attractiveness of different asset classes…
- …or their relative riskiness...
- The employer covenant may have changed

- Regular benchmarking of the investment manager can help ensure that fees paid are competitive
- It is a regulatory requirement to review investments every three years
- Investment taxation rules may change

(viii)

- the minimum and maximum holdings permitted in different asset classes
- the kinds of investments held
- the balance between different types of investments
- the risks relating to the current investment policy and the expected returns
- the policy for meeting the Statutory Funding Objective
- the realisation of assets
- the maximum investment in any one company
- the maximum investment in illiquid assets
- the use of futures and options
- the policy on self investment
- the extent of any exposure to foreign currency
- the trustees' policies on corporate governance and socially responsible investment

(ix)

- The risk based levy is calculated as U × IR × LSF, where
- U = underfunding of the scheme
- IR = measure of insolvency risk; and
- LSF = risk-based levy scaling factor
- LSF is set at 0.65 for the 2015/16 levy year
- And also 0.65 for the 2016/17 levy year
- The risk-based levy will be capped at a maximum of 0.75% of unstressed liabilities for the 2015/16 levy year.

(x)

- Assuming that the levy is based on the stressed value of assets and liabilities
- Stressed liabilities – reduce discount rate by 2/3% and increase inflation by 1/3%
- i.e. net discount rate reduces by 1%
- Stressed assets – adjust asset value by factor which depends on asset allocation
- Asset classes which are considered the best match for liabilities receive the most favourable adjustment

- Stressed liabilities = £450m × 1.01^{25} = £577m
- Asset stress factors: Global equities –18% (approx.), Corporate bonds 0%, Index linked gilts +16%
- Old stressed assets = £400m × (5/8 × 0.82 + 3/8 × 1) = £355m
- Old risk based levy = (£577m – £355m) × 0.53% × 0.65 = £0.76m
- New stressed assets = £400m × (30% × 0.82 + 70% × 1.16) = £423m
- New risk based levy = (£577m – £423m) × 0.53% × 0.65 = £0.53m

- Reduction in levy = £0.76m – £0.53m = £0.23m

Credit was given where candidates could not remember the levy factors exactly but used sensible approximations

> Part (i) – Some candidates scored very well, but some did not know their bookwork. Very few candidates wrote enough to score full marks.
>
> Part (ii) – Generally well answered.
>
> Part (iii) – Generally well answered, especially by those candidates who used a good structure to write their answers.
>
> Part (iv) – Few candidates listed enough distinct risks, and instead went into great detail on a smaller number of risks.
>
> Part (v) – Many candidates went into lots of detail about how to measure covenant but few considered the wider points.
>
> Part (vi) – Well answered by those candidates that identified a wide range of risks in part (iv).
>
> Parts (vii) and (viii) were generally well answered.
>
> Almost all scored well on part (ix), but part (x) was a differentiator. The better candidates did something sensible and scored well; others appeared flummoxed.

Q2 (i)

- The transfer value must be no less than the expected cost within the scheme of the deferred benefits given up…
- …calculated on a best estimate basis…
- with reference to the investment strategy within the scheme
- …having regard to the market rates of return from equities, gilts and other assets as appropriate
- The Trustees are responsible for setting the assumptions for calculating transfer values
- The Trustees must take advice from the Scheme Actuary
- If the Trustees wish to provide more than the minimum transfer value, the sponsor must be consulted
- Pension increases that are promised in the scheme's rules must be allowed for
- Transfer values may include an allowance for discretionary post retirement pension increases depending on their likelihood.
- The cost of options or guarantees available to the member must be allowed for if these are more expensive to provide than the pension benefit
- … to the extent they are taken up by members

- An option only needs to be considered if it does not require consent by the trustees and / or the employer
- Allowance may be made for the cost of calculating the transfer value. Expenses are also saved if a transfer value is paid out. A common approach is to ignore both aspects of expenses in the calculation.
- The Trustees may reduce transfer values if the Scheme is underfunded…
- …to avoid the security of other members' benefits being eroded
- Administrative requirements apply e.g. timescales for quotation and payment

(ii)

- The board may want to encourage transfers out of the Scheme
- In order to reduce the investment risk faced by the sponsor
- As well as longevity risk
- … as in particular ,the exercise affects deferred pensioners longevity risk
- And inflation and other risks
- And possibly reduce its balance sheet deficit
- If the enhanced transfer value basis is weaker than the accounting basis
- Or reduce costs
- If a future buy-out is planned particularly as this can be expensive for deferred benefits
- Assuming the enhanced transfer value basis is weaker than a buyout
- There may be a very low incidence of transfers on the non-enhanced basis meaning that this aim is not currently achieved
- It may reduce future administrative expenses
- Or the PPF levy
- The directors individually may be thinking about taking advantage personally of the enhanced transfers
- The directors may benefit personally if the sponsor gains a financial advantage from other members transferring
- The directors may wish transferring members to participate in the surplus
- … although the 5% enhancement appears low compared to the SFO funding level
- … but could better reflect the possible surplus on a solvency basis

(iii)

- The director may believe that he can secure a better income by transferring to a defined contribution scheme
- He may be in poor health and not expect to benefit from a lifetime pension
- He may be single and not get any value from any spouse's pension provided by the final salary scheme
- He may prefer the flexibility of income available under a defined contribution scheme
- E.g. a lump sum to pay off debts
- He may not require an income from his pension
- Due to other sources of wealth
- And prefer to hold a defined contribution pension as an inheritance vehicle for his children

- Taking advantage of the advantageous rules governing taxation of death benefits
- He may have concerns over the financial strength of the sponsor
- And the fact that he would see a reduction in benefits if the Scheme enters the PPF
- Early retirement terms in the Scheme may be penal
- or early retirement not allowed

(iv)

- The Director risks ultimately receiving a lower income from the defined contribution scheme
- If it suffers poor investment returns
- Or high expenses
- If he lives longer than expected
- Or if inflation is higher than expected
- He faces the risk of paying extra tax (lifetime allowance)
- As the transfer value is greater than the assessed value of his pension (20 times pension for lifetime allowance purposes)
- He risks missing out on possible future discretionary pension increases
- Regulatory risk that the defined contribution pension may not have the required features
- E.g. beneficial taxation of death benefits could be removed
- The Scheme faces investment risk during the guarantee period
- The risk of selection against the Scheme
- E.g. if the director is in poor health
- And liquidity risk – i.e. the need to realise a large proportion of the fund quickly
- Reputational / legal risk if this is considered to be "mis-selling"
- Possible reputational risk for the MD if the company subsequently fails
- It may lead to further members taking transfer values and lead to a materially smaller scheme with more volatile experience

Part (i) – Answered very well.

Part (ii) – The better candidates thought about this from lots of angles.

Parts (iii) and (iv) – Candidates generally scored well. Candidates generally found the risks facing the MD easier than the risks facing the Scheme in part (iv).

Q3 (i)

- Deferreds and pensioners – no immediate impact on benefits
- Active members will become entitled to a deferred pension
- In respect of past service
- Based on pensionable service to the closure date
- And pensionable salary at the closure date
- The final salary link will be lost

- Unless Scheme is closed in such a way that this is maintained or underpinned
- The deferred pension will revalue in line with price inflation (subject to a cap) up to retirement age
- The deferred pension may be more or less valuable than the accrued final salary pension
- Depending on how future salary increases compare with price inflation
- The impact on active members will vary according to their age
- Younger members will lose out more on future benefits
- …but they also have a longer term in which to make up any shortfall
- Members with short service (less than 2 years) may be entitled to a refund of contributions…
- …or a transfer value instead of a deferred pension
- The employer will need to put in place pension scheme for future service
- Which at least satisfies the auto-enrolment requirements
- This is likely to be a defined contribution scheme
- The member contributions will change to those required under the new scheme
- How the future benefits compare will depend largely on the level of employer contributions
- Which may well be lower than the cost of the final salary scheme
- The member would be exposed to more financial risks
- E.g. investment risk
- And longevity risk
- The death in service and ill health benefits are likely to be different
- All members – second order impact on security of benefits
- … and discretionary benefits
- Any future covenant improvement may result in increased job security for the active members

(ii)

- Review the sponsor's business case for putting forward the changes and ensure it is robust
- .. and to understand the reasons for the proposal
- The trustees must act within trust law, the trust deed and rules and legislation
- The trustees are required to act in the best interest of the Scheme members
- The trustees should take advice
- The security of accrued benefits is normally considered a priority over the level of future benefits
- The proposal is likely to result in lower costs and/or less risk for the sponsor
- Hence less valuable benefits for active members
- Level of benefits for deferreds and pensioners are not directly affected
- However, the security of benefits for all members should be improved
- Weighing up lower level of benefit against improved security will not be easy
- Especially as different categories of member are affected differently

- Can the sponsor achieve the same outcome in a different way if the trustees do not agree?
- E.g. by terminating employment contracts and re-hiring
- What replacement benefits are offered to the active members?
- What impact will the proposed change have on the sponsor covenant?
- Can the sponsor afford to fund to buyout level if the trustees trigger a wind-up?
- What impact will the severing of the salary link have on the funding level of the Scheme?
- Nevertheless, the trustees will wish to consider the replacement pension scheme for active members…
- …and suggest enhancements if it is considered poor
- So the proposal will be easier to agree to if the sponsor covenant is weak
- Should the trustees use the leverage they have to encourage the sponsor to abandon or improve the proposal?
- Or to improve security by making a cash injection into the scheme.
- Do any of the trustees have a conflict of interest
- As a member or director/shareholder
- The trustees may consider that future service pensions are a matter for the sponsor and employees to agree between themselves
- And insist on fair play during the consultation process
- e.g. by reviewing communications
- … however the trustee could consider exercising their power to influence the future benefits of members generally

(iii)

- The trustees may consider a wind-up to be in the best interest of scheme members and follow this course
- The sponsor is unlikely to want to trigger a wind-up
- Given the cost of immediately funding to buy-out level
- The trustees could use this as leverage to negotiate for an improved rate of funding following an updated valuation report
- As a condition for agreeing to run the Scheme as a closed fund
- I.e. stronger technical provisions
- And a higher contribution rate to eliminate any deficit
- Or a lump sum cash injection
- In connection with this, the trustees could move to a more cautious investment strategy
- E.g. a greater proportion of bonds
- Or a liability driven investment strategy
- To match liabilities more closely
- Possibly with selective use of annuities
- One plan might be to fund on a self-sufficiency basis
- And aim to achieve a fully funded position over a number of years
- Need to consider policy for any future discretionary benefits
- Review actuarial factors and transfer basis
- The trustees could ask for contingent security instead of cash

- The trustees could take steps to make an ultimate windup easier, e.g. a data validation exercise
- Review the sponsor covenant and commitment to the scheme
- Possible communication with TPR
- … and with members generally

Part (i) – Candidates who used a systematic approach to answering this part scored more highly.

Part (ii) – To score well, candidates needed to demonstrate they understood how each issue could affect the Trustees' decisions. Many simply made generic statements such as 'consider covenant'.

Part (iii) – Most candidates stated the key points, but lacked the detail needed to score more highly.

END OF EXAMINERS' REPORT