INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2018

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.

Mike Hammer
Chair of the Board of Examiners
December 2018

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. 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.

7. Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

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

This was seen to be a challenging exam, particularly as some of the knowledge based questions came from parts of the syllabus that are tested less frequently.

As with previous years the application aspects of the course are harder to score well on. This is an area that SA4 candidates consistently need to work harder on in 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.

Candidates should take note of the command verbs used to guide the depth given in their answers (a list of what is expected for each verb is available on the IFoA website).

Candidates should also note the number of marks available for each question as a guide of how many points they need to cover.

The examination team assessed the minimally competent candidates and deemed 51 to be an appropriate pass mark. The pass mark was then scaled to 55 and candidates awarded an upward adjustment.

C. Pass Mark

The Pass Mark for this exam was 55.

Solutions

Q1

(i)

- Share sale [½]
- The employing entity is purchased [½]
- Employees' contracts will be maintained [½]
- Entitlement to future final salary benefits will depend on employment contracts [½]
- Asset sale [½]
- The employing entity is not purchased [½]
- The TUPE legislation applies [½]
- This sets out the minimum level of future benefits that the purchaser must provide to transferring employees [½]
- In general there is no additional protection given to accrued rights beyond that required by vesting requirements in the vendor's scheme [½]

Gives marks even if asset/share sale not specifically mentioned but described correctly
[max 3]

(ii)

- Adjustment for accrual rate [½]
- 1 year in Seller Inc scheme becomes 1 year * 60 / 80 in Buyer Corp Scheme [½]
- = 0.75 years [½]
- Adjustment for Normal Retirement Age [½]
- Assume discount rate pre retirement of 5% per annum
- Assume pensionable salary increases of 3% per annum (or increases in deferment)[½]
  If sensible net discount rate assumed then give both marks too
- Assume annuity rate at age 62 of 26 (or something sensible) [½]
- Assume annuity rate as age 65 of 24 (or something sensible) [½]
- Assume no pre-retirement decrements [½]
- 1 year in Seller Inc scheme becomes 1 year * (1.05/1.03)^3 * 26/24 in Buyer Corp Scheme [½]
- = 1.148 years [½]
- Extra point if candidate discusses 2 ways to value accrued benefits – as vested benefits or allowing for future pensionable salary increases [½]
- Combining the two, 1 year in Seller Inc scheme becomes 1 year * 0.75 * 1.148 = 0.86 years in Buyer Corp Scheme [½]

[max 4]

(iii)

- Cost of 1 year of benefit in Seller Inc scheme = 20% + 3% = 23% of Pensionable Salary [½]
- Using the assumptions from part (ii) [½]
- Cost of 1 year of benefit accrual in Buyer Corp scheme = 23% / 0.86 [½]
- = 26.7% of Pensionable Salary [½]

- Standard Contribution Rate (employer) = 26.7% - 5%= 21.7% of Pensionable Salary [½]
- Therefore could increase member contribution rate by 1.7% to 6.7% of Pensionable Salary to maintain employer Standard Contribution Rate at 20% [½]

Give credit for using results from part (ii) even if those figures not correct

[max 2]

(iv)

Impact on transferring members

- The member contribution rate is an increase on the 3% currently paid to Seller Inc's scheme [½]
- The increase may be unpopular with members [½]
- Despite the new pension benefits being more valuable [½]
- Some members may not be able to afford the increase [½]
- Some members may leave scheme due to higher cost [½]
- Could be further changes to members' contributions in the future [½]
- May be unfair to provide the same benefits as existing Buyer Corp employees get for a different member contribution rate [½]

Impact on the Sponsoring Employer

- No immediate impact on cash cost [1]
- But may be immediate accounting cost [½]
- Buyer Corp's pension scheme may use different funding assumptions than Seller Inc's scheme [½]
- Perhaps due to a different investment strategy [½]
- A different degree of prudence in the assumptions [½]
- Or different membership profile (e.g. higher/lower average age) [½]
- Hence Ionic Metalworks may be required to contribute towards future service at a different rate from 20% [½]
- The assumptions used for accounting purposes may be different from the funding assumptions [½]
- Hence the cost of accrual in the company accounts may change even though the cash cost remains the same [½]

[max 6]

(v)

- Pensions normally form a separate schedule of the Sale and Purchase Agreement. [1]

  Typical sections would include:
- Definitions of terms used, for example: [½]
- completion date [½]
- date at which the sale and purchase is completed, and employees move from the Vendor to the Purchaser [½]
- transfer date [½]
- date at which transferring members leave the Vendor's Scheme and join the Purchaser's Scheme [½]
- participation period [½]
- time between completion and transfer dates (sometimes called the interim period) where the employees have transferred employment to the Purchaser but still remain in the Vendor's Scheme for a short period for administrative or other reasons [1]

  give ½ a mark for an incomplete definition

- payment date [½]
- date at which the transfer value is paid (or the outstanding balance if earlier part payment has been made) [½]
- in-service employees – employees of the entity or business sold at completion date [½]
- transferring members – those members of the Vendor's Scheme who transfer on the transfer date to the Purchaser's Scheme [½]
- The purchaser will want the document to include indemnities and warranties relating to pensions [½]
- The obligations of the Vendor, for example: [½]
- to supply all relevant information [½]
- to make good any shortfall in transfer value from the Vendor's Scheme [½]
- to use best (or more commonly reasonable) endeavours to ensure that the Trustees pay over the agreed transfer amount (as the Trustees are not bound by the Agreement) [½]
- to allow the transferring employees to remain in its scheme temporarily [½]
- The obligations of the Purchaser, for example: [½]
- to provide an appropriate scheme [½]
- to participate in and contribute to the Vendor's Scheme for an agreed period [½]
- to make the necessary announcements to members and applications to the supervisory authorities [½]
- where past service transfers are part of the deal, to use all reasonable endeavours to ensure the Purchaser's Trustees provide past service benefits for the transferring members equal to the terms agreed in the Agreement [½]
- Indemnities and warranties [½]

- In the warranties, the vendor typically guarantees the accuracy of the data supplied
  to the purchaser during the negotiations [½]
- This includes formal disclosure of the scheme documentation [½]
- And any outstanding complaints or litigation [½]
- Indemnities are typically given against specific issues or events [½]
- For example potential or pre-existing legal claims [½]
- An "Actuary's Letter" will be included [½]
- setting out the agreed basis for transfer [½]
- This is a letter from the vendor's actuary to the purchaser's actuary [½]
- Specifying the actuarial method and assumptions agreed upon for the calculation of
  the liabilities, [½]
- the calculation date, [½]
- the timing of any payment and how the liability figure is adjusted to reflect the period between calculation and payment. This clause will cover a number of areas: [½]
    - how any experience items will be dealt with (deaths, salary increases, etc.) [½]
    - at what rate liabilities will be rolled up (in line with an index, in line with asset performance, etc.) [½]
    - potentially how assets backing the liabilities will be invested during the period between calculation and payment (to minimise the asset/liability mismatch) [½]
- who does the calculations, who agrees them and how close those calculations need to be to one another to signify that agreement has been reached [½]
- what happens in the event of a dispute [½]
- whether cash or assets are to be transferred [½]

[max 12]

(vi)

General issues – both sets of Trustees

- Consider Trust Deed & Rules [½]
- Duties under legislation [½]
- Regulatory guidance [½]
- Communication to members [½]

Trustees of Seller Inc's Scheme

- Will be conscious of their responsibilities to the transferring members of Seller Inc's Scheme, [½]
- The remaining members of the Scheme [½]
- In particular preservation requirements if the transfer is without consent [½]
- Does the transaction trigger any special provisions in the Trust Deed and Rules which give them additional powers? [½]

- Consider the impact of the transaction on the employer covenant [½]
- The Trustees will determine the amount of the bulk transfer value to be paid [½]
- This may be different from the amount agreed between the two companies [½]
- With any excess or shortfall reflected in an adjustment to the amount paid to buy Ionic Metalworks [½]
- In setting the bulk transfer amount, consider the impact on the funding level before and after the transfer [½]
- And hence the impact on the security of benefits of the remaining members [½]
- Also consider whether there is any material impact on the wind up priority order [½]
- So that some groups of members are not advantaged or disadvantaged relative to others [½]
- The power to determine the transfer value may effectively provide the Trustees with an opportunity to improve the funding position of the Scheme [½]
- Should the Scheme's funding strategy be reviewed? [½]
- Or the Scheme's investment strategy? [½]
- For example, if there has been a material change to the funding level or employer covenant [½]
- Or membership profile [½]
- Possible conflict of interests if members of scheme [½]

Trustees of Buyer Corp's Scheme

- Similar to the other Trustees, they will be concerned about the impact on both the transferring members [½]
- and the existing members of the scheme [½]
- Are the benefits being offered to the transferring members reasonable compared with the assets transferred? [½]
- Consider how the transfer affects the funding level of the scheme and hence security of benefits [½]
- Consider whether the transfer affects the sponsoring employer's covenant [½]
- For example, will there be additional debt on the balance sheet of Buyer Corp? [½]

Other valid answers given credit where appropriate

[max 8]

(vii)

- The key issue is whether members' accrued benefits are protected [½]
- Based on their short service benefit entitlement [½]
- As opposed to their future benefit accrual [½]
- And preservation requirements must be met [½]

Members

- Members will usually expect to be no worse off than before the transfer as far as their accrued rights are concerned. [1]

- This means that they can expect benefits in the new scheme equal in value to those accrued in the old scheme. [½]
- Occasionally, they might have lower reasonable expectations, for example if the only alternative to the sale were the closure of the business. [½]
- In this case, members are likely to receive a slightly larger annual pension which is payable three years later [½]
- By transferring, some members will be better off and other members will be worse off [½]
- Depending on how long they live, for example [½]
- And whether future salary growth exceeds the rate of revaluation of deferred pensions [½]
- Consider the early retirement factors – how would benefits compare if early retirement is taken at age 62 under Buyer Corp's scheme? [½]
- If the amount of pension available at age 62 is the same after the early retirement factor is applied to the added years, then members may be no worse off [½]
- They would have the option of opting out and getting the same deferred pension payable at age 62, irrespective of the rate of future salary growth [½]
- A lot of the other benefit features (pension increases, spouse's pension) are the same [½]
- Is there a custom and practice of awarding discretionary benefits under Seller Inc's scheme? [½]
- Are other actuarial factors/options (e.g. commutation) better or worse under Buyer Corp's scheme? [½]
- Are there any historic practices of Trustee discretion that have set expectations for members? [½]
- How do things like eligibility for dependants' benefits compare? [½]

Scheme Actuary

- The Scheme Actuary is required to certify that the Trustees of Seller Inc's scheme may transfer the members' benefits without the members' consent [½]
- The Scheme Actuary will need to consider his obligations under the Technical Actuarial Standard 300: Pensions [½]
- The Scheme Actuary's advice will need to allow the Trustees to understand how different classes of member are affected by the bulk transfer, including: [½]
- the impact on different classes of members' benefits of adopting alternative assumptions; [½]
- any changes in the material risks to the benefits of the different classes of members; [½]
- any material changes to the cash flows to members resulting from the bulk transfer; and [½]

- the potential reduction in the value of the benefits of the different classes of members. [½]
- The Scheme Actuary will need to consider whether formula used to calculate the added years of service awarded is appropriate [½]
- And uses fair assumptions [½]
- Scheme Actuary does not specifically recommend transfer [½]
- needs to consider relevant guidance e.g. TASs, Actuaries' Code [½]

Trustees

- The actuarial certificate alone may not be sufficient for the Trustees to make the transfer without consent [½]
- They may need to take advice from other professionals [½]
- Trustees will need to take account of the security of members' benefits [½]
- And consider the relative funding levels of each scheme [½]
- And the strength of the sponsor covenants [½]
- Less administration as no need to collate responses [½]

Discussion

- The benefit structures may be sufficiently close for the Trustees to make the transfer without members' consents [½]
- Especially if they are given comfort that the pension available at age 62 will be no less [½]
- We do not have any additional information about the financial strength of the two schemes and employers [½]
- It will be very difficult to transfer without consent if the Trustees have any concerns that benefit security may be adversely affected [½]
- It is more common to seek individual member consent [½]

[max 10]

(viii)

All methods (only award point once)

Advantages

- Investment risk transferred to member / receiving scheme / insurance company [½]
- Mortality risk transferred to member / receiving scheme / insurance company [½]
- Inflation risk transferred to member / receiving scheme / insurance company [½]
- Future administrative expenses will be lower [½]
- Risk of adverse legislative changes is reduced [½]

Disadvantages

- Cost of doing exercise [½]

- Liquidity issues for transferring assets [½]

Specific methods

- Enhanced Transfer Value exercise [½]

Advantages:
- Cheaper than buying deferred annuities [½]
- Depending on size of enhancement, liability may be extinguished at less than accounting liability and/or technical provisions [½]
- Option may be popular with members [½]
- Could do Pension Increase Exchange first - on route to buyout to make cheaper [½]
- There is a Code of Practice to follow [½]

Disadvantages:
- Only works for deferreds – not pensioners [½]
- Trustees may require large lump sum payment [½]
- If take up rates are low, not much liability will be extinguished [½]
- Regulatory risk of "mis-selling" [½]
- Possible high administrative cost or cost of advice [½]
- Risk of selection against the Scheme [½]
- E.g. if unmarried members/ members in poor health transfer out [½]
- Purchase annuities and deferred annuities [½]

Advantages:
- All liabilities can be discharged – pensioners as well as deferreds [½]
- Not dependant on member take-up [½]
- Prices might be competitive [½]

Disadvantages:
- Trustees may require very large cash injection to bring funding level up to buyout for affected members [½]
- Purchase cost likely to be significantly higher than Technical Provisions [½]
- And reserve held on accounting basis [½]
- It Trustees buy-in rather than buy-out, then employer will still remain responsible for the members' benefits [½]
- Deferred annuities may not be available [½]
- Or very expensive [½]
- Risk of insurer default [½]
- Commutation of trivial benefits [½]

Advantages:
- Relatively cheap and simple [½]

- Large saving in administration costs relative to benefits extinguished [½]

Disadvantages:
- Will have very little impact on the employer's overall obligations [½]

[max 10]

Question 1

(i) *This was book work and many candidates scored well. Some people didn't pick up on what the question was asking and talked about mergers and other options.*

(ii) *This was surprisingly not well answered. Many candidates calculated the difference in accrual rate, but not that many also allowed for the change in NRA correctly. Quite a number of people didn't answer this part at all*

(iii) *This should have been a very straightforward two marks if part (ii) was done correctly. However many people didn't answer.*

(iv) *Most people got some of the more obvious points here, but not many people were able to think more widely and score highly.*

(v) *This was a knowledge based question and if candidates knew it, it was very easy for them to score a lot of marks fairly quickly. Highlights the importance of knowing all the core reading. Quite a lot of candidates seemed to have the knowledge but didn't write enough for a 12 mark question.*

(vi) *This part was fairly well answered.*

(vii) *This part showed the importance of reading the question carefully. Many candidates answered from the point of view of the Scheme Actuary, but the candidates that scored well noted the question also asked about impact on members' benefits and issues for the trustees.*

(viii) *This was the best answered part on the paper. Most people were able to score relatively highly. Again it is very important to read the question as quite a number of people talked about options that didn't extinguish the liability such as buy in or pension increase exchange.*

Q2

(i) **There are a number of valid methods for answering this question. Give credit for sensible methods**

Investment Return

- Expected investment return = 120/270 * 3% + 150/270 * 5% = 4.11% per annum [½]
- Net cashflow into Scheme = 3 * (£10m - £5m) = £15 million [½]
- Expected assets = £200m * 1.0411^3 + £15m * 1.0411^1.5 = £241.6 million [½]
- Actual assets = £265 million [½]
- Hence investment returns contributed £265m - £241.6m = £23.4 million to surp [½]

Change of Basis

- Assume weighted average term to retirement (deferreds) of 12 years [½]
- Assume weighted average duration of post-retirement benefits of 15 years [½]
- Assume no change to mortality and other assumptions [½]
- Current pensioner liabilities on old basis = £180m * 0.995^15 = £167.0m [½]
- Current deferred pensioner liabilities on old basis

= £160m * 0.99^12 * 0.995^15 = £131.5m [½]
- Contribution to deficit = £340m - £167.0m - £131.5m = £41.5m [½]

Deficit Contributions

- Contribution to surplus of 3 * £10m * 1.0411^1.5 = £31.9m [½]

Inflation

- If inflation had been 3.5% per annum as assumed [½]
- Pensioner liabilities would now be £180m * (1.035/1.05)^3 = £172.4 million [½]
- Deferred liabilities would be £160m * (1.035/1.05)^3 = £153.2 million [½]
- Contribution to deficit (£180m - £172.4m) + (£160m - £153.2m) = £14.4 million [½]

Interest on deficit

- £70m * (1.0411 ^ 3 – 1) = £9.0m contribution to deficit [½]

Demographic Effects and other experience
- For example mortality [½]
- Balancing Item [½]
- Above items suggest deficit should have reduced by

£23.4m - £41.5m + £31.9m - £14.4m - £9.0m = - £9.6 million (i.e. £9.6m increase) [½]

- Deficit increased by £5m, hence demographic effects contributed £4.6m to surplus [½]

[max 8]

(ii) Give credit for best 4 scoring options

- The Trustees could change the scheme's investment strategy to bonds. [½]

Advantages:
- Better matching of the scheme's liabilities [½]
- Less investment risk [½]
- Poor investment returns are unlikely to make the deficit worse [½]

Disadvantages:
- Good investment returns in risk asset classes (e.g. property, equities) will no longer improve the funding position [½]
- A lower discount rate will need to be used for the funding valuation [½]
- Which means the reported deficit will be higher [½]
- And employer deficit contributions may need to increase [½]
- Transaction costs of moving to the new strategy [½]
- The Trustees could invest in assets that pay out in the event of sponsor default, such as derivatives including credit default swaps. [½]

Advantages:
- If the sponsor covenant deteriorates further or the sponsor becomes insolvent, these assets will increase in value and help to fund benefits [½]

Disadvantages:
- The cost of this insurance will reduce the long-term expected return from the Scheme's assets, leading to lower discount rate, higher deficit [½]
- The assets may expire worthless is the event they are protecting against does not occur [½]
- These may already be prohibitively expensive following the weakening of the sponsor covenant [½]
- The Trustees could consider alternatives to cash payments if the sponsor is unable to afford them, [½]
- such as a charge on the sponsor's fixed assets. [½]
- or in-specie contributions / Special Purpose Vehicle [½]

Advantages:
- Charge over assets will provide additional security in the event of sponsor insolvency [½]
- Because sponsor does not immediately need to increase its cash contribution rate to the Scheme…. [½]

- It can continue to invest in the business [½]

Disadvantages:
- The sponsor may not have sufficient unencumbered assets [½]
- Charge over the assets may make it harder for the sponsor to borrow money in the future [½]
- As sponsor cannot offer them as security to a bank [½]
- Assets may have volatile value or fall in value over time [½]
- In particular, will the assets hold their value if the sponsor becomes insolvent [½]
- As the two may be correlated [½]
- Assets cannot be used to pay benefits as they fall due – need to be sold [½]
- Cost of advice and administration /complexity [½]
- Include ratchets in contributions so that if the sponsor's financial position improves then
  the scheme shares in this improvement. [½]

Advantages:
- Sponsor is not asked for cash contributions at a time it cannot afford them [½]
- Scheme will benefit from an improvement in covenant ahead of shareholders (e.g.) [½]

Disadvantages:
- No immediate improvement in security for scheme members [½]

- Set up contingent contributions so the sponsor has to make up the deficit more quickly if the scheme's financial position deteriorates. [½]

Advantages:
- Additional funding will be made available to the Scheme if it needs it [½]

Disadvantages:
- If the sponsor covenant weakens further, it may not be in a position to pay the contributions agreed [½]
- Which would further compound the difficulties [½]
- Allow the sponsor to defer or reduce its deficit contributions until it can afford them [½]

Advantages:
- Gives the sponsor the best chance of remaining in business [½]

Disadvantages:
- If the sponsor covenant does not improve, Scheme will have missed out on deficit contributions [½]
- And member benefits will be less secure than they otherwise would have been [½]

[max 8]

(iii) **Duties of Scheme Actuary and Trustees**

- The Scheme actuary should recommend prudent assumptions [½]
- Taking into account the Pensions Regulator's guidance [½]
- The degree of prudence should take into account the degree to which the employer covenant can support a range of likely outcomes [½]
- It is the overall level of prudence that is important [½]
- Therefore some individual assumptions may be more prudent than others [½]
- If every assumption is prudent then the basis may be too prudent [½]
- Technical provisions should not be compromised to make a recovery plan appear affordable [½]
- The discount rate used must be prudent [½]
- The discount rate should take into account either the yield on the assets held… [½]
- …and the anticipated future investment returns, [½]
- …or the market redemption yields on high quality government bonds [½]
- The difference between the assumptions for the SFO and the neutral estimate will provide an indication of the degree of prudence [½]
- The Trustees should seek a funding outcome that reflects a reasonable balance between
  the need to pay promised benefits and minimising any adverse impact on an employer's sustainable growth. [½]
- The discount rate prudence needs to be considered by reference to the likelihood and scale of the funding needs which could emerge if the expected investment return is not achieved. [½]
- In setting discount rates trustees should take account of any expected future changes to their investment policy. [½]
- When considering discount rates a medium- to long-term assessment is possible, [½]
- recognising that scheme funding is a long term activity; [½]
- it is the gaps between assumptions that is important rather than absolute values [½]
- Price inflation and inflation linked increases - consider market information based on gilt yields [½]
- in particular, base assumption on the difference in yields between fixed interest and index linked gilts of appropriate duration [½]
- and strip out any perceived distortion caused by supply and demand impacts on the two markets / inflation risk premium [½]
- consider allowing for the government inflation targets [½]
- and take account of any caps and collars [½]
- mortality – consider latest mortality tables [½]
- and improvements [½]
- and consider nature/geography of employer's business [½]
- *½ a mark for any other reference to demographic assumptions* [½]

- however, trustees should understand that it is difficult to be certain of employer covenant strength over that longer term. [½]
- Changes from the assumptions used for the previous valuation should be justified by changes in legal, demographic or economic circumstances [½]
- Although the actuary recommends the assumptions it is ultimately the Trustees' decision [½]

Setting the Current Valuation Assumptions

- Changes in circumstances since the previous valuation include bond yields, [½]
- The employer covenant, [½]
- And, depending on whether the Trustees change the investment strategy, [½]
- …the expected return on the Scheme's assets [½]
- The assumptions used for the preliminary results appear to have a similar degree of prudence as the previous valuation [½]
- Considering how bond yields have changed since the previous valuation [½]
- The employer covenant appears to be weaker than before [½]
- As it will be unable to pay deficit contributions that can eliminate the deficit in a reasonably short period of time [½]
- Unless a relatively high risk investment approach is adopted by the trustees [½]
- The use of separate pre and post retirement discount rates naturally allows for the Scheme's assets to move into bonds as it matures [½]

Appropriateness of Preliminary Valuation Assumptions

- If there is no change to investment strategy, investment risk will remain high [½]
- Adverse investment returns would have a significant impact on the Scheme's funding position [½]
- Which the weak employer covenant may not be able to support [½]
- Therefore the Trustees should take a larger margin for prudence than before [½]
- The preliminary valuation assumptions are therefore not appropriate [½]
- And lower discount rates will be needed [½]

[max 10]

(iv) **Features of the assets**

- Index-linked gilts provide guaranteed real returns if held to redemption [½]
- Albeit a return that is currently less than inflation [½]
- And provide a good matching of benefits linked to price inflation [½]
- Provided gilts of appropriate duration are held [½]
- They match the currency of the liabilities [½]
- Therefore can be considered a low-risk asset class [½]

Comparison with current assets

- Compared with the current asset allocation, the proposed allocation is much less risky [½]
- As index-linked gilts are less risky than equities [½]
- And a better match for liabilities [½]
- In terms of duration [½]
- Inflation matching [½]
- And currency matching [½]
- Therefore the volatility of the Scheme's funding position should be much reduced [1]
- However, the scheme will not benefit as much from good equity market performance [½]
- Are equities still global? [½]

Impact on scheme funding

- Index-linked gilts have a lower long-term expected return than equities [½]
- Hence a lower discount rate will be needed for the funding valuation [½]
- Which will increase the liabilities [½]
- The preliminary valuation assumptions will therefore not be appropriate [½]
- Broadly speaking, post retirement discount rate will reduce from 2.5% to 1.5% p.a. [½]
- Pre retirement discount rate will reduce from 4% to 2.75% per annum [½]
- Based on 50% equity / 50% index linked gilts pre retirement [½]
  [give credit for suitably argued alternative alternative]
- Pensioner liabilities become £180m * 1.01^ 15 = £209.0 million [½]
- Deferred liabilities become £160m * 1.0025^ 12 * 1.01 ^ 15 = £215.6 million [½]
- Deficit becomes £209.0m + £215.6m - £265.0m = £159.6 million [½]
- Therefore the deficit has more than doubled (or any sensible statement based on figures above – obviously deficit will have increased though) [½]
- Which should have been expected given the change in investments [½]
- As investment risk is reduced, [½]
- adverse investment returns would not have such a major impact on the Scheme's funding position [½]
- Therefore the Trustees might be able to take a smaller margin for prudence [½]
- From the neutral estimate of the expected return on the Scheme's assets [½]

Other

- There will be transaction costs associated with changing strategy [½]
- The risk-based PPF levy will be lower [½]
- Need to consult with the sponsoring employer regarding the change [½]
- Risk of poor market timing and missing out on equity market gains [½]

- Are there any restrictions on the assets that the Scheme can hold? [½]
- Statement of Investment Principles may need updating [½]

[max 13]

(v)

- Best security for members' benefits is long-term viable employer [1]

Course 1 (Maintain the current investment strategy, agree to the reduced contribution rate of £5 million per annum)

- The contribution rate is expected to eliminate the deficit over a long period (more than 75/5 = 15 years) [½]
- Which could be shorter if additional returns assumed for Recovery Plan [½]
- But high risk of missing this target due to investment strategy / poor matching [½]
- Members' benefits are at risk if the employer becomes insolvent during this period [½]
- Unless investment returns are better than expected and eliminate the deficit quicker [½]
- With 60% invested in global equities there is significant investment risk [½]
- As liabilities are poorly matched [½]
- Therefore the funding level could deteriorate significantly if equity returns are poor [½]
- The impact on members' benefits of poor investment returns in the event of insolvency might be limited if the PPF funding level is below 100% [½]

Course 2 (Move to the recommended investment strategy, agree to the reduced contribution rate of £5 million per annum)

- The funding level will be more stable [½]
- Given the less risky asset allocation [½]
- At the new contribution rate, the deficit is not expected to be paid off for a very long period (more than 159.6 / 5 = 32 years) [½]
- This is so long that in practice the deficit may never be paid off [½]
- Risk of physically running out of money before then as scheme becomes increasingly cashflow negative [½]
- The outcome for members may simply be that there is a likelihood of employer insolvency before they receive full benefits [½]
- But the funding level is unlikely to be much worse than it is now [½]

Course 3 (Move to the recommended investment strategy, require the employer to maintain the existing contribution rate of £10 million per annum)

- The contribution rate is expected to eliminate the deficit over a long period (more than 159.6 / 10 = 16 years) [½]
- Lower investment risk and better matching of liabilities means there should be a high

degree of confidence that this will be achieved [½]

- However, the risk of employer insolvency during this time frame may be higher [½]
- If paying the higher contribution rate is detrimental to the company's business as the Finance Director claims [½]
- However, if the company does become insolvent after 10 years (say), the funding level should be better than if contribution of only £5 million per annum had been paid [½]
- Although if Scheme still less than 100% on PPF basis, members may not see a benefit [½]

General

- Any sensible comment on relative lengths of Recovery Plans in comparison to each other [1]

[Max 6]

Question 2

(i) Quite a number of people missed this part out. However those that did answer generally scored quite highly.

(ii) This was well answered. However a number of people suggested areas that aren't relevant for the trustee –such as buyout or modifying benefits.

(iii)Most people were able to score the easier points here about how to set a basis. The better candidates were able to use the information in the question and tailor the answer to the specific basis proposed (as the question asked).

(iv) Most people were able to score some marks with the more obvious parts about better matching and a potential reduction to rate of return, however this was a 13 mark question and not many people went into enough detail to score highly. The better candidates were able to use the numbers in the question to estimate how the basis might change with the change in investment strategy.

(v) This was relatively well answered.

END OF EXAMINERS' REPORT