INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2020 Examinations

Subject SA4 - Pensions and other Benefits Specialist Advanced

Introduction

The Examiners' Report is written by the Chief 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

July 2020

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 pensions and employee benefit environment and the principles of actuarial practice to providers of pensions and employee benefits both in the United Kingdom and the rest of the world.

2. This subject examines the ability of candidates to apply actuarial practice and concepts to potentially complex problems, integrating their analysis into a coherent whole, and evaluating and interpreting results to draw explicit conclusions.

3. From 2019 the requirement for detailed knowledge of the UK's legislative and regulatory frameworks has been moved to the UK Practice Modules (UKPM). The Specialist Advanced subjects will still require knowledge of the principles of the UK market and regulatory regimes but there has been a re-balancing to include comparison between different jurisdictions and expansion in non-UK-specific topics.

4. 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.

5. 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.

6. 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.

7. 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.

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

B. Comments on candidate performance in this diet of the examination.

This was the first time the SA4 exam was taken online. As such we believe that a number of candidates may have struggled to adapt to this new format. The questions being asked covered specific scenarios and so the solutions would need to be tailored to that situation set out.
Often there seemed to be little attempt to consider the particulars of the question and so some answers were filled with general points which left little time or space for consideration of the specifics, i.e. providing bookwork answers rather than applying their knowledge. This could be an impact of the online nature of the exam and using notes.
Having said that, this was seen to be a fairly challenging exam. There were some more challenging parts designed to make candidates think about the specific scenario set out in the question, where the better prepared did well.
Some students also seemed to run out of time which highlights the need to plan during the exam. The online nature of the exam did mean that we saw better structured solutions in general.
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.
The importance of structure in the exams should not be underestimated because this will lead to much more efficient work post exams. It is harder to get good marks in the absence of a good structure because it means that logical points are more likely to be missed. Sometimes points are just repeated further through the answer meaning that the response was more likely to look of sufficient length than it really was for the marks available.
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.

The overall performance was lower than expected when setting the paper. Assessment of the minimally competent candidate indicated a pass mark of 50 was appropriate. 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.
203 candidates presented themselves and 59 passed.

Solutions

Q1

(i)

<u>Allowance for prudence and risk</u>

The funding valuation is for the trustees who will want a prudent approach to protect the security of the scheme [½]

The purchase of a significant buy-in in respect of pensioner liabilities has removed investment, inflation and longevity risk (or volatility) from a significant part of the scheme's liabilities. [1]

There is a small new risk that the insurer could become insolvent [½]

This is probably small and is therefore unlikely to need a specific additional allowance for risk or prudence in the assumptions due to the probable robust regulation of insurance business. [½]

When setting the allowances for prudence and risk it is appropriate to look only at the "uninsured portion of the liabilities" - ie those not backed by the insurance contract. [½]

The scheme approach to making allowance for prudence and risk would be unchanged from the previous funding valuation [½]

other than adjustments needed for any changes to the fundamental characteristics of the scheme, sponsor and economic environment since the previous valuation. [½]

The allowance for prudence will continue to be assessed in the context of the sponsor's covenant [½]

but the buy-in means that the absolute level of risk within the scheme has been reduced [½]

and this may mean that the sponsor's covenant is relatively stronger in comparison to the size of the uninsured liabilities. [½]

This may enable the Trustees to reduce the allowance for prudence by weakening the assumptions compared to the previous valuation. [½]

Alternatively, if the long term-strategy for the scheme is to continue de-risking then the Trustees may wish to retain the existing degree of prudence in order to mitigate the expected costs of future de-risking. [1]

<u>Post retirement investment returns</u>

The market return for the assets backing the uninsured pensioner liabilities would be combined with the returns on an appropriate bond portfolio for the buy-in. [½]

or might consider any information on the post retirement assumption used by the insurer. [½]

This would be reduced, when valuing the liabilities, according to the scheme's normal approach to allowing for risk [½]

- ie making reductions for risk from the returns for each asset class of the underlying investment strategy, [½]

Consider future investment strategy when setting post retirement investment returns for non-pensioners. [½]

<u>Post retirement longevity</u>

This assumption would normally only be updated to allow for more recent scheme experience [½]
and for updated expectations for future increases in longevity. [½]
Longevity assumption likely to be the same for those liabilities bought-in and not bought-in, unless a decision was made to target certain liabilities to buy in (ie certain pensioner groups). [½]
Although if bought in pensions are non-increasing these liabilities have a lower longevity risk [½]
a more prudent approach would therefore be to make a greater allowance for future improvements on the non-bought in liabilities [½]
Consider any information on the mortality assumption used by insurer [½]
in particular further mortality analysis may have been carried out by the insurer which can be used to inform the mortality assumption [½]
Consider post-retirement longevity for future pensioners and whether any of these liabilities are likely to be bought in. [½]
<u>The value of assets</u>
Asset values will be taken at market value apart from the insurance policy [½]
A value will also need to be placed on the buy-in for the scheme's accounts and as part of the valuation [½]
but it is simplest for this to be done by valuing the insured benefits using the same assumptions as those being used for the liabilities of the scheme. [½]
Although these assumptions may need to be adjusted to the extent that the insured benefits may have different payment conditions [½]
- eg if there is a complicated scheme increase which the Trustees chose not to replicate fully in the buy-in [½]
there may be a slightly different pension increase assumption for the insured benefits. [½]
There would then be a further reduction to the returns for prudence [½]
with the amount of reduction according to whether the Trustees decide to reduce the allowance for prudence or maintain the previous level to help finance further de-risking. [½]
A small increase (such as rounding up) the investment return assumption could be made for valuing the buy-in asset if the trustees wish to recognise the risk of insurer insolvency and therefore reduce the value accordingly. [½]
or make an explicit asset value reduction [½]
[Max 10]

(ii)
The terms set for member options should:

- Take account of provisions in the scheme's documentation and/or the regulatory framework [½]
- Normally start from a best estimate calculation which equates the value of the option with the value of the normal scheme benefit [1]
- Consider whether there are reasons to move away from this equality for particular options or circumstances [½]
- Consider the scheme's investment strategy [½]

- Be fair between those who take the option and those who don't in terms of value and/or security [½]

(a) CETVs are provided to members who have not yet retired [½]
The changes to the scheme's investments have had no direct impact on this group of members [½]
and any changes that the scheme has made to the allowance for prudence in the funding valuation has no effect on the best estimate assumptions likely to be used for CETVs. [½]
Therefore the review of CETV bases could be completed by simply updating the basis to reflect the up to date assumptions from the funding valuation [½]
- ie updating the best estimate longevity assumptions [½]
and reflecting any amendments to the investment strategy underlying the non-pensioner liabilities of the scheme. [½]
However, the scheme having embarked on de-risking, the Trustees may wish to consider whether they would want to review the level of CETVs provided compared to the best estimate basis. [½]
Offering higher values to members may encourage members to transfer their benefits, [½]
resulting in further de-risking of the scheme as the exposure to inflation and longevity is reduced. [½]
An alternative way of looking at this is that the higher value reflects an intention to further de-risk the scheme which could ultimately result in higher values of scheme benefits. [½]
Although, unless further derisking action is taken, the scheme will naturally re-risk [½]
as the significance of the buy-in diminishes with the aging of the pensioners [½]
The amounts paid could be reduced if the scheme is not fully funded [½]
but this may be considered unfair if the primary reason for the underfunding is the cost of the buy-in. [½]
(b) The scheme sponsor normally takes a keen interest in the terms offered for cash commutation at retirement or actually sets them. [½]
Therefore the advice to Trustees will be given in the context of the need to respond to the sponsor's proposals or consider the sponsor's view. [½]
As for CETVs, the changes to the scheme's investments have had no direct impact on those not yet retired. [½]
and any changes the scheme has made in the allowance for prudence in the funding valuation will again have no effect on the best estimate assumptions. [½]
However, it is common to provide lower commutation amounts than would be implied by best estimate assumptions [½]
as the sponsor often wants to keep cashflow payments as low as possible [½]
- perhaps by not recognising any future improvements in longevity. [½]
In contrast to this, offering higher commutation amounts may encourage higher take-up of the option [½]
which again provides an element of de-risking in keeping with a possible long-term strategy, [½]
but to a much smaller extent for an individual than with CETVs as mentioned

above. [½]
However, it is far more common for individuals to commute some pension than to take a CETV [½]
even in the UK with the advent of pension freedoms. [½]
(c) Values calculated for this purpose will likely follow the best estimate funding assumptions - in a similar manner as for CETVs. [½]
For these members, however, the changed investment strategy has had a direct impact on the funding assumptions derived for around 50% of the scheme's pensioner liabilities. [½]
The buy-in is likely to have increased the proportion of bond-like investments backing the pensioner liabilities so the expected best estimate returns will have reduced resulting in increased values. [½]
The main consideration for the Trustees is whether to reflect this increased value in the calculations for divorce purposes. [½]
From the member's perspective the security of the benefit is improved due to the portion that is backed by the insurance contract [½]
so that would mean the member might expect a higher value to reflect the higher security, if they were aware of the buy-in at all. [½]
Almost immediately there will be pensioners who are covered by the buy-in and those that are not [½]
and the proportion will gradually move towards those that are not. [½]
However, it would be unfair to distinguish between the two groups in the calculations for an individual [½]
since the buy-in is a scheme investment and does not belong to any individual pensioner. [½]
The trustees should seek to reflect the higher values for the insured portion [½]
although they may wish to use a lower proportion than 50% to allow for the natural unwinding of the "insured" proportion. [½]
If the best estimate scheme return is around 0.5% lower when allowing for the buy-in
that might produce divorce values around 5% to 10% higher than making no allowance for the insured portion. [½]
The basis for divorce calculations might make use of the details for a specific known spouse. [½]
[Max 15]

(iii)
The first value for this member will have been calculated as a non-pensioner but the second will have been calculated as a pensioner. [½]
The new calculation bases have recognised the buy-in for pensioners but not for non-pensioners [½]
so this means that the value as a pensioner is likely to be slightly higher than the value as a non-pensioner. [½]
The most likely reason for a change is that market values have increased between the two calculations [½]
eg as a result of lower expected investment returns [½]
and this would be reflected in an increased valuation of the benefits. [½]

The member may have retired on enhanced terms. [½]
The later value may have allowed for mortality improvements in the new basis. [½]
The pensioner figure may allow for the actual spouse who may be younger than assumed. [½]
The allowance for expenses may have changed. [½]
The original CETV may have allowed for the member taking cash at retirement which they may not have taken. [½]
The member is slightly older and this would result in a slightly lower value as a pensioner [½]
as some of the benefits will have been paid. [½]
It's also possible that the member commuted some of their pension at retirement [½]
and this would mean that the value as a pensioner would be lower than the earlier valuation. [½]
The member could also have exchanged some of their pension for additional spouse's pension. [½]
The impact of this on the value of benefits would depend on the terms of the exchange compared to the transfer calculation bases. [½]
If a pension increase has been made between retirement and the pensioner valuation then [½]
this could have been at a different rate than was assumed at the earlier valuation. [½]
The first value might have been reduced for underfunding [½]

[Max 5]

[Total 30]

(i)/(ii) The better candidates answered this question by considering the impact of the buy-in and this was really needed to score well on this question. General points which may be technically correct but not relevant to the buy-in would receive only limited credit (see above points on exam technique for this online session).

(iii) This part was generally well answered by many candidates.

Q2

(i)

A collective defined contribution (CDC) scheme is a defined contribution scheme where the members' funds are pooled together to share risk and benefit from economies of scale. [1]

The CDC can be designed to produce individual funds at retirement (possibly with a conversion at retirement to pay benefits direct from the scheme) or to produce target benefits at retirement. [1]

(ii)

(a)

Advantages:

- members don't have to make investment decisions which many are uneasy about [½]
  because these are made by the scheme managers and pooled across all members [½]
- compared to an ordinary DC scheme, members are less exposed to fluctuations in their individual funds around retirement [½]
  which makes their individual fund much more predictable [½]
- compared to an ordinary DC scheme individual funds should be generally higher [½]
  as there is less need to move into more cautious investments in the period leading up to retirement [½]
- If the CDC provides a target benefit at retirement instead of an individual fund or if there are conversion terms to provide benefits from the scheme the member will not need to pay insurance company charges [½]
  and may be less exposed to fluctuations in the market terms for conversion to a pension [½]
- The funds may be more secure than a DB scheme where the scheme could be underfunded and reliant on the employer covenant. [½]
- May be more benefit flexibility than a DB scheme because member could choose to tailor the form of benefits to their own circumstances - eg only take single life benefit. [½]

<u>Disadvantages</u>:

- the members are is still exposed to investment and longevity risk compared to the current DB scheme [½]
- if the CDC provides a target benefit subject to adjustment this will be less predictable than the current DB benefit [½]
  and less predictable after retirement than purchasing an annuity with a DC fund or CDC fund [½]
- if scheme targets benefits instead of funds or the benefits are paid from the scheme there may be less benefit flexibility than ordinary DC [½]
- there may be no control over investment choice [½]
- the member may find the scheme and their benefits difficult to understand [½]

(b)
<u>Advantages</u>:

- predictable contributions if take up is stable [½]
- stable balance sheet [½]
- allowing the sponsor a better chance, compared to ordinary DC, of delivering the level of retirement benefits that it is prepared to finance [½]
- allowing the provision of larger and more uniform benefits for members than from an ordinary DC scheme [½]
- reducing the potential criticism from closing the DB scheme [½]
- mitigates employer risks (eg longevity, inflation and investment) compared to DB scheme ... [½]
- ... and likely to mostly remove them [½]
- May result in lower costs [½]
- May have lower exposure to legislative risk than DB

Disadvantages:

- possibilities of inequity across different categories or generations of members [½]
  where target benefits are provided (but not as much as an ordinary DC scheme) [½]
- more complex administration than an ordinary DC scheme [½]
  particularly if providing target benefits instead of individual funds at retirement [½]
- member communications will be challenging if members are to understand the scheme [½]
- potential need for pay adjustments as the benefit value may be perceived as lower than for the existing DB scheme [½]
- risks are largely removed rather than shared ... [½]
- ... other than reputational risk of not broadly reaching target benefits .. [½]
- ... or from significant intergenerational benefit differences [½]
- May be pressure to increase contributions if the scheme performs poorly [½]
- Administration complexity of managing benefit variations [½]
- May cause difficulties in attracting or retaining staff if it compares unfavourably to competitor schemes and the current DB scheme [½]

[Max 8]

(iii)
(a)
Need to decide whether the scheme will be established by trust or contract. [½]
Decide what administration, investment and actuarial support will be required to operate the scheme ... [½]
... and how the running costs will be met - ie separate payments or from scheme assets. [½]
There may need to be a trade-off between a sophisticated design and one that is easy to administer. [½]
The CDC scheme could be designed to provide a target benefit at retirement [½]
based on salary but probably increased until payment based on investment returns [½]
but this might be adjusted in payment in the light of experience. [½]
Alternatively, the CDC may be designed to provide an individual fund at retirement [½]
similar to an ordinary DC but with investment returns based on the scheme as a whole. [½]
However, in either case the sponsor may still want to think in terms of the accrual of a benefit which produces a desired ratio of benefits compared to pre-retirement earnings [½]
in order to assess where to set their contribution rate. [½]
This decision will be affected by the benefits offered by the current DB scheme [½]
and those offered by competitors [½]
The options for benefit accrual are largely similar to those for traditional defined benefit schemes [½]
but these are now being applied to a target or desired benefit rather than a benefit promise. [½]

The sponsor will need to strike a balance between the replacement ratio they want to target against pre-retirement income [½]
and the expected cost of the scheme in terms of member and sponsor contributions. [½]
This will include considerations of spouses' and dependants' pensions [½]
payable on death in service, deferment and retirement, [½]
indexation of benefits both before and after retirement [½]
and options or flexibility available to members at or after retirement. [½]
The sponsor may also want to consider more than one level of benefit provision [½]
with different levels of member contribution [½]
and decide how much support or encouragement they will give to each level [½]
in a similar manner to sponsors matching member contributions up to a certain level [½]
It may be that this is something that will need to be revisited periodically [½]
if there is a shift in the economic or demographic landscape [½]
so that the sponsor's strategic aims continue to be met [½]
and are kept in line with their staff recruitment and retention policies. [½]

(b)

General

The concept of having a defined contribution scheme where the assets and liabilities are not precisely matched is an alien one in the DC environment and only occurs if the CDC is designed to produce a target benefit at or after retirement [½]
or allows conversion of individual funds to scheme pension [½]
so it needs careful consideration of what to do whether there is a surplus or deficit. [½]
The first thing to note is that it only arises because members have target benefits or converted benefits that they have a reasonable expectation will be largely stable and sustainable. [½]
The only way to determine the state of the scheme's funding is to have regular valuations of the scheme [½]
which will determine the difference between the value of the target benefits / converted benefits and the assets of the scheme. [½]
A decision will be needed on the normal frequency of these valuations [½]
and the situations when it might be desirable to trigger an additional valuation. [½]
eg - a step change in market conditions (perhaps as a consequence of taxation changes [½]
or a shift in mortality arising from a new disease such as Covid-19 or a new medical treatment. [½]
Note that the valuation can exclude all pre-retirement assets and member funds in the case of a scheme designed to provide individual funds at retirement. [½]

Surplus

Essentially there are three possible courses of action:

- increase the target benefits; [½]
- establish a reserve against future poor experience; [½]

- or do nothing [½]

and it's possible that a combination of one or more may be chosen. [½]
Increasing the target benefits would probably be a simple one-off increase [½]
but if the reason behind the surplus is a step change of conditions then the scheme may set an expectation of higher indexation increases in the future as well. [½]
If there is doubt as to whether the surplus may be reversed in the near future [½]
then it may be more appropriate to establish a reserve against that outcome [½]
and make no adjustment to target benefits. [½]
This effectively applies smoothing to the experience and may avoid large changes or frequent changes. [½]
Doing nothing is not likely to be in keeping with the members' expectations but it may be acceptable if the surplus is small [½]
(possibly after establishing a reserve for future poor experience and/or applying a special increase). [½]

Deficit

Options for reducing benefits will include reduction in the indexation of benefits and the reduction of benefit amounts. [½]
The policy would want to focus these reductions on indexation rather than benefit amounts [½]
and benefits before payment rather than those in payment. [½]
All of these options could be applied as a one-off adjustment [½]
or for a period depending on the severity and expected duration of the underfunding. [½]
In terms of reductions applied to indexation or target benefits before payment, there is also a question as to whether these would be applied uniformly to all members in this category [½]
or applied first to those benefits furthest away from payment to allow the best chance for reductions to be reversed before benefits are paid. [½]
Finally, there is a question as to whether each stage of the reduction priority must be used up before proceeding to the next. [½]
eg should the indexation of target benefits before payment be cut to zero before there is any reduction in the indexation of benefits in payment [½]
or whether a certain minimum level of indexation is desirable? [½]
There also needs to be consideration of what to do if experience improves after some benefit reductions [½]
- should these be restored as a first call on the improved position before allowing the scheme to simply operate as set out above with good performance accruing to the individuals? [½]

Equity

The responses to the application of surplus or the need for benefit reductions will have an important impact on the potential inequity across generations of members. [½]
If the scheme always preserves the existing benefit levels for those already receiving income then the members still to receive income will bear the brunt of any underfunding [½]
and this is likely to impact most heavily on the youngest members. [½]

The scheme will want to avoid the appearance of indirect age discrimination [½]
so it will be important to have clear communication when the scheme operates reductions and subsequent increases. [½]

The solution must be to consider the priority order as operating over time as well. [½]
As an example; if the first valuation identifies a deficit which requires the suspension of all indexation on benefits not in payment [½]
if there is also a deficit at the second valuation then the starting point for further benefit reductions would be to reduce the indexation on benefits in payment. [½]
(*marks for any similar example to illustrate the point*)
Taking this a step further, if there is instead a surplus at the second valuation the needs of equity require this to be first used to restore some of the lost indexation on benefits not in payment [½]
before it is applied as true surplus. [½]
(*marks for any similar example of the process*)
If, however, the deficit is believed to be the result of a step change in the economic environment [½]
or the characteristics of the scheme and/or its members [½]
then, alongside a more permanent reduction of benefits already accrued or their indexation [½]
this may necessitate a review of the accrual rates for new entrants [½]
or the contribution rates payable [½]
in order to meet the sponsor's strategic aims as mentioned in a). [½]
Some of the other possibilities for addressing potential inequity across generations might be to restrict the sharing of risks to within distinct age cohorts [½]
or amending the investment strategy to reflect changes in the scheme demographics [½]
or to restrict the sharing of longevity risks within separate category groupings (eg works and staff). [½]

(c)
There is an expectation that members can transport their pensions to different schemes during the course of their working life, at retirement and even beyond and the scheme needs to be able to facilitate this. [½]

Transfers out before retirement:
If the scheme is providing individual funds at retirement then the transfer amount would simply be the member's fund with investment growth to date. [½]
If the scheme is providing a target benefit at retirement the transfer amount could be calculated as the value of the accrued benefit in a similar way to the current DB scheme, [½]
allowing for indexation up to retirement. [½]
However, if the scheme holds a reserve for unallocated good experience, consideration should be given as to whether the member should also be entitled to a share of this. [½]
There may also need to be an adjustment to the figure if there is any underfunding that has not been reflected in the benefits or member funds. [½]

There should be careful consideration of how to calculate the value if the scheme operates any sort of smoothing of experience. [½]

Transfers in during this period should also be no problem as, if required, a target benefit could be calculated for them that reflects the amount paid in and the terms for benefit accrual of a new entrant at that age. [½]

Transfers out at retirement:

These would be calculated as for transfers out before retirement and the normal expectation would be that members will seek to secure a retirement income that is most suitable to their circumstances. [½]

Where the scheme provides a target benefit at retirement, these calculations could recognise the possibility that members may select against the scheme by taking transfers if they are in poor health and leave the scheme with mostly members in good health [½]

which may skew longevity sharing in the scheme. [½]

However, this is probably no worse than the options that members have in the existing DB scheme at retirement, [½]

although in that situation the risk is borne by the sponsor whereas this risk would be borne by the remaining members. [½]

In light of this it is perhaps more justifiable to make the terms more penal than might be expected in a DB scheme. [½]

Dealing with a reserve for unapplied good experience would potentially need to be considered in this situation as well. [½]

Transfers in at retirement should again cause little difficulty and may be a popular choice for members who like the retirement income offered by the CDC scheme and wish to consolidate their benefits in one scheme. [½]

Again it should be a relatively simple matter to calculate an appropriate benefit to reflect the money received and the terms offered to older new entrants. [½]

Transfers out after retirement:

Once retirement income is being received this is potentially more problematic. The risk of selection is now very high and could jeopardise longevity sharing across the scheme. [½]

This should probably not be allowed. [½]

Transfers in after retirement should, similarly, not be allowed. [½]

[Max 25]

[Total 35]

(i) *General bookwork answered well.*

(ii) *Many candidates scored well in providing sufficient advantages and disadvantages to get a large proportion of the marks available.*

(iii) *Candidates generally struggled to reach sufficient depth in their answers to this part of the question. Quite a few candidates treated this as an analysis of surplus question by talking about sources of surplus when these schemes pool the risks (primarily investment and mortality) so that equity is a question of* *ensuring that increases to, or reductions of, benefits are not always applied to the same group of members.*

Q3

(i)

(a) An arrangement under which benefits are paid out of revenue and no funding is made for future liabilities. [1]

(b) An arrangement whereby a payment to meet the present value of a benefit is made only at or about the time when the benefit is due to commence. [1]

(ii)

PAYG

Advantages:

- simple to operate [½]
- very easy to compare current care costs to current care contributions to assess the rate of contributions needed [½]
- no opportunity cost in having to set aside a reserve for future care costs [½]
- no fees to manage investments for a funding reserve [½]
- relatively small immediate increase in taxation compared to setting up the required reserve under Terminal Funding [½]

Disadvantages:

- unless care contributions are also paid by those receiving care this is less robust than terminal funding [½]
- because demographic changes could create a mismatch between those at risk of requiring care and those paying the care contributions [½]
- hard to keep the rate of care contributions stable and also be confident that they remain sufficient [½]
- may be difficult to achieve contributions which exactly match care costs each year [½]
- so contingent funding is required to mitigate potential liquidity issues which complicates the method [½]
- or may result in a reduction in the minimum level of care provided [½]

Terminal Funding

Advantages:

- investment returns on the amounts set aside can help to mitigate the care costs [½]
- if contributions are mostly paid by those who are or who have been at risk of needing care then this is a more robust system during times of demographic changes [½]
- because the populations of those at risk of needing care and those contributing to the costs should remain broadly in balance [½]
- trends for future care costs are likely to emerge from the necessary regular monitoring of the fund [½]

- which could enable these to be anticipated in setting the rate of care contributions required [½]
- potentially more security that care costs will be met when required because of the reserve set aside.

<u>Disadvantages</u>:

- this a much more complex system to operate [½]
- it requires assumptions to estimate how much to set aside for care costs at the point they are triggered for an individual [½]
- it requires regular monitoring to assess whether the fund remains sufficient to meet expected future care costs [½]
- the system is more difficult to introduce if there is a large up-front cost of the benefit that's not been paid before to those already receiving care [½]
- brings forward contribution requirements compared to PAYG [½]
  as higher initial contributions are required to set up the fund [½]
  with lower contributions later as costs for those already in care are paid from the funding reserve [½]
- potential opportunity cost from the need to establish the fund [½]
  and risk that the State might divert the reserves to other uses [½]

[Max 5]

(iii)
(a)
<u>Advantages</u>:

- should be easily understood by pensioners as it may be a similar structure to tax paid while they were in work [½]
- may be popular with non-pensioners if their general taxation reduces as a consequence of a more targeted tax [½]
  and may be seen as fairer across the generations [½]
- the threshold could be set at a level similar to any State pension guarantee so that levies are only paid by those with pension incomes above minimum living costs [½]
- it is a progressive tax so that the average tax rate would increase with increasing income [½]
- it is payable by broadly the same population as those who are at risk of needing care [½]
- so it should be reasonably robust in the light of demographic changes [½]
- provided it is not set with a low threshold or a high rate it may be welcomed by pensioners compared to the risk that care costs could drastically reduce their assets and prevent them passing on an inheritance [½]
- if the new minimum level of State-funded care is being increased people may feel less need to pay higher care fees from personal resources and this may offset the levy to a large degree [½]
- may provide a stable source of income to fund the care costs [½]

<u>Disadvantages</u>:

- pensioners may resent an additional levy on their income [½]

- may be unpopular with pensioners as they have previously paid for other’s care through general taxation and are now effectively paying twice [½]
- the definition of pensioners may be complex if there are flexible retirement practices [½]
- setting the levy threshold too high may deter people from seeking to boost their retirement income [½]
- raising sufficient funding may require an unacceptably high levy rate [½]
  or a low threshold - maybe below living cost [½]
- the levy may not target wealthy pensioners who could have significant assets but relatively low income [½]
  and these pensioners may now have care costs met because there is no asset test for State support [½]

(b)
<u>Advantages</u>:

- many people may have value tied up in property and other assets that is disproportionate to the level of their income [½]
- and this offers a way of increasing the levy base which helps to keep all levy rates down [½]
- this levy is being applied to money which is no longer needed by the individuals [½]
- it may encourage individuals to downsize their properties and spend at least some of the proceeds which could have positive macroeconomic effects [½]
- by reducing the cost of family homes as the pool of properties increases and encouraging spending of the released asset values [½]
- it should be easily understood, particularly if the threshold is set the same as any inheritance tax threshold, as this would simply be increasing the tax rate provided the levy is only charged on assets above the threshold [½]
- similarly to (a), individuals may see a real risk of much of their capital being wiped out by care fees so they may again see value in paying a small levy on their assets after death to mitigate that risk [½]

<u>Disadvantages</u>:

- this could be an unstable source of income [½]
- any additional levy on an individual's assets after death could cause resentment if it is seen as obstructing a desire to provide for one's family [½]
- the value of assets after death could show wide variation if they include property simply because of where someone lives [½]
- it may not be considered fair to have a single threshold for property values [½]
- initially at least, the levy is being charged to a group of people who have probably had no need for care so it may be considered unfair [½]
- the levy could be abused by individuals transferring assets to healthier family members [½]
- may be unpopular if people have effectively paid twice through general taxation and now through an inheritance levy [½]

(c)
<u>Advantages</u>:

- may be popular with those potentially needing care [½]
- companies providing care may attempt to minimise the levy by keeping profits low [½]
- maybe by keeping expenditure high [½]
- which should encourage higher sector wages and/or good quality care [½]
- or by keeping fees low and therefore providing good value for money [½]
- and avoid criticism that State funding is inflating the profits of these companies [½]
- with the market becoming larger the profit threshold could be set reasonably low and still encourage companies to enter the market [½]

<u>Disadvantages</u>:

- if the profit threshold is set too low then companies may not be so keen to enter the market [½]
- the threshold may need to be set low to raise sufficient funding [½]
- the levy cost may be passed to customers and therefore increase care costs [½]
- the quality of care may be reduced if companies target the same net profit [½]
- if the profit threshold is not set as a proportion of turnover it would discourage large companies running many care facilities and so may discourage efficiency from economy of scale [½]
- this levy source may be volatile when there are economic shocks [½]

(d)
<u>Advantages</u>:

- the combination allows the State to use a high levy base for individual contributions in order to keep the levy rates as low as possible [½]
  and therefore may be more achievable and/or popular [½]
- including the levy on assets after death may also produce some positive effects on the wider economy [½]
- the profits levy utilises an additional levy base to help keep all levy rates down [½]
- it should avoid the care companies making excessive profits at the expense of State funding [½]
- and should help maintain good quality care in an efficient way [½]
- having multiple funding sources offers the flexibility to react to changes in the economic and demographic landscape [½]
  ie a reduction in one source of income may be offset by increases in another [½]
- eg if mortality is high, the levy on retirement income may reduce but the inheritance levy may increase [½]

<u>Disadvantages</u>:

- having multiple funding sources may make the approach too complex [½]
- and introduce an added decision as to how to split the relative contributions from each source [½]

[Max 14]

(iv)

The levy rate calculation will need to compare the amount of funding provided by levies with the total future cost of care for those entering care. [½]
The State's funding objectives need to be understood and considered when setting the assumptions [½]
eg does the State wish to fund prudently or on a best estimate basis? [½]

<u>Information on care costs</u>

Average care costs per person over 5 years (say)
 expect year on year variation so this smoothes the experience [½]
Split by care level
 expect costs to vary between residential and nursing care [½]
Split by broad geographical regions
 to recognise differing property and staff costs [½]
Costs by age
 to project lifetime care costs after entering care [½]
Probability of entering each level of care by age
 in order to establish the initial funding requirement at each age [½]

<u>Information on levy bases</u>

Income, asset and profit thresholds
 in order to assess the levy bases [½]
Total retirement income above income threshold (by region if appropriate)
 to project the income levy base by future year [½]
Average total asset values on death above asset threshold over 5 years (say, and by region if appropriate)
 to smooth annual variation and project asset levy base by future year [½]
Average total care provider profits above profit threshold over 5 years (say)
 to smooth annual variation and project profit levy base by future year [½]
Total estimated administration and monitoring costs
 to project the operational costs by future year [½]

<u>Assumptions</u>

Care cost inflation (by level of care if appropriate)
 to project future care cost values [½]
Retirement income inflation (by region if appropriate)
 to project the income levy base by future year [½]
Inflation of asset values (by region if appropriate)
 to project the asset levy base by future year [½]
Inflation of care provide profits (by region if appropriate)
 to project the profit levy base by future year [½]
Projected population by age (and region if appropriate) before entering care
 to project the population at risk of entering care [½]
Mortality assumptions for those in care (probably by age and period in care)
 to project the care costs by future year [½]
Expected investment returns and/or strategy
 to discount future care costs [½]

[Max 6]

(v)

<u>Implementing the regime in practice</u>

From the implementation date everybody who is assessed as needing care will receive State funding for the cost of providing the statutory level of care. [½]
If they choose to receive additional care then they will have to pay the extra costs themselves. [½]
Care providers will need to split the costs and invoice the State and individuals respectively. [½]
The State will need to monitor care invoices to ensure that they are not meeting costs for care above the statutory level of care. [½]
If the State is to meet the costs for those already receiving care at the implementation date, then their care will need to be assessed and action taken as follows: [½]

- if they are receiving less than the statutory level of care then their care should be improved to that level and the total costs invoiced to the State [½]
- if they are receiving more than the statutory level of care then the provider will have to split the costs for statutory and additional care and invoice the State and the individual respectively [½]
- noting that care funding will now be available for those who were previously receiving no State support as their assets exceed the threshold [½]

There will also be a need to appoint administrators and investment managers. [½]
<u>Meeting the short term and long term costs</u>
There will inevitably be two potential mismatches when the new regime is implemented: [½]

- the difference in amount and timing between the levies received and the amount of the total fund required under the Terminal Funding approach [½]
- the sufficiency of the fund to meet the actual care costs incurred [½]

although the latter is unlikely in the short term given the fund is expected to cover care costs for years into the future. [½]
and the fund should therefore also be sufficient to deal with any short term timing differences in the first once the scheme is established [½]
If there are any initial short term deficits then these might need some external support, probably from general taxation or very modest State borrowing. [½]
These potential mismatches are minor, however, compared to the initial deficit that would be created if the fund were to cover the same level of care for those already in care at the implementation date. [½]
Options to fund this initial deficit might be:

- additional State borrowing - but this may need to be significant [½]
- an additional levy on those already receiving care since they may now experience significant savings from having lower care costs. [½]
  Although they will still be paying the ordinary levies as well unless they have income and/or estate values below the corresponding thresholds [½]
- setting the initial levy rates higher so that they are designed to cover the initial deficit over the first 5 or 10 years (say) after implementation [½]

In common with the funding for the long term costs of individuals entering care, a combination of these may be preferable in order to prevent any one becoming too

onerous [½]
although the latter may be consistent with an expectation that the levy rates might need to increase over time if there is increasing demand. [½]
The experience of the fund and expectations for the future size of the levy bases will need to be reviewed regularly [½]
in order to assess whether the levy rates should be updated [½]
and/or the split between levy sources should be adjusted. [½]

<u>Provisions for existing and future beneficiaries</u>

The long term costs can be assessed initially using the same information that was used to determine the levy rates [½]
by calculating the fund required at the point each person enters the new care regime after the implementation date allowing for their age and the geographical region providing the care. [½]
The total fund required will be the sum of all the individual funds. [½]
Over time experience will evolve and the fund will have to be monitored regularly to ensure that it remains adequate to meet the expected costs for the individuals who are receiving the relevant care. [½]
If the fund is to meet care costs for those already in care at the implementation date, the size of the initial fund needed can be assessed in the same way as for those entering care after the implementation date. [½]
Note that these individuals will likely have an older average age than those entering care after the implementation date [½]
so their future care costs should be lower. [½]

<u>Other relevant points</u>

The State will need to be very clear in defining the statutory level of care in order to make it simple for care providers to determine what are statutory costs to be invoiced to the State and additional costs to be invoiced to the individual. [½]
The additional costs are likely to be the difference between the cost of the chosen level of care and the cost of statutory care. [½]
Having well defined statutory care should also help to keep down the costs of administering the care regime for the State by avoiding disputes with care providers. [½]
It will probably be necessary to monitor care providers to ensure that they are providing care in line with the statutory requirements. [½]
(½ marks may also be awarded for other relevant points up to 2 marks in total for this section)

[Max 8]
[Total 35]

(i) General bookwork answered well.

(ii) As with question 2(ii), many candidates scored well in providing sufficient advantages and disadvantages to get a large proportion of the marks available.

(iii) *The advantages and disadvantages in this part of the question was answered less well. Some candidates drifted into political observations rather than remaining focused on the practical implications of each funding source.*

(iv) *Much of the information and assumptions needed to answer this question well could be inferred from other more common situations, e.g. around funding. Some of the more obvious information was also detailed in the question, i.e. the amount of inheritance tax, level of company profits etc.*

(v) *In this part of the question there was limited attempts by candidates to really address the question of whether, and how, the State might deal with people already receiving care, which was a key part of the question.*

[Paper Total 100]

END OF EXAMINERS' REPORT