



Institute
and Faculty
of Actuaries

EXAMINERS' REPORT

SP4 - Pensions and Other Benefits

Specialist Principles

September 2022

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.

Sarah Hutchinson
Chair of the Board of Examiners
December 2022

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

The aim of the Pensions and Other Benefits Specialist Principles subject is to instill in successful candidates the ability to apply, in simple situations, the mathematical and economic techniques and the principles of actuarial planning and control needed for the operation on sound financial lines of providers of pensions or other employee benefits.

This subject examines the ability of candidates to apply core actuarial techniques and concepts, together with specific knowledge of pensions and other benefit arrangements to simple, but practical situations.

The Examiners therefore look for candidates to apply their knowledge of the Core Reading to the specific situation that the Examiners asked, having read the question carefully. Many candidates write around the subject matter of the question in more general fashion or focus on one aspect of the issue at great length, in either case gaining few of the marks available.

Well prepared candidates demonstrate that they have used their time well - an attempt to get a logical flow is a big advantage in making points clearly and without repetition. This also 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. 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 a well-balanced exam paper and well prepared candidates were able to score well and pass. The pass mark of 60, reflects the performance of a minimally competent candidate.

It is very important that candidates consider all aspects of the question and read the preamble fully. By using all of the information available, candidates can ensure they give a full answer. Giving just a little more to clearly show depth can turn a close fail into a pass. 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.

The questions that were least well answered in this paper were questions Q4 relating to the calculation of a contribution rate to target a certain net replacement ratio and Q6 relating to the risk arising from different retirement options for a DC scheme.

Candidates are reminded to study the whole syllabus as all areas may be tested.

Candidates are reminded to pay attention to the command verbs. A list of what is expected for each command verb is available on the IFoA website.

C. Pass Mark

The Pass Mark for this exam was 60
128 presented themselves and 66 passed.

Solutions for Subject SP4 - September 2022

Q1

(i)

Individual member data / cashflows:

(1 mark for general comment, or 1/2 mark per example of member data capped at 1 mark)

Details of the benefits to be secured (for example the benefit specification/special terms for individual members/etc)	[1/2]
Codification of discretions including:	[1/2]
Treatment of future discretionary pension increases	[1/2]
Treatment of lump sum death benefits that are paid under trustee discretion	[1/2]
Treatment of any option terms	[1/2]
Details of whether scheme members have a relevant dependant or not	[1/2]
Details of historic mortality experience	[1/2]
Or postcode information	[1/2]
Details of assets held	[1/2]
as a large scheme is likely to transact at least some of the assets in specie	[1/2]
Details of any data quality issues e.g. GMPe not complete	[1/2]

[Marks available 6½, maximum 4]

(ii)

Regulation	[1/2]
For example any matching/reserving requirements	[1/2]
Expenses including:	[1/2]
Upfront costs for quoting/setting up new business	[1/2]
Ongoing administration costs	[1/2]
Profit loading	[1/2]
Competitive environment e.g. whether there is a full tender process or how many insurers are involved	[1/2]
Reinsurance pricing	[1/2]
If the transaction will be paid for in cash or a transfer of assets	[1/2]
Assets available to underwrite new business	[1/2]
As this will impact on the assumed discount rate	[1/2]
Often insurer pricing is based on the yields available on high quality bonds and government securities	[1/2]
Prevailing market conditions	[1/2]
For example the long term inflation expectations	[1/2]
Studies concerning the setting of demographic assumptions e.g. latest longevity	
Projections	[1/2]
Details of any previous transaction - particularly where this may lead to a selection effect (e.g. if the previous transaction was subject to medical underwriting)	[1/2]
Appetite for business	[1/2]

Which may be influenced by how prepared the scheme is for buyout	[½]
e.g. whether there is sponsor agreement / how clean data is / etc	[½]
Complexity of benefits / readiness for transaction etc	[½]
Or whether the scheme is closed to accrual or not	[½]
Or what other opportunities for business are available to them	[½]
Or whether they have capacity for a scheme of this size	[½]
	[Marks available 12, maximum 5]
	[Total 9]

This question was generally well answered.

Candidates who did better for part (i) spent their time giving a range of appropriate items, whereas lower scoring candidates tended to provide a list of data items.

For part (ii), many candidates gave a good quality response.

Q2

(i)

Interest rate	[½]
Inflation	[½]
Mortality	[½]
Covenant	[½]
Liquidity/cashflow	[½]
Currency risk (if any benefits paid in foreign currency)	[½]
<i>(Award credit for any valid risk)</i>	

[Marks available 3, maximum 2]

(ii)

General:

Purchasing a buy-in contract removes all interest/inflation/mortality risks from the scheme	[½]
And passes them to an insurer	[½]
Although should the insurer default, the liabilities will need to be met by the scheme	[½]

Interest/Inflation:

Interest rate risk can be hedged by invest in assets that move in line with the same risk free rate underpinning the liability discount rate	[½]
For example fixed interest government bonds / interest rate swaps / other valid example	[½]
As the discount rate falls and the value of the liabilities increases, the value of these assets would also increase	[½]
The hedge can be improved by taking into account the duration of the liabilities	[½]
Or the full cashflow profile	[½]
And matching to bonds of appropriate term	[½]
Similarly inflation risks can be hedged by investing in assets that also move in line with inflation	[½]
For example index linked bonds	[½]
Or inflation swaps	[½]
The exposure to yields can be leveraged	[½]

For example using repos	[½]
This is often known as Liability Driven Investment (or LDI)	[½]
Mortality:	
Mortality risk can be hedged using a longevity bond	[½]
Where coupon payments are linked to the mortality experience of a given set of lives	[½]
And will pay higher amounts when longevity is higher than expected	[½]
Mortality risk can be hedged using a longevity swap	[½]
Named lives swaps protect the pension scheme against members (generally just those who are already receiving a pension) living longer than expected over a pre-agreed term with the payments being linked to the mortality experience of the scheme's actual membership rather than the national population.	[½]
Population index swaps use a population index (such as the national index for the membership's location) as the reference measure rather than the actual scheme's experience	[½]
The scheme retains risk to the extent that the reference population does not exactly match the mortality characteristics of the scheme	[½]
Other:	
Covenant risk can be hedged by investing in a derivative which pays out on sponsor insolvency	[½]
For example a credit default swap	[½]
Currency risk can be hedged by holding assets in the appropriate currency to meet the benefits due	[½]
A cash investment could be held to ensure sufficient liquidity to pay pensions / other benefits	[½]
Or investments could be made in readily marketable assets	[½]
Or investments which produce a running yield	[½]

[Marks available 14½, maximum 8]

[Total 10]

Part (i) was well answered with many candidates scoring full marks.

Part (ii) proved to be a little more challenging. Candidates were generally able to write appropriate responses, but many found challenging providing enough points to score well.

Q3

(i)

(Maximum 1½ mark per paragraph below)

Competence requirements	[½]
Requiring a minimum level of qualification	[½]
Requiring a minimum level of experience	[½]
Requiring demonstration of ongoing competence e.g. CPD	[½]
Annual certification for statutory roles	[½]
Integrity requirements	[½]
Whistleblowing / speaking-up requirements	[½]
Checks for bankruptcy / criminal record on actuaries	[½]

Disciplinary procedures	[½]
Code of practice	[½]
Professionalism requirements	[½]
Professional guidance to provide a framework for carrying out responsibilities	[½]
Require membership of a professional body	[½]
Regulation of professional body (e.g. by state, or self-regulation)	[½]
Disclosure requirements	[½]
Requirement to disclose data used	[½]
Requirement to disclose material assumptions	[½]
Requirement to disclose limitations of advice	[½]
Illustration of risks / sensitivity analysis	[½]
Managing conflicts of interest	[½]
Forbid actuaries to practice where there is a conflict of interest	[½]
Or require the conflict to be disclosed	[½]
Review of actuarial work	[½]
Peer review of work / independent actuarial review	[½]
Regulator sampling of work signed off by actuaries	[½]
Technical guidance	[½]
For example ranges of acceptable parameters	[½]
Or specified methodology	[½]
	[Marks available 14, maximum 4]
(ii)	
General considerations (<i>maximum 2 marks</i>)	
A prudent approach is most likely to be appropriate for a funding valuation	[½]
To ensure there are sufficient funds available for paying benefits	[½]
Consistency of approach with previous valuations	[½]
Long-term objectives (e.g. self-sufficiency or buy-out)	[½]
Regulatory requirements / funding guidance	[½]
The choice of bond yield	[½]
May be specified by legislation	[½]
The market conditions at a consistent date to the asset valuation	[½]
Typically a risk free bond	[½]
For example a government bond	[½]
Or a corporate bond with a high credit rating	[½]
Whether to use a specific bond	[½]
Or a yield curve derived from a set of bonds	[½]
Whether to use a spot rate	[½]
Typically chosen at a duration consistent to the duration of a scheme's liabilities	[½]
or the full yield curve	[½]
Whether to use a real yield or a nominal yield	[½]
Which typically depends on the benefit structure being valued	[½]
The choice of risk premium	[½]

Should reflect the expected return (above the risk free rate) from the investments	[½]
For example higher risk assets like equities are expected to provide greater returns over the long term	[½]
This could be based on modelling / advice from investment manager	[½]
Or the expected change in investment strategy over time	[½]
For example should the allowance for risk premium be restricted to growth assets	[½]
or the proportion of liabilities that could be backed by such investments	[½]
or an explicit time-horizon approach with a specified de-risking date	[½]
or a specified de-risking profile (e.g. linear variation between two dates)	[½]
Should reflect the level of prudence required	[½]
For example a lower risk premium would be appropriate for a prudent valuation	[½]
Taking account of the prudence in other assumptions / funding method	[½]
Should reflect the employer covenant	[½]
For example a higher risk premium might be adopted where the employer covenant is stronger	[½]
Whether the risk premium is fixed over time or varying	[½]
The risk premium could be constant at each valuation or vary depending on the actuary's assessment of market conditions	[½]
Whether the risk premium is the same for valuing all liabilities	[½]
For example a different premium could be used to value pensioners and non-pensioners	[½]
Reflecting that different assets might be held to back liabilities in respect of different members	[½]
May consider historic asset performance relative to the risk free rate	[½]
Could be determined from a stochastic model of expected return based on the scheme's assets	[½]
	[Marks available 19½, maximum 9]

(iii)

The valuation results including the value of assets, liabilities and the surplus/deficit/funding level at the previous valuation	[½]
The valuation results including the value of assets, liabilities and the surplus/deficit/funding level at the latest valuation	[½]
Summary of method/assumptions	[½]
Explanation of the change in funding level since the previous valuation	[½]
The ongoing contributions payable by the sponsor	[½]
The ongoing contributions payable by scheme members	[½]
Deficit recovery plan contributions	[½]
Deficit recovery plan end date	[½]
The impact on the expected level of benefits on sponsor insolvency	[½]
And details of any central discontinuance fund	[½]
Details of the current investment strategy	[½]
And relevant ESG considerations	[½]
Contact details for the administrator/trustees	[½]
Details of further documents available at member request	[½]
Any significant events since the valuation	[½]
	[Marks available 7½, maximum 4]
	[Total 17]

Parts (i) and (iii) were well answered with many candidates scoring full marks.

Part (ii) was less well answered. Better scoring candidates structured their answer to comment on both the choice of the bond yield and the risk premium separately. Those who scored less well, tended to only focus on the risk premium and missed making some straightforward points about the bond yield which would have increased their marks.

Q4

(i)

The relative level of income, after tax, required for an individual after retirement
Relative to their income, after tax, before retirement. [1]

Net replacement ratio = Net income in year after retirement / net income in year before
retirement [1]

[Marks available 2, maximum 1]

(ii)

Loans which needed to be serviced pre-retirement may have been paid off before
retirement [1/2]

For example mortgages [1/2]

The need to save additional income for retirement is no longer there [1/2]

There may be lower cost of living [1/2]

For example no commuting / children finished education etc. [1/2]

Or additional discounts that may be available e.g. winter fuel allowance [1/2]

There may be other income available e.g. state pension / access to other savings [1/2]

But these may be offset e.g. by higher travel/leisure costs / healthcare / heating [1/2]

An individual may have had a very high income and the amount required in retirement
may be a smaller proportion of this [1/2]

[Marks available 4½, maximum 3]

(iii)

Assumptions (*maximum 5*)

Employee starts contributing at age 25 (or appropriate alternative) [1/2]

Employee ends active service age 65 (or appropriate alternative) [1/2]

The employee retires immediately at age 65 (or appropriate alternative) [1/2]

There is no allowance for withdrawal [1/2]

Or periods out of work [1/2]

Or part time contributions [1/2]

There is no allowance for death before retirement [1/2]

The contribution rate is assumed to remain a constant proportion of salary over the entire
working lifetime [1/2]

Salaries are assumed to increase at 2.5% pa (or appropriate alternative) [1/2]

Investments are assumed to increase at 4% pa (or appropriate alternative) [1/2]

New contributions are assumed to be invested in proportion to the existing funds [1/2]

The investment return is assumed to be the same every year [1/2]

For example no life-styling is assumed [1/2]

Or any other changes to the strategy over time [1/2]

An appropriate annuity rate at retirement is £30 per £1pa of pension (or appropriate
alternative) [1/2]

Contributions are paid annually in arrears (or appropriate alternative) [½]
 There is no taxation / taxation is at the same level immediately before and after retirement [½]

Calculation approach (*maximum 2*) (2)
 2 marks = any sensible approach that closely reflects a realistic scenario
 1 mark = any approach which approximates the scenario, but which relies on some measure of over-simplification
 0 marks = incorrect approach

Calculation methodology (*maximum 2*) (2)
 2 marks = methodology includes all steps and is set out logically with appropriate equations fully defined
 1½ marks = methodology is largely complete, but some terms not defined or steps missing
 1 mark = only equations used with no explanation or description
 ½ mark = only description of methodology but no backing calculations
 0 marks = no explanation of methodology

Calculation results (*maximum 1*) (1)
 1 mark = correct numerical calculation based on all assumptions/methodology set out
 ½ mark = one numerical error
 0 marks = more than one numerical error in calculation

An example of a solution that would score [5] for calculation marks is set out below:

Pension at retirement is determined by the accumulated contributions and the annuity rates at retirement.

$$\text{Pension at retirement} = \text{pot at retirement} / \text{annuity rate}$$

This should be set equal to the 50% of the salary, in the year before retirement, to determine the required contribution rate.

$$\text{Pension at retirement} = 0.5 \times \text{Salary at retirement} = 0.5 \times S \times (1+e)^n, \text{ where } S \text{ is the current salary, } e \text{ is the annual salary increase rate and } n \text{ is the working lifetime.}$$

The pot at retirement is the accumulated value of the contributions, allowing for salary growth and investment growth.

$$\text{Pot at retirement} = \text{Salary} \times \text{Contribution rate} \times [(1 + \text{investment return})^{(\text{working lifetime})} - (1 + \text{salary growth})^{(\text{working lifetime})}] / [\text{investment return} - \text{salary growth}]$$

$$= S \times c \times [(1+r)^n - (1+e)^n] / [r - e], \text{ where } S \text{ is current salary, } c \text{ is contribution rate, } r \text{ is investment return, } n \text{ is working lifetime, } e \text{ is salary growth.}$$

Rearranging the above

$$c = 0.5 \times (1+e)^n \times \text{annuity rate} \times [r - e] / [(1 + r)^n - (1 + e)^n]$$

$$\text{Working lifetime (n)} = 65 - 25 = 40$$

$$\text{Accumulation factor} = (1.04^{40} - 1.025^{40}) / (0.04 - 0.025) = 141.1$$

$$\text{Therefore, contribution rate, } c = 0.5 \times 1.025^{40} \times 30 / 141.1 = 28.6\%$$

[Marks available 10, maximum 10]

(iv)

Options for ESG:

Could consider only funds which meet a specified ESG rating	[½]
(any valid example of an ESG issue which could be considered)	[½]
Or ethical funds	[½]
Which may avoid certain types of investments e.g. related to smoking or oil	[½]
Could consider a social impact investment fund	[½]
Which invests in companies or projects that manufacture goods or services designed to have an explicit positive impact on society	[½]

Considerations:

Consider whether to only offer ESG funds or a wider variety of funds	[½]
If a wider variety of funds is offered, consider the proportion of ESG funds to other funds	[½]
And what range of ESG funds should be available	[½]
Whether to have a default ESG fund	[½]
Legislative requirements	[½]
For example any ESG disclosures	[½]
Minimum ESG targets	[½]
Whether there are funds available to meet the objectives	[½]
For example the expected return is sufficient to provide growth on contributions to meet member needs in retirement	[½]
The impact on return may be detrimental if it restricts the range of assets available for investment	[½]
But it may be positive to the extent that ESG factors correlate with increasing returns or reducing risk...	[½]
... Taking into account the expected risks and financial impacts of climate change	[½]
... and the long term impact of sustainable investments	[½]
Employee views on ESG issues	[½]

[Marks available 10, maximum 6]

[Total 20]

Parts (i) and (ii) were well answered and many candidates were awarded full marks.

Part (iii) was a calculation question and responses to this were varied. Separate credit was given for the assumptions, calculation approach, calculation methodology and the calculation results. It was therefore possible to score reasonably well on this question without obtaining an appropriate numerical answer, provided the response was well thought out and assumptions clearly articulated.

Half of the marks available for part (iii), were in respect of articulating assumptions and candidates rarely scored highly in this area. Most candidates were able to set out the key financial assumptions, but few set out the other implicit assumptions made in their calculation approach, such as timing of contributions or a single investment strategy throughout the period to retirement.

Candidates presented us with many ways to calculate the contribution rate, resulting in a wide range of answers. All were given appropriate credit in line with the principles articulated above. The solution provided is just one example of a solution that would score full marks. Solutions were also accepted where the candidate had built a cashflow model in Excel and copied their workings and results into their script.

Q5

(i)

The ability	[½]
and willingness	[½]
of the sponsor to pay (or the trustees to require the sponsor to pay) sufficient contributions	[½]
to ensure that the scheme's benefits can be paid as they fall due	[½]
It is often measured as strong, tending to strong, tending to weak or weak	[½]
[Marks available 2½, maximum 2]	

(ii)

An independent business review is an external/independent assessment of the sponsor covenant by a specialist adviser	[½]
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The sponsor covenant does not need to be considered if:

The scheme is very well funded	[½]
The covenant is strong enough to be deemed certain	[½]
The covenant is so weak as to be deemed nil	[½]

The Trustees may also consider:

If there has been any significant change since the previous independent review	[½]
The length of time since the previous independent review	[½]
The level of reliance on the employer	[½]
e.g. the investment risk in the Scheme	[½]
e.g. any guarantees etc in place	[½]
e.g. the prudence of the funding basis	[½]
The stability of the business sector the sponsor operates in	[½]
The size of the scheme relative to the sponsor	[½]
The complexity of the group structure	[½]
The relationship / transparency between the sponsor and the scheme trustees	[½]
The availability of public information e.g. recent accounts / credit ratings	[½]
The competence of the board to assess the covenant without specialist advice	[½]

Practicalities/Other (*maximum 1*)

Cost	[½]
Time to prepare	[½]

Availability of expertise on business	[½]
Regulation/guidance/best practice	[½]
(other valid practicalities)	[½]

[Marks available 10½, maximum 5]

(iii)

The Trustees should consider covenant as part of an integrated approach to risk management. [½]

Consider the investment strategy [½]

May take the opportunity to de-risk [½]

For example increase proportion of investments held in matching assets like bonds [½]

A lower risk strategy typically has lower expected returns [½]

and therefore the contribution requirements are likely to be higher [½]

and a stronger sponsor is more likely to be able to support higher contributions [½]

For example consider bulk annuity transaction on all/part of the liabilities [½]

It is not usually appropriate for the trustees to introduce additional risk into the investment strategy [½]

However if this was requested by the sponsor then the trustees would be more likely to accept this request if the covenant was stronger [½]

As the sponsor could support the scheme in the future if the value of the assets fell [½]

Consider the contribution requirements [½]

There may be no action if the scheme is already in surplus [½]

The trustees may request additional contributions [½]

As these are more likely to be affordable [½]

For example to remove any deficit over a faster time period [½]

Or to bridge any gap between full funding on an ongoing basis and the cost of buying out benefits with an insurer [½]

Or to pay an immediate lump sum to buy out the benefits [½]

It is not usually appropriate for the trustees to suggest decreasing the contributions [½]

However if this was requested by the sponsor then the trustees would be more likely to accept this request if the covenant was stronger [½]

As they might have increased confidence in the ability for the sponsor to pay the required contributions over the longer term [½]

Consider the funding approach [½]

The trustees may seek to strengthen the funding basis [½]

For example to move to a self-sufficient funding basis [½]

Where there is sufficient prudence that the scheme is expected to have no further reliance on the sponsor [½]

Or adopting a secondary funding target at a solvency level [½]

This could be done for example by (*maximum 1 mark*)

Reducing the discount rate [½]

Including an expense allowance [½]

Increasing the long term assumed rate of mortality improvements [½]

[any other relevant suggestion] [½]

A more prudent funding approach is likely to result in higher contributions all else being equal [½]

Other actions:

Remove any existing covenant restrictions [½]

e.g. dividend policy/contingent assets/guarantees	[1/2]
Review discretionary practices	[1/2]
Review option terms	[1/2]

[Marks available 17½, maximum 9]

(iv)

Financial assumptions not in line with expectations e.g. investment returns, inflation, pension increases etc	[1/2]
Demographic assumptions not in line with expectations e.g. mortality, member options, expenses etc	[1/2]
Contributions higher than expected e.g. special contributions	[1/2]
Change in assumptions	[1/2]
Change in benefits/legislation	[1/2]
Change in expected future treatment of discretionary practices	[1/2]
Interest on existing surplus	[1/2]
Use of attained age method / funding method that generates surplus over time	[1/2]
Change in funding method	[1/2]
Material event e.g. redundancy exercise / incentive exercise etc.	[1/2]

[Marks available 5, maximum 2]

(v)

Legislation may specify how surplus should be treated	[1/2]
Or limit its use e.g. if a minimum funding level must be retained	[1/2]
Or similar restrictions may be written into the Scheme Rules	[1/2]
Do the trustees have the power to do this unilaterally or do they need consent from the sponsor	[1/2]
As the sponsor is ultimately responsible for financing the benefits	[1/2]
Is there a precedent for past discretionary increases / member expectations	[1/2]
And will this set a precedent for the future?	[1/2]
What is the size of the surplus?	[1/2]
Does it convert into a meaningful pension increase?	[1/2]
What is the source of the surplus?	[1/2]
For example if it is arising from company contributions it may be appropriate to refund back to the sponsor	[1/2]
For example if it is arising from volatile experience, it may be appropriate to use it to de-risk	[1/2]
For example if it is arising from lower than expected pension increases it may be appropriate to award discretionary increases	[1/2]
What is the strength of the funding basis?	[1/2]
For example if it is not very prudent it may be appropriate to retain as a buffer against adverse experience	[1/2]
But if there is a surplus on buyout basis then there is less risk in using it	[1/2]
How much risk is there in the investment strategy	[1/2]
For example if this is very risky then it may be more appropriate to retain the surplus as a buffer against adverse experience	[1/2]
The permanence of the surplus	[1/2]
For example if due to volatile markets it may be appropriate to retain	[1/2]
The speed of removal of the surplus	[1/2]
e.g. the amount of the surplus that should be used / whether any should be retained	[1/2]
Equitable treatment of members	[1/2]

For example deferred members may not see any improvement if the surplus is distributed via pension increase	[½]
And this may cause industrial relations issues	[½]
May be appropriate to uplift non-increasing benefits to keep track of inflation for instance	[½]
Practicalities e.g. cost of calculation / communication etc	[½]
Consideration of taxation charges to members as a result of increasing benefits	[½]
Other options for using the surplus (to ensure that this is the most appropriate use)	[½]
	[Marks available 14½, maximum 8]
	[Total 26]

This question was generally well answered with candidates scoring well for parts (i), (ii), (iv) and (v). Part (iii) was more mixed.

For part (iii), many candidates suggested actions which were inconsistent with the prudent approach required of Trustees - for example taking more investment risk or reducing contributions. These points only scored credit if the candidate noted that they were not generally appropriate.

Q6

(i)

An annuity provides a guaranteed income for life	[½]
Mortality risk is passed to the insurer	[½]
So if the member lives longer than assumed the insurer must absorb the cost	[½]
And if the member dies sooner than expected e.g. due to ill health, the insurer gains	[½]
The investment risks are passed to the insurer	[½]
If the annuity is linked to an index, the inflation risks are passed to the insurer	[½]
Otherwise the member bears any inflation risk	[½]
If the member has a spouse/dependant, the risk of providing for them can also be passed to the insurer for additional premium	[½]
The member bears the risk that the insurer fails	[½]
Although this may be mitigated to some extent if there is a compensation scheme available	[½]
Liquidity risk to finance the high upfront cost of annuity purchase	[½]
The member risks paying more than fair value for an annuity if for example the market lacks competition	[½]
Although this risk may be mitigated by regulation	[½]

[Marks available 6½, maximum 4]

(ii)

The mortality risk is borne by the policyholders and not the provider	[½]
But it is pooled across all policyholders and does not sit with an individual	[½]
If the policyholder has a spouse/dependant, there is a risk that there will be insufficient funds for them if the policyholder dies	[½]
As there is no dependant benefit	[½]
The investment risk is borne by the policyholder and not the insurer	[½]
But is pooled across all policyholders	[½]
There is an expense risk with the provider in both cases	[½]

Although the profile of the risk is different because it is based on an initial premium for an annuity and an annual management charge for the alternative arrangement	[½]
With the risk that the annual charge could increase in future	[½]
The alternative arrangement payment profile should increase with age	[½]
As the probability of death over a monthly period increases with age, and therefore the unit price naturally increases with age	[½]
Although this may not increase in line with the cost of living as an index linked annuity would	[½]
And so the policyholder bears inflationary risks	[½]
There is cashflow risk from the alternative arrangement because:	[½]
The timing of payments is uncertain	[½]
As they only occur when another policyholder dies	[½]
The amount of payments is uncertain	[½]
As they are based on the available units of the policyholder who dies	[½]
The overall “smoothness” of the cashflow depends on the number of policyholders	[½]
And if there is a large number then there could be a good degree of stability	[½]
Although this requires new policyholders to join over time	[½]
Whereas the annuity provides a regular income with certainty in timing and amount	[½]
The cost of purchasing units in the alternative arrangement should be lower than an annuity	[½]
Because the provider is taking on less risks	[½]
And therefore the reserving requirements are likely to be much lower	[½]
With both an annuity and the alternative arrangement, an initial premium is paid that cannot then be easily disinvested from the arrangement	[½]
The covenant risk may differ between the annuity provided and the provider of the alternative product	[½]

[Marks available 13½, maximum 6]

(iii)

The member will wish to retain some growth potential	[½]
And inflation protection while the fund is invested	[½]
The length of time the member intends to draw down benefit	[½]
Including if there is any legislative maximum age at which funds must be annuitised	[½]
And taking account of mortality drag	[½]
Which means that annuity purchase at later ages is comparatively expensive	[½]
Any legislative requirements	[½]
The size of the fund	[½]
If the pot size is small this may limit the types of investment available	[½]
If the pot is small then the member may wish to limit volatility	[½]
The choice of funds available	[½]
And any appropriate ESG considerations	[½]
If the drawdown will last a number of years, then the member may include a bias towards growth assets	[½]
For example equities	[½]
But the member may wish to include an element of life-styling in the period before any annuity purchase	[½]
i.e. de-risking the strategy to better match annuity pricing	[½]
Cashflow requirements	[½]
The member may invest in assets with a high running yield	[½]
To avoid needing to sell assets in order to draw down funds	[½]

Although this depends on the level of drawdown required	[½]
The expense of running the fund	[½]
Including management fees	[½]
Transaction fees on sale of assets	[½]
Financial advice required	[½]
Tax treatment of any investments	[½]
The risk appetite of the member	[½]
Which may be influenced by what other funds they have available	[½]
The funds could be diversified to reduce concentration risk	[½]
	[Marks available 14, maximum 8]
	[Total 18]

This was the least well answered question on the paper with part (ii) proving more challenging than parts (i) and (iii).

Part (ii) required candidates to assess the risk profile of an unusual retirement product. Some candidates did not attempt this question. Candidates who did, were generally able to apply the knowledge learned to this situation and scored well.

[Paper Total 100]

END OF EXAMINERS' REPORT



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