# INSTITUTE AND FACULTY OF ACTUARIES

# EXAMINATION

25 September 2019 (am)

## Subject SP4 – Pensions and other Benefits Specialist Principles

*Time allowed: Three hours and fifteen minutes*

***INSTRUCTIONS TO THE CANDIDATE***

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *Mark allocations are shown in brackets.*
4. *Attempt all questions, begin your answer to each question on a new page.*
5. *Candidates should show calculations where this is appropriate.*

***Graph paper is NOT required for this paper.***

*AT THE END OF THE EXAMINATION*

*Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.*

*In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.*

 

**1** The managers of a defined contribution pension scheme are reviewing the scheme's investment strategy. Currently, scheme members can choose from a number of investment funds in which to invest their contributions. Where members do not specify a choice, their contributions are invested in a default investment strategy which has been set by the managers.

(i) Explain why defined contribution schemes offer a default investment strategy. [2]

(ii) Describe a typical default investment strategy. [2]

Most members' funds are invested in the default investment strategy. The default investment strategy is based around the assumption that members use their entire fund to buy an annuity at retirement.

The table below shows how members have chosen to take their benefits over the last three years:

| *Percentage of members taking each option for the year ended 31 December* | *2018* | *2017* | *2016* |
|---|---|---|---|
| Whole fund taken to purchase an annuity | 5% | 20% | 35% |
| Whole fund taken as single cash sum | 55% | 30% | 0% |
| Part of fund taken as cash, remainder used to buy an annuity | 10% | 35% | 55% |
| Whole fund used entirely for income drawdown | 15% | 5% | 5% |
| Part of fund taken as cash, remainder used for income drawdown | 15% | 10% | 5% |

(iii) Outline the issues which influence why members might prefer to take their whole fund as cash. [4]

One of the managers has proposed that the default investment strategy is changed to one which is based on the assumption that members take their whole fund as cash at retirement.

(iv) Discuss the issues that the managers will need to consider to agree to the proposal. [6]
[Total 14]

**2** (i) Describe the Pay As You Go method of financing benefits together with two other methods of financing benefits, setting out an advantage and disadvantage of each. [6]

The government of a developing country is proposing a series of measures to protect pensioners in defined benefit pension schemes including:

- annual actuarial valuations
- minimum funding requirements
- priority for their benefits over other member categories in the event of employer insolvency
- priority of the pensions scheme over other creditors of the employer
- payment of a levy to a central fund to be used in the event of employer insolvency where the scheme is underfunded
- independent oversight of pension schemes.

(ii) Set out the implications of each of these measures for pension schemes in future. [8]

[Total 14]

**3** A professional football club sponsors a pension scheme which provides final salary benefits to its employees on retirement. The scheme provides benefits to all employees at age 60, including the footballers, whose earnings are significantly higher than other employees.

The scheme's actuary is about to perform a funding valuation.

(i) Explain the issues the actuary should consider when setting demographic assumptions for the scheme. [4]

(ii) Suggest possible reasons why the actuary should monitor experience relating to these demographic assumptions. [2]

(iii) Suggest, with reasons, examples of demographic experience which may lead to a surplus in the scheme. [3]

The scheme's trustees would prefer the footballers make other plans for their retirement rather than relying on the pension scheme. They propose that all footballers transfer their benefits out of the scheme.

(iv) Describe the implications for the pension scheme if the footballers leave the scheme and transfer out their existing benefits. [4]

(v) Discuss the advantages and disadvantages for the footballers of moving benefits out of the pension scheme. [6]

[Total 19]

 **PLEASE TURN OVER**

**4** The accounting standards board ('the Board') of a particular country has introduced new disclosure requirements so that stakeholders have a better understanding of the overall financial liabilities of a company.

Pension schemes in the country are generally funded in advance but there is very little enforcement around this so schemes have a wide range of surpluses and deficits.

(i) List the relevant information which could be included in company accounts under the new disclosure requirements. [3]

(ii) Outline how this information would help stakeholders understand the significance of a company's pension scheme liabilities in order to gain a better idea of the company's overall financial position. [4]

The following year the Board reviews the disclosures. They show a very wide range of assumptions used in the valuation of pension scheme liabilities and hence are of limited use to stakeholders.

The Board has decided that consistency is needed to ensure that the pension liabilities are valued in a broadly consistent manner. It has asked an actuary to provide it with proposals on how this could be achieved.

(iii) List the key valuation assumptions and approaches that could lead to significant differences in the values placed on pension scheme liabilities. [3]

(iv) Set out the points the actuary would make in the report to the Board. [5]
[Total 15]

**5** You have just been appointed by the government of a large country to model future state pension expenditure. The state pension is currently paid to all individuals over age 65 provided they have been in paid employment for at least 30 years. It is funded from a levy charged to both employers and employees.

(i) Set out the information you would need in order to produce this model. [4]

(ii) Discuss the features you would include in the model. [6]

(iii) Describe the limitations of the model. [3]

The government has now proposed means testing the state pension so that individuals only receive it if their income from other sources is less than £10,000 p.a.

(iv) Set out the additional information you would need in order to amend the model to allow for this. [3]

(v) Comment on the means testing proposal. [3]
[Total 19]

**6** (i) List the key methods of provision of benefits if a pension scheme is discontinued. [3]

An employer sponsors a defined benefit pension scheme that is closed to new members.

(ii) Discuss the cost and risk implications for the sponsoring employer if they were to secure all benefits of the pension scheme with an insurance company. [5]

The sponsoring employer has received a quotation to transfer all liabilities to an insurance company. The quotation is lower than the amount estimated by the scheme's actuary at the most recent actuarial valuation.

(iii) Suggest possible reasons for the difference in the actual cost and the cost estimated by the actuary. [3]

The sponsoring employer discussed the quotation with the scheme's trustees and agreed not to proceed with the transfer at that time. One year later, the sponsoring employer has received another quotation from an insurance company. The quotation shows that the cost is lower than that received previously.

(iv) Explain why the new quotation may be lower. [4]

The scheme's trustees agreed to proceed with securing all benefits with the insurance company.

(v) Discuss the impact on the scheme members of their benefits being secured with an insurance company. [4]
[Total 19]

## END OF PAPER