

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

02nd May 2016

**Subject ST4 - Pensions and Other Employee
Benefits**

Time allowed: Three hours (14.45* – 18.00 Hrs)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

- 1. Please read the instructions on the front page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception.*
- 2. * You have 15 minutes at the start of the examination in which you are required to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
- 3. You must not start writing your answers in the answer sheet until instructed to do so by the supervisor.*
- 4. The answers are not expected to be any country or jurisdiction specific. However, if Examples/illustrations are required for any answer, the country or jurisdiction from which they are drawn should be mentioned.*
- 5. Attempt all questions, beginning your answer to each question on a separate sheet.*
- 6. Mark allocations are shown in brackets.*
- 7. Please check if you have received complete Question Paper and no page is missing. If so, kindly get new set of Question Paper from the Invigilator.*

AT THE END OF THE EXAMINATION

Please return your answer book and this question paper to the supervisor separately.

- Q. 1)** The government of a developing country wishes to enhance the security of the benefits in occupational defined benefit pension schemes. To help address this, it is considering setting regulations requiring scheme managers to disclose information about their scheme to all the scheme members.
- i)** Outline how the introduction of regulations requiring the disclosure of information to members could increase security for members. (3)
 - ii)** List six key pieces of information that could be issued to members to achieve the objective of increasing security. (3)
 - iii)** Discuss the main advantages and disadvantages of issuing the information set out in part (ii) to members. (3)
 - iv)** Outline other possible regulatory measures that the government could introduce to enhance the security of members' benefits. (3)
- [12]**

- Q. 2)** The government of a developed country is concerned about the rising costs of state pension provision and a lack of private pension provision.
- i)** Suggest possible reasons for the cost of state provision increasing. (5)
 - ii)** Outline possible reasons for the lack of private pension provision. (4)

The government's actuary had suggested to the government that it could introduce a National Pension Savings Scheme. Under this scheme an employee would automatically be enrolled in the scheme on joining a company's employment but would have the right to opt out.

Employers would be required to match employee contributions up to a limit of 6% of salary. Contributions would be accumulated in individual employee accounts until retirement and invested in funds chosen by the individual. At retirement an annuity would be purchased with an insurance company.

- iii)** Outline the advantages and disadvantages of the actuary's suggested proposal. (11)
- [20]**

- Q. 3)** A long established defined benefit pension scheme was closed to new entrants after the last funding valuation. An actuary has been asked to carry out an up-to-date funding valuation and to advise the trustees on their review of the scheme's investment strategy.
- i)** Set out the advantages and disadvantages of direct property investment for the scheme. (5)
 - ii)** Outline the characteristics of the following funding methods:
 - Projected Unit; and
 - Attained Age. (5)

iii) Set out formulae that could be used to calculate the Standard Contribution Rates for the:

- Projected Unit; and
- Attained Age

Funding methods, explaining any symbols you use. You should ignore any pre-retirement decrements. (4)

iv) Explain how you could estimate the Standard Contribution Rate for the Attained Age funding method from a Standard Contribution Rate calculated using the Projected Unit funding method. (3)

[17]

Q. 4) A large manufacturing company in India operates a large defined benefit pension scheme for its manual factory workers, administration and management staff.

The trustees of the scheme want to undertake a formal actuarial funding valuation for the scheme.

i) List the information that the trustees should consider in setting the valuation assumptions. (5)

ii) Outline how each of the key financial and demographic valuation assumptions may be derived. (8)

Investment markets were particularly volatile at the valuation date.

iii) Discuss the implications of this on the valuation process. (4)

As part of the valuation, the trustees are also reviewing the scheme's investment strategy.

iv) Explain why the scheme's investment policy should be reviewed as part of the valuation. (3)

v) Outline the general issues that should be considered as part of the investment strategy review. (3)

The trustees' actuary has recommended that an asset liability modelling (ALM) exercise is carried out. The trustees have asked their actuary to give a presentation to explain ALM to them.

vi) State the objective of an ALM exercise. (1)

vii) List four distinct measures of risk that could be used when setting the objectives of the ALM exercise. (2)

viii) Set out the information the actuary would need to perform the ALM exercise. (3)

ix) Describe the outputs from an ALM exercise, how these can be used and any limitations. (5)

[34]

- Q. 5)** Company X and Company Y both sponsor mature defined benefit pension schemes. Negotiations are currently underway for Company Y to acquire Company X.
- i)** Outline how the companies' existing pension schemes may affect the negotiations. (5)
 - ii)** Discuss the key issues that Company Y should consider regarding Company X's pension scheme. (6)
 - iii)** Set out the key principles that the trustees of the pension schemes should consider in relation to this possible transaction. (6)
- [17]**
