INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

26th October 2009

Subject ST4 — Pension and Other Employee Benefits

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

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 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.*

AT THE END OF THE EXAMINATION

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

Q1) In the context of defined benefit pension plans describe the following type of plans:

a) Revalued Average earnings plan
b) Cash balance plan
c) Final earnings plan
d) Hybrid plan
e) Flexible benefit plan **[5]**

Q2) Your employer has asked you to draft a training session for new trainees on valuation data checks.
Describe the points you would include in your presentation. **[7]**

Q3) Describe how you would analyse the salary increase experience of a pension scheme. **[7]**

Q4) You are the pensions regulator in a country where many employers provide defined contribution pension schemes. It has been decided that all such employers must provide scheme members with an annual statement prepared by an actuary showing each member's projected pension benefits from the scheme.

(i) Outline the information that the regulator might require to be included by employers in such a statement. (4)

(ii) Outline the issues that you would need to consider in providing guidance to actuaries on the preparation of the figures to be shown in the statements. (6)

[10]

Q5) You are the actuary to an under-funded final salary defined benefit pension plan. A deferred member has written to a Trustee of that plan regarding transfer values.

The Trustee has asked you the following questions for him to gain greater understanding on this topic.

(i) Please describe what is meant by a transfer value in the context of a defined benefit pension plan? (1)

(ii) What are the principal considerations in setting the terms of any transfer value? (5)

(iii) The member had 5 years' pensionable service in the original scheme and has had a quotation from his current scheme for a service credit of 3 years only. What are the possible reasons for this? (4)

[10]

Q6) An employer is setting up a group defined benefit pension scheme for its 1000 employees. The benefits on death in service will be a spouse's pension of 50% of the member's prospective pension and a lump sum of 4 times salary.

(i) Outline the features of contracts available for insuring death in service benefits. (6)

(ii) Discuss the advantages and disadvantages of insuring the benefits payable on death in service. (6)

[12]

Q7) A human resource manager has asked you about the methods by which he could incorporate the level of State provided pension benefits when designing a new defined benefit scheme. The aim is to provide a total income from scheme and state of 2/3rds of final salary after 40 years' service.

(i) List the methods available. (3)

(ii) Discuss the advantages and disadvantages of the methods you have stated in i) above for someone who has completed 40 years' service, for various levels of salary. (10)

[13]

Q8) You are a benefits consultant to a large final salary pension scheme that has just received its latest triennial valuation results. The scheme has a Normal Retirement Age of 60; the accrual rate is 1% of pensionable salary; members contribute at the rate of 3% of pensionable salary; pension increases in payment are fixed at 3% per annum. An extract of the results on an ongoing basis are below (INR million):

Market Value of assets:	5,000
Value of past service liability - actives:	1,250
Value of past service liability - pensioners:	1,500
Value of past service liability - deferreds:	750
Present value of 1% of future pensionable salary:	500
Standard contribution rate (Projected Unit method):	12%

(i) Set out suggestions of how the actuarial surplus may be used and where possible indicate how much of the surplus would be utilised. (7)

(ii) Discuss the considerations the company and trustees should bear in mind before making a final decision on using the surplus. (8)

[15]

Q9) A company in a developing country is considering establishing a defined contribution scheme for its employees. The company's contributions in respect of each member will be set at a level which aims to provide a target level of benefits. The level of contributions will be reviewed periodically in order to keep on target but the company does not guarantee any particular level of benefit.

The trustees of the scheme will invest in the following asset classes :

- ? Domestic equities
- ? Domestic fixed interest stock
- ? Index-linked government stock
- ? Property

Each of the asset classes will be divided into a number of units which will be valued periodically. Contributions in respect of each member will be invested in units chosen by the trustees. The trustees will also decide whether and when to switch units in respect of any member from one class to another.

At retirement the value of units in respect of a member will be used to secure an annuity from an insurance company. Alternatively, the member may elect to take a proportion of the value of the units as a cash sum.

(i) List the main features of each asset class. (9)

(ii) Discuss the difficulties, stemming from the nature of the investments, which the trustees might experience in the practical operation of the scheme and suggest how these might be overcome. (12)

[21]

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