INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

12th November 2010

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 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.

Q. 1) You are an actuarial analyst for a pension consulting firm conducting a valuation of a defined benefit pension scheme. You have been asked to apply some broad checks on the valuation data using the Scheme's financial statements.

Describe the checks you would complete.

[5]

Q. 2) The government of a developing country wants to encourage private sector participation within a new regulated pension system. Currently a number of tax incentives are available on pension provision to individuals and their employers. You have been appointed to advise the government on how it may achieve it's aims, which include:

i) encouraging infrastructure investment within the country, and also in government bonds;

ii) minimizing the loss of tax revenue under the new pension system by avoiding tax incentives to the higher paid;

iii) ensuring that pension money is focused on providing benefits into the old age and

iv) giving incentives to people who have physically and/or mentally disabled dependants

Set out the points that you would include in your advice to the government.

[8]

Q. 3) An employer provides an unfunded defined benefit pension plan which pays pensions through the company's payroll at the time of retirement. The CFO has asked what options he has to mitigating his risk for meeting pensioner payments. Pensions are paid to the retiree, receive annual increases in line with inflation and on the death of the member a 50% spouse's pension is paid for the life of the spouse.

Set out the points you would mention in a letter to the CFO covering;

a) The risks he faces with regard to the pensioner liabilities. (3)

b) The options available to him to mitigate the risk and the advantages and disadvantages of these options. (5)

[8]

Q. 4) The Chief Financial Officer (CFO) of a large company has stated that he would like the company to spend a total of 30% of payroll on the retirement benefits for all new employees. No changes are to be made to the current defined benefit gratuity lump sum payable on exiting the scheme or the post retirement medical plan. The gratuity scheme has a maximum benefit of INR1 million. The company also pays 12% contribution to the existing government provident fund. The CFO has asked that a defined contribution (DC) pension scheme is set up to deal with the balance room available up to 30% of payroll.

a) List the initial issues that need to be considered. (3)

b) Explain how you would determine the contribution rate to be paid to the DC pension scheme. (5)

c) State the other implementation issues the company will need to address before rolling out the new scheme. (2)

[10]

Q. 5) An emerging country is considering developing a financial reporting accounting standard covering employee benefits.

a) Discuss the key areas and concepts the standard should address. (8)

b) List the actuarial methods which could be used as the standard approach for actuarial valuations of post retirement benefits under the standard and explain whether each method would be suitable or not for this purpose. (4)

[12]

Q. 6) A medium size final salary scheme of a company provides a pension at the rate of 2% of pensionable salary at normal retirement for each year of pensionable service. Pensionable salary is defined as average basic salary in the two years prior to exit.

a) Describe the method to be followed to analyse the salary experience of the scheme over the 3 years since the pervious valuation. (8)

b) State the areas to be considered before using the results of the above analysis in setting the salary increase assumptions for a funding valuation. (4)

[12]

Q. 7) A medium sized company is considering a remuneration package for its management staff, which constitutes 20 individuals with an average age of 50. The company has not set up any pension scheme and wishes to explore the possibility of providing a pension of 50% of final salary upon retirement. The normal retirement age of the company’s management staff is 60 years. You have been asked to advise the company on how it might finance this new pension benefit.

a) List four approaches to the timing of the company’s funding payments to meet this benefit. (2)

b) Outline how any surpluses or deficits could be removed under each approach in (a). (3)

The company decides to provide the benefit without contributing to a specific fund in advance.

c) Discuss the effect of this on the amount of capital that the company requires in order to operate its business (7)

[12]

Q. 8) You are the adviser to the Trustee Board of a defined benefit pension plan. The plan is closed to new entrants but accrual continues for existing employees who were members of the plan at the date of closure. You have just completed the latest triennial actuarial valuation which has highlighted a significant increase in the required contribution rate. The Trustee Board has asked for your advice related to negotiating the future contributions from the Sponsoring employer.

a) Define the Sponsor covenant. (1)

b) Outline the factors the Trustee should consider in assessing the covenant. (10)

c) Set out the actions the Trustee should take if the company is found to be in distress. (4)

[15]

Q. 9) a) Describe four methods of financing social security schemes and outline their advantages and disadvantages. (8)

b) List the key assumptions used to project social security income and expenditure (4)

The government of a country runs a social security scheme for the whole population. The retirement age for males and females are set at 60 and 58 respectively. Recently the Census department, which runs a country-wide survey once every 10 years, has produced its latest report. The report points out that the average expected future lifetime of 60 year olds has increased by 5 years since the previous survey.

Based on the Census report the government is planning to increase the retirement age for both males and females to 65.

You are an actuary working for the Government Actuarial Department and have been asked to produce a report to address all the issues that the Government needs to consider before implementing this proposal.

c) Discuss the issues to be included in your report. (6)

[18]

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