INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

15th November, 2010

Subject SA4 – Pensions and Other Employee Benefits

Time allowed: Three hours (9.45* - 13.00 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 expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which are meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However if application specific to any other country is quoted in the answer the same should answer the question with reference to Indian environment.*

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) The government of a country introduced a Defined Contribution (DC) scheme for its employees recruited on or after 1 January 2004 (new employees). The earlier employees are covered under a Defined Benefit Final Salary (DB) pension (average of last 12 months) which accrues at 1/66 of final salary (FS) for each year of pensionable service (PS) and is linked to Retail Price Index (RPI) with 50% dependants' pension. The DB scheme is unfunded and pension is paid on pay-as you-go (PAYG) basis.

At the time of introduction of DC scheme Workers' Trade Union (WTU) had opposed it. They were of the view that the DC scheme would provide inferior benefits compared to the existing DB scheme. The government at the time of introduction of DC scheme had taken actuarial advice and provided benefit illustration to WTU prepared by an actuary. The illustration confirmed that the benefits under new scheme will be comparatively better than the existing DB scheme.

The WTU had also taken independent actuarial advice from you (you are an actuary) which confirmed that the benefits available under DC scheme would be comparable to the existing DB scheme.

Now after six years the benefit statements of employees as at 1 January 2010 show their projected pension much higher than the illustration they had got in 2004. The workers approached their trade union which in turn has contacted you to clarify it.

Following information has been collected by you:

Information	**Used in 2004 illustration**	**Used in 2010 statement**
Nodal Age for illustration (years)	25	31
Completed service	0	6
Salary per month (pm) (₹)	25,000	40,000
DC fund value (₹)	0	450,000
Contribution by employee (% of Salary)	10	10
Contribution by Government (% of Salary)	10	10
Frequency of Contributions	Monthly	Monthly
Normal Retirement age (NRA) (years)	60	60
Key assumptions:		
Investment return (% pa)		
- Pre-retirement	4.0	8.0
- Post-retirement	3.5	6.5
Salary increases (% pa)	3.0	6.5
Price inflation (% pa)	2.0	3.5
Pension increases (% pa)	2.0	3.5
Annuity Value at 60 years allowing Pension increases in line with price inflation and 50% dependants' pension	14.5	14.0

i) Estimate the DC pension (monetary amount as well as % of projected FS) at retirement that would have been illustrated in 2004 and 2010. Mention any further assumptions or approximations you would make. (6)

ii) Outline the factors that might have caused enhancement in projected DC pension at retirement calculated in 2010 when compared to 2004. Estimate the impact of each such cause and summarise your results in a tabular form. (17)

iii) Presently the new employees are not covered under Employees' Provident Fund (EPF). Encouraged by the Statements of 2010, the WTU has approached the government with the following proposal:

- Let new employees be covered under the existing DB scheme in place of DC scheme
- 75% of existing DC fund value of each such employee be transferred to DB scheme
- An EPF scheme be introduced for these employees transferring the balance 25% of DC fund value of each employee as their initial contribution
- In future 5% of salary be contributed towards EPF scheme and 15% of salary towards DB scheme (taking contribution of both the government and the employees) and DC scheme be closed.

a) Suggest the points you would make for the WTU to put forward their case to the government. (4)

b) What objections the government is expected to make on this proposal on the advice of their actuary? (4)

iv) The DC fund, at present, is invested by the government in fixed interest securities out of which substantial proportion is in government bonds. Individual employees do not have any investment choice.

The government has recently appointed a Pension Regulator (PR) to develop and regulate a DC private pension scheme. They will also regulate government employees' DC scheme. The PR has registered a few Pension Fund Managers (PFMs) who are going to launch a number of funds/ schemes. The government employees will be allowed option to transfer their DC fund value to the funds of PFMs.

Discuss the issues to be considered by PR before PFMs are permitted to launch their funds/ schemes. (15)

v) What problems the government is likely to face in funding pension benefits for its new employees while contributing to pay pension to its old employees still on PAYG basis. (4)

[50]

Q. 2) A Multinational large organisation having number of companies across many countries including India, is proposing to acquire one more company in India. The company in India under purchase is listed on BSE as well as in the UK and the Multinational at the group level reports under IAS 19.

The Multinational understands that India does not yet have Regulatory regime regulating all aspects of employee benefits including pensions and reportedly is proposing an umbrella regulatory legislation for the same. You are an actuary and are in the business of Benefits Consulting and have been engaged by the Multinational to advise on the proposed purchase besides many other aspects of the transaction having potential impact on the final decision. You, in respect of your conduct and deliverables, are regulated by the Institute of Actuaries of India. You have been requested by your client to draft response to the following questions which are expected to be presented to its Board.

Draft your responses.

a) A note on the issues relating to "Age Discrimination" if that gets embedded in the umbrella regulatory legislation relating to employer sponsored Employee Benefit Schemes (5)

b) A brief on the actuarial practice standards in respect of Actuarial Investigation of retirement benefit schemes and Actuarial Reports for the same that are in place in India and in particular about the choice of actuarial assumptions. (10)

c) Define "best estimate" assumption and discuss desirability or otherwise of using "best estimate" assumption under acquisition environment. (7)

d)

i) The Employee Benefit Scheme of the Indian entity under purchase is partly insured with substantial part of assets being self-managed by Trustees. Describe the method of valuation of such insured assets

- Immediate annuities (2)
- Paid up non-profit and with profit deferred annuities (4)
- Deposit administration (2)
- Unit-linked policies (2)

ii) If the Scheme were totally insured, state the approach that Trustees may take for valuation of such assets. (1)

e) List differentiating aspects between AS 15 (rev.2005) and IAS 19 (revised, 2004) and mention the impact on integration of the accounts and purchase price. (17)

[50]

****