Actuarial Society of India

June 2005 Examination

Subject SA 4 - Indicative Solution

Question

Q.1 The Scenario for pension benefits is changing fast in India. The interest rates have reduced substantially during last 5 – 6 years. The cost of annuitisation has gone up. The employers with defined benefit pension schemes are finding difficulty as cost of pension purchases has increased. On the other hand, in case of defined contribution schemes, employees are dissatisfied due to the pension purchased for them from the accumulated fund is too low. The government is introducing tax reforms. Though it wants to continue to encourage tax benefit on savings, it seems to use regressive approach in it. The government is also in the process of setting up a Pension Regulator in the country.

The insurance industry has become competitive for last 5 years. Earlier only Deferred annuities and Deposit Administration Plans were available for funding of pension benefits. After entry of new life insurers, unit-linked (UL) plans have become popular:

i) You are a consulting actuary in employee benefit area. One of your clients has invested in the deposit administration plan (DAP) of a life insurer. An agent of another life insurer has approached your client with a proposal to switch over from DAP to UL plan of his insurer. Your client has, in turn, approached you to analyse the proposal of the agent and suggest whether or not they should switch over to the new plan.
Summarize the points you would make in your reply to the client.
(10)

ii) In the process of setting up a Pension Fund Regulatory system in India, the government has formed a committee to suggest the legal framework for such a system. You are a member of the committee. You have received a letter from the chairperson of the committee setting the agenda of its first meeting which includes following items :

a) What are the main considerations for setting up an effective legal framework for a pension provision in a country?

(15)

b) How far does the present system address these considerations in India ?

Discuss the points you would make in respect of the above.

(15)

iii) Presently in India, it is mandatory (unless specific exemption granted by Government of India) for an approved superannuation fund to purchase annuities from a life insurer for a member when the pension comes for payment. A number of companies have approached the Government to allow exemption from this Rule. The government has, in turn, approached your firm to suggest what considerations they should take into account whether or not to allow exemption from this Rule.

Summarize the issues you would make in your report to the Government

(10)

[Total 50]

Indicative Solution

Note: It should be kept in mind that there could be valid points other than the ones mentioned as indicative answer.

Q.1 (i) Following are some of the features of DAP

i. Operates like a savings bank account except you can't get your money back so easily.
ii. Normally provides guarantee of capital.
iii. The insurer pools the funds of all schemes for investment.
iv. The assets in which funds are to be invested is decided by the insurer.
v. May provide guarantee of return which is generally low and over and above a bonus return based on experience is declared by insurer.

vi. Charges for risk cover are normally explicit. Other charges may be explicit or implicit and are deducted from the interest earned from investments in which case the interest declared on the fund is net of charges.

(1/2 mark for each pint = 3)

Following are the features of UL products offered by insurance companies:

i. Contributions paid into unitized fund.
ii. The insurer offers a number of funds with different mix of assets with varying proportion of government securities, other corporate bonds, equity and cash.
iii. Prices of units directly linked to the value of the underlying assets.
iv. The member/policyholder may choose one of the funds offered by insurer.
v. No guarantee of capital or return.
vi. Investment risk borne by pension scheme.
vii. Charges are explicit.
viii. Surrender terms clear and guaranteed

(1/2 mark for each point with maximum of 3)

Choice between DAP and UL would depend on a number of factors such as:

i) DAP would offer normally smooth return whereas UL products would normally offer uneven returns.
ii) Due to guarantees available under DAP, the insurer would like to follow a relatively conservative investment policy. This may provide relatively less return in the long run.
iii) The explicit charges under UL products - whether they are reasonable as compared to, for example Mutual Fund Products.
iv) Whether the interest rates are rising or falling. When interest rates are falling, DAP may offer higher return due old higher coupon investments of existing schemes than that available on new similar investments. The opposite may be the case when interest rates are rising (1 mark for each point = 4)

[10]

Q.1(ii) a) Main aspects of a legal framework:

Pension funds need regulation to ensure that;

i) the goals of equity, adequacy and security of pension benefits are achieved,

ii) the tax benefits to the provider and/or the member/beneficiary, if any, are not misused, and

iii) the individuals are provided with atleast a certain level of information relating to their benefits.

(3)

The pension schemes aim to accumulate fund over a period to meet the liabilities in respect of promised pension benefits. There are, therefore, regulatory aspects in respect of assets as well as liabilities, for example:

A) In respect of Assets:

Regulation of portfolio distribution;

i. Quantitative regulation of portfolio distribution is generally imposed with the aim of protecting asset values and safety of a certain level of investment returns.
ii. Limits are often imposed on holding of assets with relatively volatile returns such as equity, property, foreign investments and alike.
iii. The limits are also imposed on concentration of scheme funds in a particular asset type and/or in a particular sector and/or in a particular company.
iv. The limits are also imposed on investment in assets of the scheme sponsor to protect from the insolvency of the sponsor.

(1/2 mark for each point = 2)

Regulation of funding:

i. In case of defined contribution schemes, the question of regulation of funding does not arise as the value of liability of the sponsor is always equal to the contribution required to be made. It is, therefore, the key aspect of the regulatory framework for defined benefit pension funds. Calculation of appropriate fund levels require a number of actuarial assumptions such as return on assets (i.e. rate of interest), escalation in wages (particularly for final salary schemes), future inflation in case of indexing of pensions after vesting, mortality and withdrawal rates.
ii. The set of assumptions is important as different assumptions would lead to over or under funding. The tax authorities on the one hand try to avoid over-funding to prevent the abuse of tax privileges whereas, on the other hand, regulatory authority is concerned to avoid under-funding. A balance between the two is therefore desired.

(1 mark for each point = 2)

Ownership of surpluses

i. In some jurisdictions withdrawal from the fund is allowed subject to tax penalties while in some other it is not allowed.
ii. However, in such jurisdictions where withdrawal is not allowed at all an employer may absorb surpluses by taking contribution holidays.

(1 mark for each point = 2)

B) In respect of liabilities:

Insurance of benefits:

Sometimes the employer may not be in a position to make contribution as per the funding requirements. The insurance of certain minimum level of pension benefits may, therefore, be necessary preferably through public insurer so that the pension benefit, at least, to that extent can be ensured. The premiums payable to the insurer, in such cases, are mandatory and depend upon the level of funding of benefits, i.e. higher the level of funding, lower the premiums. In case of failure of the pension scheme, the insurer pays the whole or certain percentage of the guaranteed pension to members of the fund.

(2)

Annuities Vs lump sum

Lump sums may not be desirable as they may be dissipated or not prudently invested thus forfeiting the very object of a superannuation scheme.

(1)

Indexation of benefits

Indexation of pension benefits is not only costly but very risky for the employers though, so far as members are concerned, it acts as a hedge against inflation. Enforcement of it, therefore, by way of legal provisions is avoided or restricted.

(1)

Vesting and portability

The condition of some minimum service before an employee has a right to accrued pension acts as a deterrent in labour turnover and ensures some value for the initial expenses incurred on a new hirer. On the other hand, stable employment patterns may also not always be desirable. Vesting

standards have, therefore, to be fixed considering the impact of both the situations. (2)

[Maximum 15]

Q. 1(ii) b) Present system in India:

General

Under Part B of fourth schedule of Income Tax Act, 1961 and Part XIII of Income Tax Rules, 1962, there is no specific Regulatory Authority at present to supervise pension funds in India except the relevant Commissioner of Income Tax purely from tax angle.

(2)

Portfolio distribution:

i. Investment of fund monies is prescribed as per Rule 85 of Income Tax Rules
ii. Further as per Rule 89(ii) the trustees have to purchase annuities from a life insurer in India except for entities specifically exempted from this rule.

(1 mark for each point = 2)

Funding:

There is no regulation for funding of a pension scheme in India. However, there is a upper cap on the rate of employer's contribution to an approved pension fund. The present limit is 27% of employees' salary including contribution to Provident Fund.

(2)

Ownership of surpluses:

Approved pension schemes are set under Trust Act which are irrevocable in nature. The surpluses of asset therefore belong to the scheme and cannot be claimed (or even no charge or lien can be created by the employer as per Rule 91 of IT Rules) by the sponsor. However, contribution holidays are possible due to which employers may take indirect advantage of surpluses.

(2)

Insurance of benefits:

No insurance scheme of benefits exists in India except the purchase of annuities from life insurers which is mandatory (except exempted specifically by government of India) when the pensions come into payment. This ensures payment benefits of pensioners.

(1)

Annuities Vs lump sum:

The members/beneficiaries have to receive pensions as regular payment throughout their life time. A part of the benefits as per Rule 90 of IT Rules (1/2 when gratuity is not payable and 1/3rd if gratuity is payable) may be commuted by the member as a lump sum.

(1)

Indexation of benefits:

There is no such regulation in India which requires indexing of benefits of members as a hedge against inflation.

(1)

Vesting and portability:

There is no regulation in regard to vesting. However, there are CBDT guidelines as per which a member may defer vesting of benefits up to 5 years from the date on which they would normally vest as per scheme regulations.

Transfer of equitable interest from one scheme to another scheme is permitted. (2)

Misuse of tax benefits:

As stated in (II) above in funding there is a restriction on rate of employer's contribution to an approved pension scheme. The main purpose of this restriction is to put an overall limit on tax-free creation of pension assets.

(1)

Disclosure regulations:

There is no regulation, in India, in respect of disclosure norms for the individual members. (1)

[Maximum 15]

Q. 1(iii) The purchase of annuities may be advantageous for the schemes in view of the following:

- The price at which they are offered is competitive
- The mortality and interest risks may be too high for the scheme

- The scheme is small or medium sized
- The benefits offered by the scheme and whether matching annuities to purchase those benefits available.
- Scheme may offer index linked pension and the annuities linked to the index to which pension are linked may not be available.
- The ease of administration provided by the insurer in disbursement of pensions

(1/2 mark for each point with maximum of 2)

In view of the above purchase of annuities may be beneficial for schemes if;

- they are small or medium sized,
- offer simple benefits, and
- the price at which offered is reasonable and competitive

Thus the purchase of annuities may not be beneficial if a scheme offers complex benefits and/or the price is not competitive.

(1)

If the purchase of annuities is mandatory, it is difficult to say that the price may be competitive particularly if the annuities are offered by a limited number of insurers.

(1)

Further, following points should be noted by the Government before relaxing the criteria of exemption from Rule 89(ii) of IT Rules:

i) Presently there is no regulation in India to ensure adequate funding of benefits.

ii) An employer may promise higher pension benefits without adequate funding and hence may pay less salaries at present.

iii) Once retired, the employee may not get pension as the employer may not be in a position to pay.

iv) The mandatory provision of purchasing pension from a life insurer ensures security of pensioners' benefits.

v) In case of defined contribution schemes, the value of benefits is always equal to the value of assets during the accumulation period. Such schemes, when purchase annuity from a life insurer, there does not remain any liability for the employer even after the accumulation period. With the present system, therefore, there is no need for any regulation in respect of funding so far as defined contribution schemes are concerned. However, if such schemes are allowed to pay annuities

from their funds, they have to be brought within the purview of some regulator so that the security of benefits of the members is ensured.

(1 mark for each point =5)

In view of the above, till a proper Regulatory system is established for supervising pension schemes in India, the government may continue with the present mandatory provision of purchase of annuities.

(1)

[Maximum 10]

Question 2

A multinational having number of business divisions has operated in India and has one Defined Benefit Pension scheme organized under one Approved Suerannuation Fund. The Company has decided to sell one of its divisions to another multinational operating in India and having its own Defined Benefit Approved Superannuation Fund. You as a consulting actuary have been asked to respond on number of aspects of this sale/purchase transaction. Some of these are listed below. With reference to the approved superannuation scheme/fund, articulate your response as required;

a. list the stages in the sale/purchase transaction.

(5)

b. List the issues which the Seller has to consider.

(5)

c. List the aspects including key definitions that the Sale/Purchase agreement needs to contain.

(10)

d. Describe various methods which could be adopted to quantify the amount of fund to be transferred from the Sellers Fund to the Buyer's Fund.

(10)

e. Discuss the relevance of the immediately preceding actuarial valuation carried out under AS 15 of the Sellers approved Superannuation Scheme.

(5)

f. List the applicable GNs of the Actuarial Society of India which you need to consider while preparing your actuarial report.

(5)

g. Assuming that you have been engaged as an Actuary by the Seller, prepare a report keeping in view the requirements of the GN 11 and GN 18 of the

Actuarial Society of India.

(10)

Total [50]

Indicative Solution

Note: It should be kept in mind that there could be valid points other than the ones mentioned as indicative answer.

Q 2 (a):

Stages in a typical Sale/Purchase Transaction;

i. Initial discussion at high level between the two parties.
ii. Both the parties to discuss with their respective actuaries about the issues involved and possibly facilitate discussion amongst the actuaries so as to understand each other's point of view.
iii. Sale/Purchase Agreement is drawn and the business is sold.
iv. Invitation to employees of the Seller to join the Purchaser employer – the invitation letter/communication to contain details as affecting their service condition/pension rights including details as to how the transfer value of pension rights are calculated. .
v. Deed of Variation including change in rules of both the schemes reflecting changes needed and subsequent approval from the Income Tax Authorities.
vi. Calculation of transfer amount by the actuary agreed to by both the parities – Purchaser's Actuary or Seller's Actuary or an independent actuary.
vii. Actual transfer of Assets equal to the transfer value and necessary legal formalities.
viii. Settlement of interest amount pertaining to the period interim to actual transfer date and the date of transfer of business.

(1 mark for each point with a maximum of 5 marks)

Q 2 (b):

Issues which the Seller needs to consider;

i. Overall financial status of the Seller entity and the proportion of pension liability in relation to other financials. This will include the value of pension rights of existing employees and the existing beneficiaries.

ii. Other elements of the deal on which to put a money value could be more subjective and this may be used by the Seller to his advantage.
iii. The seller may want to ensure that no more money is paid across than is required to secure the transferring employees' entitlements and that after the transaction it is in no worse a position as an employer than it was before.
iv. The Seller may wish to ensure that the transferred employees' are treated fairly and that the remaining employees' are not disadvantaged as a result.
v. Fair treatment of the remaining employees may mean that the ongoing funding position (or discontinuance funding position) of the seller's scheme is unaffected by the transfer payment.
vi. Fair treatment of transferring employees may mean that the transfer covers the value of past service benefits and that these continue to be linked to earnings. It may also mean that the Seller places some restrictions on the benefits that the Buyer must provide if these employees are severed immediately after the transfer date.

(1 mark for each point with a maximum of 5 marks)

Q 2 (c):

Main aspects of the Sale/Purchase agreement;

i. Definition of the Terms used.
ii. Obligations of the Seller, such as:
   a. To supply all relevant information
   b. Ensuring that the Trustees pay up the agreed transfer amount
   c. To make good any shortfall in the Trust Fund
   d. To allow the transferred employees to remain the schemed during the transition period.
   e. To seek and assist he Purchaser to seek approval from the Income Tax Authorities
iii. Obligations of the Purchaser, such as:
   a. To provide adequate past service benefits to the transfree employees.
   b. To participate in and contribute to the Selle's Scheme for an agreed period.

c. To make necessary announcements to members and application for approval to the Income Tax Authorities.

iv. Calculation of the Transfer amount and the timing of Payment, the valuation Actuary.

v. Cash or asset transfer and

vi. Dispute redressal mechanism.

vii. Manner in which shortfall if any to be make good.

(1 mark for each point with maximum of 5 marks)

Definitions to be included in the Sale/Purchase Agreement;

i. Transaction Date/Completion Date – the date at which Sale/Purchase is completed

ii. Transfer Date – the date at which the transferring members leave the Seller's Scheme and join the Buyer's Scheme

iii. Participation/Transition Period/Interim - between completion and transfer dates

iv. Payment Date – date at which the transfer value is paid

v. In-service employees – employees in the Seller's scheme at completion date who are employed by the business being sold

vi. Transferring members – members transferring on transfer date

(1 mark for each point with maximum of 5 marks)

(Total 10 mrks)

Q 2 (d):

There are no set rules about methods to be adopted or assumptions to be made for calculations which would apply to all cease and under all circumstances. Typically the method and corresponding assumptions for calculation will be subject of negotiation between the two parties and the Trustees of the Seller. **(1 mark)**

Some of the methods and issues relating thereto are as;

i. **Value of accrued Benefits:** Normally this is past-service reserve and is consistent with the calculation method adopted for ongoing valuation of the scheme. This would mean Actuarial Liability under attained Age and Projected Unit Funding Methods. A commonly held view is that future escalation in salaries should be allowed, however, much will depend upon the rules of both the schemes, terms of Sale/Purchase Agreement and the funding position of the Seller's Scheme. **(3 marks)**

ii. **Value of leaving service benefits:** A bulk transfer value is calculated as the value of benefits assuming all the members leave service on the transfer date. In this case assumptions appropriate to deferred pensioners would be used with allowance for revaluation of deferred pensions rather than future salary increases. **(3 marks)**

iii. **Cash equivalents:** As members involved in a bulk transfer have a legal right to individual transfers of the cash equivalent of their leaving service benefits, this could be taken as the appropriate way to determine the value of leaving service benefits. **(3 marks)**

(Total 10 marks)

Q 2 (e):

AS 15 provides for actuarial valuation with a view to quantifying the amount of liability as at the Accounting date and the cost of accruing liability corresponding to the service of the employee during the accounting period. This valuation is carried out on on-going basis and the actuarial assumptions are subject to provisions of the GN 12 of ASI **(1 mark)**. Such assumptions relate to mortality and withdrawal rates amongst other items. Normally in case of Sale/Purchase, the withdrawal rates are set at zero and from Sellers point of view this will enhance the value of the liability consequently reducing the price of the transaction **(2 marks)**. Similarly under AS 15 the assumptions regarding discount rate and future salary escalation are set on medium to long-term basis whereas for Purchase/Sale transaction, this will be subject of negotiation between the two parties and will be on more realistic basis **(1 mark)**. The value of the liability thus arrived at will be different than the amount disclosed in the Balance Sheet with consequential effect on finance **(1 mark). (Total 5 marks)**

Q 2 (f):

The applicable GNs are;

i. GN11: Actuarial Investigation of Retirement Benefit Schemes – This GN deals with Retirement Benefit terminology, Standard Funding Methods, issues relating to assumptions band essential components of a retirement benefit actuarial report. Since the actuarial report in the question deals with valuation of Retirement Benefit liability in the context of Purchase/Sales, some of the provisions of this GN will be applicable.

ii. GN 12: Investigation of Retirement Benefit Schemes – Choice of Actuarial assumptions for the actuarial Valuation required under Accounting Standard 15 – one part of the question related to the

considerations of results of valuation under AS 15 and in case this needs to be embedded in the Actuarial Report, which will depend on ultimate objectives of the report, then provisions of this GN may have to be kept in mind.

iii. GN 15: Pension Fund Terminology – The terminology to be used in the Actuarial Report needs to conform to the glossary as given in this GN.

iv. GN 18: Retirement Benefit Schemes – Actuarial reports – This GN is required to be complied with in consonance with GN 11 and provisions of this GN override that of GN 11, if both GNs cover the same issues. Some provisions of this GN will therefore be applicable.

(1 mark for first three points and 2 marks for the last point = 5)

Q 2 (g):

The Actuarial report is for the Seller and needs to be prepared under provisions of GN 11 and GN 18.

Part IV of the GN 11as these relate to some basic structure of a report are relevant. However, Section 3 of GN 18 dealing with Introduction, Basic information, Valuation assumption and Methods is applicable.

The Actuarial Report will therefore be structured having contents as under;

i. **Name and address** of the official of the Seller entity on whose instructions and for whom the report is prepared. **(1/2 mark)**

ii. **The Objectives** of the report should quote exactly what is contained in the Engagement letter which will normally specify that the report is about quantifying the amount of the liability as at the transaction (Sale/Purchase) date, assets equal to the value of which will be transferred to the purchaser company' Trust. **(2 marks)**

iii. **Assumptions and Method of valuation** will be stated and these would have been obtained in writing from the Seller. The assumptions are settled with the Seller entity after discussion unless the sale/purchase agreement specifies the same. The method of valuation normally will be projected unit method, the same as for AS 15 valuation, however the entity needs to be clarified as to why the withdrawal rates are set at Nil. A copy7 of

Sale/Purchase Agreement should have been obtained and referred to in this section. **(3 marks)**

iv. **Information and data required for valuation** should be specified and summarized. The summary data should enable an audit check on accuracy/sufficiency to be made by the Auditor if needed. In case any previous actuarial report such as AS 15 valuation has been relied upon or perused the same should be mentioned. Summary of rules of the scheme should be annexed unless the same is in accordance with some standardised statutory provision e. g Gratuity in which case a reference to the statute should be sufficient. **(2 marks)**

v. **Valuation Results** should be clearly mentioned including split of the liability amount by class of employees if desired and in case of pension, the amount in respect of existing pensioners. **(1/2 Mark)**

vi. **Professional Compliance** should mention the GNs of ASI which have been complied with, in this case the relevant provisions of GN 11 and GN 18. It would be necessary to mention GN 12, if the instructions are to use the assumptions as for AS 15 valuation. In case some terminology used is specific to GN 15, then GN 15 needs to be referred to. **(2 mark)**

(Total 10 marks)