Institute of Actuaries of India

Subject SA4 – Pensions & Other Employee Benefits

October 2009 Examination

INDICATIVE SOLUTION

Q. 1)

1(a) **Basis on which scheme's deficit should be measured** :

- ? The scheme's deficit is equal to the amount by which the value of liabilities exceed the amount of assets. Both elements can be assessed in a number of ways.
- ? In India there is no statutory requirement about the basis on which assets and liabilities should be measured.
- ? The organization has not funded the liabilities and hence valuation might not have been made for funding purposes.
- ? The last valuation might have been made for the accounting purpose i.e. on the basis of AS 15 (revised 2005) which has probably disclosed large deficit in the scheme.
- ? Assets, if any may be valued on "fair value" basis ie consistent with AS 15 (rev. 2005) requirements. They may also be valued on book value basis or on discounted cash flow basis.
- ? The assets and liabilities need to be valued on a consistent basis.
- ? If valuation is to be made on wind up basis i.e. assuming that liabilities are secured by purchasing annuities from a life insurance company, then the assets are to be taken at market value.
- ? It is difficult to purchase annuities covering liabilities fully as in respect of active lives, the liabilities will depend on final pensionable salary which is not known at the time of valuation. Further, when pension comes for payment, it is linked to consumer price index. Inflation linked pensions are not normally sold by life companies.
- ? If the scheme is to be funded, then funding approach may be realistic, optimistic or cautious. A cautious approach may increase the deficit whereas optimistic approach may reduce it. The real cost of the scheme may, however, not be affected by funding basis.

1(b) **The advantages and disadvantages to the organization and employees in introducing first proposal** :

The Advantages and disadvantages to the organization:

- ? The main purpose behind the first proposal apparently is to reduce the cost of future accrual of the scheme by around 34% (=(1/66-1/100)/ 1/66)
- ? By offering non-pensionable salary rise, the cost of scheme will remain unaffected due to present pay hike.
- ? It will provide immediate cash in the hands of employees which will help them to maintain their present living standard. This is what they are demanding also.
- ? Attractive non-pensionable salary rise may encourage more and more employees to agree for the revised scheme.
- ? The non-pensionable salary rise together with reduction in scheme cost may be more economical ultimately for the organization.
- ? Offering revised scheme to non-members by offering higher salary rise may encourage them to become member of pension scheme.
- ? As most of such employees (left-over non-members) are young, it will help in reducing the average age of the scheme and hence the ultimate cost.
- ? It would also meet the objective of the organization to encourage membership.
- ? Higher pay hike will increase cash outflow due to which the organization may still find funding difficult.

- ? The cost of revised scheme may still be more than the employer's contribution to PF.
- ? It will make the scheme more complex due to which it will be difficult to administer and communicate and also higher cost of actuarial advice.
- ? Care needs to be taken in setting the level of non-pensionable salary hike so as to prevent inequality between two categories of employees and any consequent employee complaints.

Advantages and Disadvantages to the employees:

- ? Low earners may find proposal more attractive as their immediate take home salary will increase.
- ? It may also be attractive to them from taxation point of view who may be in nil or low tax bracket.
- ? But for those in higher tax bracket the proposal may not be attractive.
- ? Non-pensionable salary hike will be lacking link to the final pensionable salary.
- ? The proposal may result in an inadequate pension at retirement.
- ? An important disadvantage relates to any inequalities between the two categories of membership – members of unreduced pension scheme v/s members of reduced pension scheme. More will depend on how the non-pensionable salary rise is calculated.
- ? Some members may find the new arrangement and options difficult to understand.

1(c) **Factors to be considered in determining the non-pensionable salary rise**:

- ? Members opting in favour of the reduced benefit scheme are effectively giving up their right to some of the final pension entitlement in return for the immediate salary rise.
- ? From a purely theoretical perspective, we may calculate the value of the pension entitlement given up and the resultant reduction in contributions on realistic basis. This reduction may be awarded as the non-pensionable salary rise.
- ? Such reduction in contribution will need to be spread over future membership of the members.
- ? The non-pensionable salary hike may not be set to ensure equivalence in value of pension entitlement lost by each member due to several reasons, such as:
  - The company may desire to reduce ultimate cost by offering low salary hike by taking advantage of member's preference for cash.
  - Ensuring equivalence would require individual calculations for each member.
  - It is because value of pension given up would differ according to age of the member. It will also differ for early leavers, long stayers, high fliers etc.
  - As individual calculations may be complex, a simple scale may be used from practical viewpoint to ease administration, reduce expenses and help members understand the benefits.
  - However, this will mean that there will be winners and losers, with cross-subsidy between members. The more broad-brush the approach, the greater the degree of cross subsidy.

Comments on actuarial aspects in setting the basis:

- The basis may include investment return, salary rise, rate of inflation and withdrawal and mortality rates.
- Valuation of pension benefits given up will vary depending on the assumptions used.
- The assumptions used may include margins which may make value of given up pension benefit either less or more than appropriate.
- For practical view point the average profile of members opting in favour of reduced benefit scheme needs to be considered. For example, we may consider categories of employee, unisex rate, average age etc.
- The stability of assumptions will depend upon the approach taken. If a discounted cash flow approach is used, then the majority of assumptions would be relatively stable year after year.
- For AS 15(revised 2005) valuations the assumptions may not remain very stable.
- The non-pensionable salary hike needs to differ according to categories of employee (e.g. workers, employees, officers etc.)
- They may also differ according to age band of employees in each category.
- One rate for all ages may be possible taking an average age. But then it may be selected against the scheme by lower aged members.

1(d) **Factors in calculating transfer values to transfer benefits from DB to DC plan**:

- The key issue is that the members should receive a fair value reflecting the benefits they were entitled to from the DB plan. Active members were to continue to receive salary linkage in DB scheme until leaving or retirement. Further, the pension was linked to price inflation.
- The transfer value should ideally allow for the period the member is expected to continue as an active member of DB scheme and receive salary growth. It would be difficult to determine.
- However, if the member leaves the organization early, then benefit available to him will be linked to salary at the time of leaving.
- If salary growth is allowed till his normal retirement, then there will be a risk of selection. One may take transfer to DC scheme and then leave shortly thereafter.
- Selection risk is compounded by the fact that young members may be more likely to transfer – old members may tend to prefer to continue under the DB plan.
- To guard against the risk of selection, the organization could pay transfer value based on current salary and then grant additional DC benefit every year thereafter based on actual salary increases.
- If transfer value is less than the value of DB pension, the employer will be benefited.
- The employer may want to offer generous terms to encourage individuals to transfer their DB pension to DC scheme so as to reduce the open ended liability of the scheme.(However, risk of selection has to be kept in mind.)
- The basis used to work out transfer values is important.
- One option may be to calculate transfer values on commuted value factors basis. They, however, don't consider future salary growth and increase in pension in payment.
- Another option may be to use the basis from the latest AS 15 (revised 2005) valuation. It is expected to be realistic.
- It is not certain that transfer value will be able to provide the benefits foregone. Much will depend on individual's actual future experience in respect of investment return, salary rise

etc.

- As the scheme is not funded, the current funding level may not be considered.
- Also the share of fund approach may not be followed as the DB scheme is not funded.

1(e) **<u>Practical issues in implementation of first proposal</u>** :

- The additional benefit option (one original scheme and the other one with reduced accrual rate prospectively) will lead to more complex administration and hence higher associated costs.
- Care needs to be taken to explain fully the option of prospective reduced pension for an immediate higher pay rise and its implications on retirement benefits. The higher pay rise is non-pensionable salary component and the same needs to be made clear to members. They may also be advised to take an independent financial advice in case they wish so.
- A detailed illustrative example may be issued based on two or three scenarios. It may provide all types of benefits i.e. member's own pension, family pension etc. If possible member specific illustrations may be issued with the help of financial advisors.

1(f) **<u>Issues in operating the DB plan as a closed scheme</u>**:

- A lot will depend on the membership size of closed DB scheme.
- As the company has not fully funded till date, it will be more difficult now to fund the closed DB scheme as DC scheme contributions will have to be made compulsorily as and when due. The closed scheme is therefore likely to be run on 'Pay-as- you- go' basis.
- As and when a member will exit, his pension eligibility under the closed scheme may need to be worked out. This along with the accumulated fund may determine the ultimate benefit payable to the member and his family.
- The company may either purchase immediate annuities from an insurance company or may pay from its end if exempted by Central Government under Rule 89 (ii) of Income tax Rules, 1962.
- In purchasing benefits from an insurance company, there may be following advantages and disadvantages (+ for advantages & - for disadvantages):
  - \+ No investment and mortality risk for the organization
  - \+ Advantageous terms as the market is competitive
  - \+ Insurance company pays directly to the pensioner and hence no further administrative costs.

  - \- Insurance company may have margins for risks, profits and expenses. It may prove to be costly.
  - \- Complicated as the pension is inflation linked and hence subsequent purchases need to be made. No saving of administrative costs in that case.
  - \- Further complications if there is deflation at any time due to which pensions of members need to be reduced and insurer may or may not agree for surrender of part of the pension
- If the company pays pension from its end, then annuitisation rates need to be agreed which may change over time, mainly due to movement of interest rates and improvement in mortality.
- It is unlikely to offer inflation linked benefit out of DC fund. The member, therefore, has

to opt the type of annuity it would like to have (i.e. whether payable for life or 15 years certain and thereafter for life or payable for life with refund of purchase price on death etc) out of DC fund.

? The value of member's entitlement from DB scheme may be worked out based on certain factors. The amount together with DC fund may be used to purchase (or provide) ultimate pension to the member and / or his family.

? Alternatively the member may get two types of pensions –one which is inflation linked from DB scheme and the other out of the fund from Dc scheme.

? Up to 1/3rd commutation may be offered from both the schemes.

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Q2

2(a) **Differentiating aspects of AS 15 (rev.2005) with that of IAS 19 (as amended in December 2004)**

AS 15 (rev.2005) differs from IAS19 in the following major respects:

1. Recognition of Actuarial Gains and Losses

IAS 19 provides options to recognise actuarial gains and losses as follows:

(i) by following a 'Corridor Approach', which results in deferred recognition of the actuarial gains and losses, or

(ii) immediately in the statement of profit and loss, or

(iii) immediately outside the profit or loss in a statement of changes in equity titled 'statement of recognised income and expense'.

The AS 15 (rev.2005) does not admit options and requires that actuarial gains and losses should be recognised immediately in the statement of profit and loss. The following are the reasons of requiring immediate recognition in the statement of profit and loss:

(a) Deferred recognition and 'corridor' approaches are complex, artificial and difficult to understand. They add to cost by requiring enterprises to keep complex records. They also require complex provisions to deal with curtailments, settlements and transitional matters. Also, as such approaches are not used for other uncertain assets and liabilities, it is not appropriate to use the same for post-employment benefits.

(b) Immediate recognition of actuarial gains and losses represents faithfully the enterprise's financial position. An enterprise will report an asset only when a plan is in surplus and a liability only when a plan has a deficit. Paragraph 94 of the Framework for the Preparation and Presentation of Financial Statements, notes that the application of the matching concept does not allow the recognition of items in the balance sheet, which do not meet the definition of assets or liabilities. Deferred actuarial losses do not represent future benefits and hence do not meet the Framework's definition of an asset, even if offset against a related liability. Similarly, deferred actuarial gains do not meet the Framework's definition of a liability.

(c) Immediate recognition of actuarial gains and losses generates income and expense items that are not arbitrary and that have information content.

(d) The primary argument for the 'corridor approach' is that in the long term, actuarial gains

and losses may offset one another. However, it is not reasonable to assume that all actuarial gains or losses will be offset in future years; on the contrary, if the original actuarial assumptions are still valid, future fluctuations will, on average, offset each other and thus will not offset past fluctuations.

(e) Deferred recognition by using the 'corridor approach' attempts to avoid volatility. However, a financial measure should be volatile if it purports to represent faithfully transactions and other events that are themselves volatile.

(f) Immediate recognition is consistent with AS 5, *Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies*. Under AS 5, the effect of changes in accounting estimates should be included in net profit or loss for the period if the change affects the current period only but not future periods. Actuarial gains and losses are not an estimate of future events, but result from events before the balance sheet date that resolve a past estimate (experience adjustments) or from changes in the estimated cost of employee service before the balance sheet date (changes in actuarial assumptions).

(g) Any amortisation period (or the width of a 'corridor') is arbitrary.

(h) Actuarial gains and losses are items of income and expense. Recognition of such items outside the statement of profit and loss, as per the option (iii) above is not appropriate.

(i) Immediate recognition requires less disclosure because all actuarial gains and losses are recognised.

(j) Immediate recognition is also permitted under IAS 19. Providing only one treatment is in line with the ICAI's endeavour to eliminate alternatives, to the extent possible.

(k) The existing AS 15 (1995) also requires immediate recognition of actuarial gains and losses.

2. Recognition of Defined Benefit Asset

Both IAS 19 and AS 15 (rev. 2005) specify an 'asset ceiling' in case of a situation of defined benefit asset. AS 15 (rev.2005) provides that the asset should be recognised only to the extent of the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. IAS 19, on the other hand, provides that the asset should be recognised to the extent of the total of (i) any cumulative unrecognised net actuarial losses and past service cost; and (ii) the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. IAS 19, however, also provides that the application of this should not result in a gain being recognised solely as a result of an actuarial loss or past service cost in the current period or in a loss being recognised solely as a result of an actuarial gain in the current period.

The aspect with regard to unrecognised net actuarial losses is not relevant in the context of AS 15 (rev.2005) since it does not permit the adoption of 'corridor approach'. In respect of past service cost, it is felt that in a situation of defined benefit asset, the asset, to the extent of unrecognised past service cost, should not be required to be recognised in view of the prudence consideration for preparation of financial statements.

3. Termination Benefits – Recognition of Liability

IAS 19 provides that an enterprise should recognise termination benefits as a liability and an

expense when, and only when, the enterprise is demonstrably committed to either (a) terminate the employment of an employee or group of employees before the normal retirement date ; or (b) provide termination benefits as a result of an offer made in order to encourage voluntary redundancy. It further provides that an enterprise is demonstrably committed to a termination when, and only when, the enterprise has a detailed formal plan for the termination and is without realistic possibility of withdrawal. It is felt that merely on the basis of a detailed formal plan , it would not be appropriate to recognise a provision since a liability can not be considered to be crystalised at this stage. Accordingly, the AS 15 (rev. 2005) provides criteria for recognition of liability in respect of termination benefits on the lines of AS 29: Provisions, Contingent Liabilities and Contingent Assets.

4. Transitional Provisions

In respect of termination benefits, the AS 15 (rev. 2005), considering that the industry in India at present is passing through a restructuring phase, specifically contains a transitional provision providing that where an enterprise incurs expenditure on termination benefits on or before 31, March 2009, the enterprise may choose to follow the accounting policy of deferring such expenditure over its pay-back period. However, the expenditure so deferred can not be carried forward to accounting periods commencing on or after 1st April, 2010. Thus the expenditure so deferred should be written off over (a) the pay-back period or (b) the period from the date expenditure on termination benefits is incurred to 1st April, 2010, which ever is shorter. IAS 19 does not provide such a transitional provision.

2(b) In January 2007 the Accounting Standards Board (ASB) of the UK issued a Reporting Statement entitled “Retirement Benefits – Disclosures” which sets out notes on best practice when providing disclosures for pension schemes, intended mainly for sponsoring employers preparing their accounts. The intention is for the recommendations to be persuasive rather than mandatory. The Reporting Statement recommends that the extent of these additional disclosures should depend upon the financial significance and the risk of the pension scheme to the company.
The Reporting Statement sets out six principles to be considered when providing disclosures for defined benefits schemes as follows;

1) The relationship between the company and the trustees:
The above relationship is normally governed by the trust deed and rules and trustees may have additional powers granted by the legislation. This relationship will determine how the scheme is run, for example when setting the investment strategy.

2) The principal assumptions used to measure scheme liabilities:

FRS 17 and IAS 19 require the actuarial assumptions to be disclosed. The ASB amended the disclosure requirement in y 2007 of FRS 17 to bring them in to line with the disclosures required under IAS 19. Prior to this the companies reporting under FRS 17 were required to disclose only the principal financial assumptions. The new disclosure requirements require the principal actuarial assumptions to be disclosed ie financial and demographic. The Reporting Statement recommends that mortality rates (where otherwise not required) be included in the assumptions disclosed. Information should include the number of years post retirement it is anticipated pensions will be paid to scheme members and should provide further details if this will differ between members, for example due to geography. Further where changes in the mortality rates might have a material effect on the results, it is recommended that a sensitivity analysis is provided.

3) Sensitivity of principal assumptions used to measure the scheme liabilities:

In order to recognise the uncertainty surrounding the liabilities, the Reporting Statement recommends disclosures on how changes in the assumptions could affect the results, in particular where the changes in the assumptions were reasonably possible at the balance sheet date and where those changes would have materially affected the results. The Reporting Statement appears to be particularly concerned about the sensitivity of the scheme liabilities (rather than pension cost) to changes in assumptions.

4) How the liabilities arising from defined benefits schemes are measured:

FRS 17 requires defined benefits schemes to be measured using the projected unit method but there are alternative approaches to the measurement of liabilities that might be adopted for example on a buy-out basis. The Reporting Statement therefore recommends companies disclose enough information to enable users to understand the method of measurement.

5) The future funding obligations in relation to the defined benefits schemes:

FRS 17 and IAS 19 require the company to provide details of the best estimate of the contributions expected to be paid in to the scheme during the accounting period. However due to the long term nature of the pension schemes users may not be able to fully appreciate how the scheme liabilities affect the economic resources available to the company over the long term. In order to enable users to understand these effects, the following disclosures are recommended;

- The rates or amounts of contributions which have been agreed with the trustees and are payable to the scheme by or on behalf of the company.
- Details of any funding principles the company has agreed upon or operates with regard to the scheme which may or may not be required by legislation.
- Any additional contributions agreed upon in order to reduce or recover a deficit, along with the details of the period over which it is anticipated the deficit will be removed completely.
- A measure of the period of time over which the liabilities of the scheme mature, such as the duration of the scheme liabilities.
- Information allowing users to understand the projected cashflows of the scheme. The Reporting Statement suggests this might be prepared graphically.

6) The nature and extent of risks arising from financial assets held by the scheme:
FRS 17 and IAS 19 require the company to disclose the percentage or amount that each major asset category constitutes of the fair value of the total scheme assets. The Reporting Statement also recommends companies identify the different types of risks arising and, for each risk identified, disclose the following;

- The exposure to risk and how they arise.
- The objectives, policies and processes undertaken for managing the risk and the methods used to measure the risk.
- Any changes in the risk and/or methods used to manage them from previous accounting methods.

2(c) The issues which the Seller has to take in to account;

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

2) 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.

3) 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 no worse a position as an employer than it was before.

4) The Seller may wish to ensure that the transferred employees are treated fairly and that the remaining employees are not disadvantaged as a result.

5) Fair treatment of transferred 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 pre-conditions on the benefits that the buyer must provide if these employees are severed immediately after the transfer date.

6) Fair treatment of remaining employees may mean that the ongoing funding position (or discontinuance funding position) of the Seller's scheme is unaffected by the transfer payment.

2(d) The AS 15 (rev. 2005) provides for actuarial valuation with a view to quantifying the liability as at the balance sheet date and determination of the cost of accruing benefits corresponding to the service of the employee during the accounting period. This valuation is done on the assumption of "on-going entity" unless known otherwise. Such assumptions include mortality and withdrawal rates. 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. Similarly under AS 15 (rev. 2005) the assumptions regarding discount rate and salary increases are set as prescribed in the standard which means taking a view over expected future service of the existing employees, whereas in Sale/Purchase transaction this will be subject to negotiation between the two sides and will be closer to realistic basis. The amount of liability arrived at will be different than the amount disclosed in the balance sheet with consequent effect on finance.

2(e) There are no set rules for determining the funds that should be transferred . The two companies involved in the deal will negotiate the terms that are mutually satisfactory in the context of overall deal. Usually actuaries will be asked to negotiate these terms with the aim of achieving a transfer value that is fair, or beneficial to actuary's client. There is considerable scope for defining fair, or beneficial to a client, as opinion will differ on;

? the suitability of funding methods and assumptions
? the ownership of a scheme's surplus assets
? the responsibility for financing any asset shortfall
? the treatment of benefits accruing and those becoming payable during the participation period
? the interest to be added to allow for any timing differences between completion and payment.

The factors that need to be agreed by the two sides are;

? the calculation methods to be used to fix the transfer value
? the actuarial assumptions to be used for the method adopted.

However it has to be kept in mind that there is no correct method and no correct set of

assumptions. There are many approaches that may be suitable according to the circumstances of the schemes, the companies and the sale itself. There are some practical factors that need to be considered such as whether to calculate the amount at the beginning or end of the participation period and how to adjust for payment at a date later than the calculation date.

Some of the methods and issues relating there to are;

1. **Value of accrued Benefits:** The transfer payment often seeks to recognise the full value of the members' accrued entitlement to benefits in respect of completed service including allowance for projected future salary increases. This leads in many cases to the transfer of the accrued liability or past service reserve, ie the Actuarial Liability under the Attained Age and Projected Unit funding methods. It is widely agreed amongst actuaries that a method which fully allows for members' future pay escalation is the most realistic one to use. It is to be noted that "accrued benefits" refers to the benefits accrued up to the calculation date. However for "value of accrued benefits" it is important to specify how we are valuing these, ie whether allowing for projected future salary increases.
2. **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. This method typically produces lower values than the past service reserve and is unlikely to meet the objective of providing effective continuity of service on an identical benefit structure unless the buyer's scheme is prepared to enhance benefits to a higher level than that secured by the transfer value. This approach is essentially consistent with a re-valued current unit approach. Another feature of this approach is that the assumptions adopted may result in a value that is lower than the cash equivalent of the members' leaving service benefits.
3. **Cash equivalents:** As members involved in a bulk transfer have legal right to individual transfers of cash equivalent of their leaving service benefits, this could be taken as the appropriate way to determine the value of leaving service benefits. Unlike individual transfers there is no legal obligation for the sum of the cash equivalents to serve as a minimum bulk transfer amount. However, there may be such a minimum imposed by scheme rules of the Sellers' scheme.

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Total Marks [100]

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