Institute of Actuaries of India

Subject SA4 – Pension & Other Employee Benefits

May 2012 Examination

INDICATIVE SOLUTION

Introduction

The indicative solution has been written by the Examiners with the aim of helping candidates. The solutions given are only indicative. It is realized that there could be other points as valid answers and examiner have given credit for any alternative approach or interpretation which they consider to be reasonable

1. a) The advantages and disadvantages of State pension provision are as under:

Advantages:

- State may provide a basic provision ensuring a minimum standard of living in retirement for all
- People needing additional / higher benefits may make private provision by contributing for it
- Those who have very low income may contribute less or may not contribute at all. However they may still get the benefit. The system may thus help the State to divert country's resources to the needy people
- State basic pension may particularly help those who
  - May not make private provision at all- whether or not they have sufficient resources
  - The private provision made by them fails- say they overspend on children education/ marriages or medical treatment etc
- In future it may help the State in providing additional benefits, say State Health provision, Long Term Care etc
- It may help in creating awareness for retirement saving?
- Compulsory State pension may prove to be less expensive (if not misused)
  - as no effort and expense is needed to sell the product
  - no investment needs to be made
  - disbursement costs may also be low

Disadvantages:

- Compulsory State provision may not be liked by all- some individuals, particularly those having high income may wish to reserve their right to choose how to save for their retirement
- The State will need to raise additional resources either directly for pension or indirectly by enhancing tax. In both cases people may not like it
- The system may need to work on Pay-As-You-Go (PAYG) basis as it is difficult for the State to fund
- State pension may need sufficiently high proportion of contributors. In other words the system cannot work if sufficient proportion of workers with adequate income are not there
- State pensions are generally misused by people
- Additional regulation and monitoring will be needed
- The developed countries who have such a system are facing problem, then why introduce such a system
- Clear communication of a new system in general may be difficult
- State pension are generally misused by political parties in a democratic form of governance

- Moving from a funded (or partly funded as not all defined benefit retirement benefit schemes are funded fully) system to PAYG system may reduce saving levels and hence probably may decelerate economic growth
- Compulsory State pension may discourage those who might be saving for their retirement?
- Individuals may prefer the security of their own pot of money, particularly in view of the failing PAYG State pension systems in some of countries
- State pensions are generally more expensive

1 b) i) The retirement benefit schemes may be of two types- defined benefit (DB), say gratuity or DB pension and defined contribution (DC), say Provident Fund or DC pension etc.

A significant proportion of organized workforce is covered under EPFO which is managed by the government. It is not clear whether or not the government will charge tax on investment income of this fund. If tax is not charged, then the interest declared on EPF will be unaffected and it will create burden on employers of exempted provident fund schemes.

Defined Benefit (DB) schemes:

- In case of a DB scheme taxing investment income will have no direct effect on the type of benefits that are available to the employees
- As the actual investment return within the scheme will reduce, the cost of funding a DB provision will increase
- In case of Gratuity schemes which is a statutory benefit to be provided entirely by the employer, the contribution level for the employer will increase in case of funded schemes assuming there is no change in investment strategy to compensate
- In case of DB schemes other than gratuity, the contribution may be made both by the employees and the employer. Under such schemes also the contribution for the employer may generally increase. However, the employer may choose to reduce the overall level of benefits granted, or increase the contribution levels of employees or reduce discretionary benefits, if any
- In case of gratuity schemes also, if an employer is providing higher than Act Gratuity, the benefits may be reduced by the employer, though gratuity as per Payment of Gratuity Act, 1972 needs to be paid at least
- The transfer values are likely to be increased as the effective rate of discount to be used to value the earned benefits will decrease due to the lower expected lower return

Defined Contribution (DC) schemes:

- In case of a DC scheme, the benefits are directly affected by the investment return achieved. Hence taxing of investment return of such schemes will reduce the level of benefits available
- If same level of benefit is needed, then contribution level may need to be increased under DC schemes

Additional Voluntary Contributions (AVCs):

- Employees may make AVCs under EPF schemes (where the normal contribution is fixed under the Provident Fund & miscellaneous Provisions Act, 1952) in order to make good the reduction of benefits due to taxing of investment return
- AVCs under Occupational Pension Schemes may provide DB or DC benefit. In case of DB, the cost may increase for the employer who may then like to offer reduced level of benefits for the contributing members in future. In case of DC, the level of benefits for the contributing members may reduce

Size of contributions under DB schemes:

- The extent of increased cost of funding of a DB will vary from scheme to scheme and will depend on
  -the term of the liabilities, and

  -the proportion of investment return that relates to investment income rather than growth

- The effect of tax on the part of investment made in equities may be significantly lower as the investment return from capital gains will be much higher compared to dividend income
- In India the investment pattern of approved retirement benefit schemes is prescribed. The significant part of the fund of such schemes is invested in Government Securities and Corporate Bonds. The effect of tax will thus be almost 9 to 10% reduction in yield

Timing of Contributions under DB schemes:

- Taxing of investment income of retirement benefit schemes may discourage funding
- If the employer wants to fund at all. Then it may like to fund in less conservative manner

Investment Strategy:

- Though the investment pattern in India is prescribed, the taxation of investment income and not capital gains may lead to a move from bonds to equities to the extent possible
- It may also lead to a move from high dividend to a low dividend income equities

1 b) ii) **Other Assumptions:**

- The long term salary inflation is 9% p.a.
- Workers on an average join service at age 25 years and retire at age 60 putting in 35 years of service

- The economy is mature and workers have, on an average, put in 15 years service. Though the average outstanding service till retirement is 20 years, considering other decrements such as death, withdrawal, early/ill-health retirements etc the average future service of workers is 15 years
- EPF contribution is 10% of salary by employee with a matching amount by employer
- Tax is charged on investment income of EPFO
- There has not been any voluntary contributions in EPF

(A) EPF Scheme:

- Employers:
  -The impact on the employer will be nil
- Employees:
  -The reduction in employee's benefits will depend on prospective service
  -A new employee might be accumulating EPF equivalent to about 6.25 times his terminal salary at present [[2x0.1x $(1.08)^{34.5}\{(1.09/1.08)^{35}-1\}/\{(1.09/1.08)-1\}]/(1.09)^{34}$] or [=20x $(1.08)^{0.5}$ x 1.09x $\{1-(1.08/1.09)^{35}\}$]. The accumulation in future will reduce to about 5.54 times of his terminal salary [=11.111x $(1.072)^{0.5}$x 1.09x $\{1-(1.072/1.09)^{35}\}$] thus causing a reduction of about 11%
  -For a mature employee who has put in 15 years service and has 20 years to go till retirement, the reduction will be around 9.6% as he might accumulate to 5.65 times his terminal salary
  -Similarly for an employee who is 55 years of age and has 5 years' service left may lose 3.4% as he might be accumulating to around 6.04 times his terminal salary
- Government:
  -EPF being a DC benefit is necessarily a funded scheme. The government will get 0.8% of the fund as tax
  -The loss in EPF will be the gain to the government
  -Under a mature economy the EP fund, at present, will be 2.93 times (or approximately 3 times) [=20x $(1.08)^{0.5}$x 1.09x $\{1-(1.08/1.09)^{15}\}$] of the current wages of employees. The tax to the government will be around 2.34% of wages [=0.008x 2.93]. As the time passes the future accumulation will have effect of new tax and shall reduce with passage of time coming down ultimately to nearly 2.77 times of the wages [=11.111x $(1.072)^{0.5}$x 1.09x $\{1-(1.072/1.09)^{15}\}$]. The earning for the government will then be 2.22% of the wages [=0.008x 2.77]

(B) Gratuity Scheme

- Employees:
  -The impact on employees will be nil
- Employer:

-The gratuity scheme may either be funded or not funded. If it is not funded, then the impact on the employer will be nil as there will not be any investment income to be taxed

-In case of funded schemes, the income of the fund will be taxed and hence reduced from 8% to 7.2%. For a mature scheme with a mean term of liabilities of 15 years, the reduction in discounting rate will result in an increase of around 12% in the value of the liabilities [$=(1.08/1.072)^{15}$]

-Similarly a realistic valuation for a mature scheme would reveal an increase in Projected Unit Standard Contribution Rate (PUSCR) of 12%

-The valuation basis for accounting purpose may have different assumption for discounting rate for funded and unfunded schemes

- Government:

  -Under unfunded schemes, there will not be any tax income for the government

  -In case of funded schemes the government will get 0.8% of the fund as tax

  -The average gratuity fund will move from around 10 months' salary [$=15x\ 15/26x\ (1.09/1.08)^{15}$] to 11 months' salary [$=15x\ 15/26x\ (1.09/1.072)^{15}$] and tax income of the government from fully funded mature gratuity schemes will be 0.73% of the wages [=0.008x 11/12]

Overall:

For both EPF and Gratuity put together the expected tax income for the government will be around 3% of the wages of the workers [= 2.22+0.73]

1 b) iii) New proposed tax will discourage funding of DB schemes. The government should therefore introduce tax at 0.8% of the provision made in the company's accounts towards liability under unfunded DB schemes

Further the government should ensure that the basis for accounting of DB retirement benefit schemes is prescribed otherwise employers may make less provision in order to reduce the tax liability

In case of partly funded schemes, the tax should be charged on investment income of the fund of the scheme as well as on the accounting provision made for the deficit (i.e. unfunded liability)

Investment income of EPF scheme managed by EPFO should also be taxed

1 c) i)

- **Personal Pension Plans of life insurers:**

  -Life insurers offer two types of plans- traditional & unit-linked

  -Traditional plans are generally with profit where there is a guaranteed amount promised at maturity. Bonuses are declared depending on the performance of with-profit fund of the insurer

-Under Unit-linked contributions are unitized, NAV is declared on periodical basis, generally daily. They may offer a number of funds with different exposure of equity, corporate/government bonds
-Under Unit-linked plans charges are explicit. Further maximum surrender penalties are prescribed under the regulations
-Both the traditional and unit-linked need to offer certain minimum positive non-zero investment return to the policyholders
-At least 2/3rd of the accumulated sum needs to be annuitized on surrender or at maturity
-Annuity needs to be purchased from the same insurer
-The contributor may avail tax benefit on contributions made under the plans. However, annuity is taxable as salary
-Life cover can be availed under these plans

- **Public Provident Fund (PPF):**

  -Any individual can open a PPF account with a Post Office or a branch of SBI & its Associated Banks or with selected branches of other nationalized banks which is voluntary
  -Account may be opened for self and/or the spouse and/or the minor children
  -Only one account can be opened under a single name
  -Minimum and maximum contribution can be ₹500/- and ₹100,000/- (earlier max was ₹70,000/-) respectively in a financial year. Further contribution should be in the multiples of ₹5/- and not more than 12 contributions can be made in a year
  -Account matures in 15 years irrespective of the age of the contributor but can be extended by 5 years and hence can mature at the end of 20, 25, and so on years. The option for renewal needs to be exercised within a year of its maturity
  -Partial withdrawals can be made after sixth year onwards
  -Subscriber can avail loan from 3rd year onwards on which he has to pay 2% more interest (earlier it was 1% more)
  -Tax rebate is available on contributions under Section 80C of IT Act. Further accumulations and withdrawals are tax free. Also interest earned is totally exempt
  -Present rate of interest is 8.6%. Earlier from 1st March 2003 it was 8%

- **PFRDA Scheme:**

  -The scheme is popularly known as New Pension Scheme (NPS). For individuals it is of two types-NPS main and NPS Lite
  -NPS main is for Government employees who have joined on or after 1st Jan 2004. It is compulsory wherein 10% of salary is contributed by members with matching contribution by the Government
  -NPS Lite is voluntary and any individual between age 18 and 60 can contribute for it
  -It is a DC scheme and the contributions can be made through Post Offices or existing network of branches of banks

-There are two types of accounts-Tier I and Tier II. Tier II account can be opened in addition to Tier I account. Withdrawals can be made on voluntary basis from Tier II account
-Individuals can normally exit on or after age 60. At exit at least 40% of the accumulated sum needs to be annuitized from Tier I account
-People can leave prior to age 60 in which case 80% of the accumulated sum needs to be annuitized
-The scheme offers choice of investment schemes and the Pension Fund Managers (PFMs) where contribution is unitized and NAV is declared on regular basis. Different level of exposure to equity (max 50%) is offered under different schemes. Choice of life cycle fund is also given where exposure to equity reduces with age
- Tax rebate is available on contributions under section 80C and accumulation is tax free. But pension is taxable as salary
- A Swavalamban scheme has been introduced for economically disadvantaged people where they can make a minimum contribution of ₹1,000/- and max ₹12,000/- in a year. The government of India will contribute ₹1000/- per annum for 4 years under such an account
-The charges under the scheme are comparatively low

- **Property:**
  -An individual may get exposure to real estate by purchasing property (residential or commercial) directly to provide income in his retirement
  -The exposure may also be got by investing in real estate company's shares or Mutual Fund schemes
  -Direct investment may only be made by individuals who have large sum to invest
  -Property may provide likely real return in the long term
  -Generally lower volatility of returns when compared to equities
  -Poor liquidity and marketability
  -Property may provide diversification as the retirement pot needs to be invested in various asset classes
  -Costs/expenses of investment are high due to registration duty, high maintenance costs, brokerages, property tax etc
  -One can have housing loan on investment property (other than self-occupied), the entire interest payable on such loan is deductible from income
  -Rental income is taxable, however, deduction of property tax and maintenance up to a limit of rental income is allowed

- **Equity:**
  -One can invest a part of his retirement pot directly in equity
  -Exposure to equity can also be had by investing in Mutual Fund equity schemes or Unit-linked life insurance plans (ULIPs)
  -Equity is likely to provide real return in the long term

-Shares of most quoted companies are readily marketable. Shares of smaller quoted or unquoted companies are less marketable
-Short term volatility of market prices of shares is high
-One needs to invest in shares of various companies operating in different industries, sectors, geographies etc in order to have good diversification
-Those who have sufficiently large retirement pot can invest directly with adequate diversification
-Dealing costs are high
-Relatively low initial income stream which may also be volatile. Further significant return comes from growth
-Dividend income is tax free and short term capital gains is taxable at a lower rate

1 c) ii) Issues to be considered while advising someone on the rate of contribution for personal pension plans are as under:

- **Why do they want to contribute to a personal pension?**
  -Do they have the option of joining an employer sponsored occupational scheme?
  -Do they pay tax?
  -If so, what is the marginal tax rate?
  -Are they already paying under a PPF account, NPS of PFRDA, Personal Pension Plan of life insurer?

- **What benefits do they want?**
  -When are they likely to retire?
  -What level of total benefits do they want?
  -What level of benefits in their retirement are they expecting from other resources, if any including assets like parental property etc?
  -What level of post retirement benefit increases do they need?
  -The no. of dependants, their health, ages, earnings etc.
  -What level of death and health insurance benefits do they need?
  -Level of lump sum needed for marriages, education of children, repayment of housing loan etc.

- **What contributions can be paid?**
  -What level of contributions can they afford now?
  -How may this change in future?
  -What can maximum be paid under different tax efficient schemes and how may it change in future?
  -Do they want to contribute to the maximum/minimum?

- **Optimistic/pessimistic view**
  -Are they optimistic/ pessimistic about the future experience?
  -Their attitude towards risk
  -Their risk bearing capacity
  -What investment strategy do they want to adopt?

1 c) iii) **Likelihood of retiring with desired benefits:**

- **Whether or not the person gets desired benefits would depend on the actual experience in respect of the following factors from what was assumed:**
  -The pre-retirement investment performance
  -The post-retirement investment performance in respect of the direct fund invested
  -The annuity rates at the time of purchase of annuities at retirement
  -The salary increases till retirement
  -The price and salary inflation after retirement
  -The interaction between the above factors
- Pre-retirement investment performance, salary increases and annuity rates may vary a lot if the time lag till the retirement is long enough
- If the time lag is short, chance of wide variation from what is assumed may not be substantially high
- **Further variation may depend on the investment strategy adopted**:
  -Equities, though expected to provide higher return, may be quite volatile from returns point of view
  -Medium to long term gilts and corporate bonds are expected to match the changes in annuity prices
  -Cash offers relatively low expected return but does not fall in market value
- If time lag is long, the plan itself needs to be reviewed so that corrective action may be taken to the extent possible
- Changes may still occur on many aspects, for example,
  -Change in taxation basis/ rates,
  - Change in family size etc.
- Uncertainties can be reduced but cannot be wiped out completely.

(50 Marks)

2. A new senior management team has recently come on board and has seen how the last three years' cost of this plan has substantially increased in the financial statements. They would like to review the plan with your help as Actuary to the plan.

a) The CFO has asked you to prepare a report covering:
   i. the key risks the company faces due to the specific characteristics of the plan
   ii. the factors that will influence future costs of the plan in its current design
   iii. how does the current plan design affect different types of potential employees

i)

- The plan is a defined benefit plan and the ultimate cost of the plan is unknown.
- The company faces general risks from costs being more than expected due to
    a. salary increases being greater than expected
    b. investment returns being less than expected
    c. mortality being less (i.e. increased longevity) both of employees and spouse beneficiaries
    d. more people reaching age 50 and 10 years service than expected

- The plan pays its own pensions and so there are administration and operational risks to ensure the right pension is paid to the right person at the right time. For example; recording keeping, monitoring of who has commuted pension, applying correct increases, existence checks
- As the plan is managed under Trusts and would have income tax approval, there are compliance risks that need to be overseen e.g. tax returns, audited accounts and adherence to the set pattern for investments
- The plan is relatively complex and there is a risk that employees and administrators do not fully understand the scheme
- The company will have a risk of managing expectations of future discretionary increases as compared to what it feel sit can afford to fund
- The salary and service risk is some what offset by the fact that these factors would lead to a higher Gratuity benefit to those affected employees

ii)

- The key determinant of cost will be how many employees reach retirement and are eligible for the pension.
- The eventual salary levels of retirees will determine the main pension formulae.
- However, high salary growth will also impact the level of the gratuity benefit offset and mitigate the pension scheme cost
- Any change is Gratuity Act benefits will have a direct impact on the cost of the pension scheme. For example if the cap is increased it will lower the cost of the pension plan
- The commutation factor of Rs10 for each Rs1 needs to be assessed against the estimated cost of the liability. If the factor is higher than the cost then there is a risk of actual cost being higher of the overall benefit if more people elect for commutation
- There is a risk of any curbing back of Gratuity benefits in the Gratuity Act which would increase the net obligation under the current pension scheme
- As the pension formulae is not service based (except for vesting criteria) the cost of the plan as a percentage of salary is greater if there are more older new entrants. When setting the funding policy the company will assume an assumed new entrant profile and if the actual profile is older than assumed the costs would be higher than expected
- In a similar way younger members becoming eligible will cost less as they will have also accrued proportionately higher gratuity benefits through longer service
- The company will need to account for the liabilities under accounting standard AS15 (revised) and changes in the standard affect future measurement and disclosure of the plan for the profit and loss statement and balance sheet

iii)

- Any employee who is not expecting to stay in the company until age 50 will not see value of the pension scheme at all as there is no pension if they leave before age 50 and 10 years service
- Anyone who joins post age 40 will have to be more than age 50 before being eligible
- The above points mean that for new entrants before age 40 have an effective vesting of more than 10 years which they will deem unequal
- Lower earners whose FPS remains below Rs600,000 per year at retirement gain a higher gross net replacement ratio than those whose earnings mean the low fractions are applied to earnings above that
- As the formula is not based on service, longer serving employees get a lower effective accrual rate than someone who has just 10 years and joined at age 40.
- This is further compounded by the fact those longer serving employees will receive a proportionately higher Gratuity benefit which is offset from the pension formula
- However, this offset will reach a limit for anyone who reaches the Gratuity cap of 10 lakh
- As the pension increases are discretionary, that means uncertainty of future increases. This would mean an inflationary erosion of the pension whilst in payment

b) The HR Director has said that a defined contribution scheme for new employees that is generally "neutral" to the current pension plan would be a good idea. He has asked for a description of different methods of determining a contribution rate that is "neutral" to the current plan.

i. What are the potential definitions of "neutral" that could be used

ii. Comment on the methods that could be used to work out a contribution rate for the new defined contribution scheme

iii. How suitable they are for this purpose

i)

- Neutral could mean "Cost" neutral
- Cost Neutral may be taken to mean accounting AS15 cost neutral
- Cost neutral may be taken to mean contribution neutral
- Neutral could also be defined as "Benefit" neutral

ii)

- In designing a targeted defined contribution rate one could use the Projected Unit Method or Entry Age Method
- Projected Unit Method contribution rate is the present value of all benefits that will accrue in the one year following the valuation date, by reference to service in that year and projected final earnings

  divided by
  the present value of all members' earnings in that year

- Entry Age method contribution rate is the present value of all future benefits for a member joining at the assumed entry age, by reference to project earnings

  divided by

  the present value of total projected earnings for that member throughout his/her expected membership
- Projected Unit Method contribution will be different for employee in each year
- In a case where salary growth assumption is greater than discount rate then the rate would increase each year under PUM
- Entry Age would have a set rate for each employee for all their service based on the age at which they enter and would remain the same throughout service
- PUM is consistent with the accounting AS15 (Revised) valuation method which will help if looking at a cost neutral approach
- Both methods would not guarantee cost neutrality as the cost of the current plan can be measured in various ways (e.g. funding, accounting) and the estimate of cost would change over time. One would not revisit contribution rates very often (maybe once every 5 years)
- Contribution rates courl be expressed as a percentage of salary or even a fixed amount
- One could also pay the same rate as what is being paid in to the DB plan currently as an average rate

iii)

- EAM is good for a stable rate for the employee through out service however employees would need to be explained why different rates are there for different staff
- EAM is good for equality of targeting similar benefit levels at retirement no matter at what age a person joins
- PUM is good to apply with an age related rate for all employees.
- To save administration and also make it easier for communication one could decide rates for five year age bands
- With the current scheme having stringent eligibility criteria the assumptions about attrition will be critical and sensitive to working out an appropriate rate. For this, the EAM method seems more appropriate
- A fixed amount would not be suitable as there would need to be significant cross subsidies between younger and older employees
- Taking the current DB contribution also suffers from cross subsidies and also can be distorted if the rate currently paid reflects any amortization of surplus or deficit

c) It has been decided to start a brand new defined contribution scheme for all new employees with effect from 1 April 2012. This would be in addition to the statutory gratuity scheme. Having deliberated over the issues, the CFO and HR Director have asked on treatment of existing employees. They would like to consider how to deal with existing employees benefits already accrued.

   i. What are the approaches available to the company to deal with existing employees under the pension plan

ii. What are advantages and disadvantages of each approach that the company needs to keep in mind when deciding the treatment of the existing employees; this is both from the company's perspective and the different employees' perspective.

iii. If a transfer value for each individual is to be calculated, what assumptions would be required

iv. Under the approaches in part i), conceptually how would the AS15 (Revised) expense be impacted

v. What investigations are needed to estimate the actual impact on the company financials that would result by of offering a transfer value option to existing employees

i)

- Continue the existing scheme
- Look at modifying the current scheme for future accrual
- Close the scheme for future accrual and freeze the current scheme benefits with completed service but continue the salary link to time of exit
- Close the scheme for future accrual and freeze the current scheme benefits with completed service and current salary
- Close the scheme for future accrual and freeze the current scheme benefits with completed service and current salary. However, establish a fixed revaluation link (inflationary or a fixed rate) to time of exit
- Close the scheme and purchase deferred annuities with an insurance company
- Offer a transfer of their equitable interest as an opening balance to the new defined contribution scheme

ii)

Existing scheme

- Company is still exposed to all the risks of the current defined benefit plan
- The continuing increasing costs will not be addressed
- It will mean not having to explain a new scheme or changes to staff or incur expenses in changing administration processes
- Employees will be satisfied that they continue to receive a Defined benefit plan

Modify existing scheme

- If changes are made they can only be made for future service
- Company would need to apportion existing benefits somehow, as the current formula is not service based
- Company would save ongoing incremental costs (e.g. if it changed the percentages or amended the earning slabs)
- The company would still have uncertainty on overall cost as it remains a defined benefit scheme

- Employees would be happy that a defined benefit scheme is retained

Freeze with service only but continue salary link

- The company limits the risk of further incremental risks as ongoing accrual stops. With the current design it will need to consider pro-rata approach to apportion past service and also freeze Gratuity service being considered for the offset
- However, risks related to past accrued benefits remain. In particular, the link to FPS remains. Risks related to investment, improving mortality also still remain
- Employees would want to know what is being offered for benefits in place for future service. This uncertainty may create some HR issues amongst staff
- In particular employees that have not vested will need to be assured on how their existing past service benefits will be administered.
- The company will need to maintain dual administration, one for past service and the other for whatever future service benefits there are.
  This will increase ongoing costs slightly .
- Employees may not fully understand any change and forget at the time of retirement and so additional communication is required
- It is good for employees that the salary linkage is being maintained

Freeze with service and salary

In addition to points above,

- The company is limiting the risk of any salary growth in the future
- The company will gain a past cost saving from this
- Employees will not be happy that their accrued benefit will not keep pace in real terms relative to their salary by the time they retire
- Additional compensation for this loss for employees may be sought in any new scheme or as a one –off benefit
- The gratuity offset formula will also need to be adapted for the frozen benefit

Freeze with service only but have a revaluation in deferment

In addition to points above,

- If the company opts for a fixed rate of revaluation then it will have reduced the uncertainty related to salary growth.
- Employees will have the benefit of some growth on their deferred pension to combat inflation

Deferred Annuity

- There may not be such deferred annuities available
- The potential purchase price may be significantly more than running the scheme on a frozen basis
- All risks for longevity, investment return, revaluation, annuity prices at retirement are eliminated for the employer

Transfer value

- The company eliminates future risk for the DB scheme for those transferring
- Company needs to maintain dual administration as some members may not transfer
- Certain employees will prefer a DC scheme

iii)

- Salary growth
- Discount rate
- Attrition
- Discretionary pension increases (which could be zero)
- Mortality in service
- Mortality in retirement
- Portion of cash commutation taken
- Age difference of spouse at death
- Mortality of the spouse
- If needed, then inflation revaluation of the frozen benefit
- Any possible changes in Gratuity Act to allow for e.g. formula, ceiling

iv)

- The AS15 expense is made up of the following key items:
  - Service Cost
  - Interest Cost
  - Expected return on assets
  - Any special events gain/losses such as curtailments/settlements
  - Actuarial gains and losses

- In all cases except where the scheme continues unchanged there will be a reduction in service cost.
- Where future accrual stops for all employees the service cost for the existing scheme will become zero.
- The defined benefit obligation will reduce in the cases where service is frozen and the future salary linkage is reduced (either freezing or reducing it to a fixed revaluation)
- This means that in future periods after the change, there will be a reduction in interest costs as well
- The expected return on assets will reduce in the case where a transfer is offered to the new DC scheme and to the extent that employees elect the transfer option
- In the case of the frozen service and salary situation there will be a curtailment gain that emerges. The curtailment gain will be the difference in the defined benefit obligation before the change compared to after the change. The amount will be approximately the salary growth percentage for each year of the average future working lifetime.
- The curtailment gain will be lesser in the case of a fixed revaluation scenario and where the revaluation rate is lower than the salary growth assumption
- In the case of the transfer value option or insurer buy-out, there will be a settlement gain or loss to the extent that the defined benefit obligation differs from the transfer values paid/insurer premium paid for those employees who elect the transfer option.

- The difference in transfer value and DBO could occur if the actuarial value bases are different. (e.g. allowance for discretionary pension increases)

v)

- An actuarial valuation of all employees under the current accounting AS15 (Revised) basis should be carried out
- An estimate of the service cost for all employees for the next year should be calculated under the same basis
- This should be done on an employee by employee basis
- Each employee should have their transfer value calculated in accordance with the assumptions agreed for that purpose
- An extrapolation of the AS15 expense for the next year should be performed
- A range of different scenarios of the expense should be calculated
- The different scenarios will have to have a key assumption of the take up rate of the transfer value option
- The take up rate assumption may differ by age of employees and also their proximity to becoming eligible for the pension benefit. Older employees and those close to becoming vested will tend to prefer not transferring
- The above will enable to work out the impact for each component of the expense
- In addition to the expense of the defined benefit scheme the company will need to add the cost of any defined contribution contributions for those transferring in order to get a complete sense of the total cost difference

d) List the specific aspects of the benefit design that will require to be explained to employees to facilitate the decision of the company to

i. introduce a new defined contribution pension plan section
ii. offer the existing employees a choice to join the new section, giving them a choice of transferring the value of their accrued benefits as an opening balance in the defined contribution scheme

i)

- Joining eligibility (where automatic, optional)
- Any minimum and maximum age for joining
- Any service period waiting period
- Contribution rate
- Vesting criteria (service based and/or age based)
- Leaving service benefits (transfer or deferred balances or immediate annuity)
- Retirement benefits annuity
- Form of annuity and any options related to the same
- Death in service benefits
- Normal retirement age
- Ill health benefits
- Cash Commutation allowance and calculation terms

- Description of how contributions are invested

ii)

- Amount of transfer value
- Description of the method of calculation
- Accrued benefits on which the calculation is based
- Assumptions used for discount rate, attrition and salary growth
- If the DC scheme vesting criteria is different then are there any special treatment for the opening balance transfer amount for vesting purposes
- Illustrative projections of future benefits under current scheme and if they transfer

(50 marks)

[Total 100 Marks]

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