Institute of Actuaries of India

Subject SA4: Pensions and Other Employee Benefits

March 2018 Examination

INDICATIVE SOLUTION

Introduction

The indicative solution has been written by the paper setters with the aim of helping markers of scripts so as to have a framework and be consistent while evaluating answers. The solutions given are only indicative. It is realized that there could be other points as valid answers and the marker may give credit for any such alternative approach or interpretation which the marker considers to be appropriate.

Solution 1:

i)

Normal Retirement Age	•NRA 58
Early retirement	•Benefits are available from age 50 (Early retirement)
	•Must have completed 10 years service at retirement
Contributions	•Employer Contributions of 8.33% of Pensionable Salary (up to INR 15,000 per month). i.e. maximum contribution INR 1,250 per month
	•Employer Contribution allocated from the 12% Employer PF overall contribution
Pension Formula	•Monthly pension = (Pensionable salary*Pensionable service)/70
	•Subject to a minimum pension of Rs. 1,000 per month
	A more complex and different formula applies to pensionable service pre-16 November 1995
Pensionable salary	•Pensionable Salary is arrived as the average of 60 months last drawn salary instead of earlier rule of last 12 months average salary.
	•Pensionable salary is limited to INR 15,000 per month
	•The pensionable salary shall be determined on a pro-rata basis for the pensionable service up to 31st August, 2014, subject to a maximum of Rs. 6,500/- per month and for the period w.e.f. 1-9-2014, subject to the maximum of Rs. 15,000/- per month,
Pensionable service	•Pensionable Service counts from 16 November 1995
	•Pensionable service is limited to 35 years
	•If an employee completed 58 yrs of age and completed 20 yrs of service or more, his pensionable service will be increased by 2 years for calculation purpose.
	•The fraction of service for six months or more shall be treated as one year and the service less than six months shall be ignored.
Death Pension	•Pension is available to widow/er on death of a member as long as at least one months' contribution has been paid and subject to a minimum pension of Rs.1,000 per month.

[5]

ii)

EPS is a defined benefit plan but with defined contribution funding also		
Given this the methods that can be used will vary based on the purpose of the funding level measurement		
Purpose/ Circumstance	**Methods available**	**Description**
Ongoing funding level as at a valuation date	Projected unit credit-defined benefit obligation	Will assess the net present value of the projected estimated benefits; projecting out pensionable salaries and accrued benefits from service accrued to the valuation date
	Projected unit credit-standard contribution rate	Will assess the net present value of the projected estimated benefits; projecting out pensionable salaries from one year of service following the valuation date, expressed as a percentage of the value of next year's pensionable salary
	Current unit credit - defined benefit obligation	Will assess the net present value of the projected estimated benefits; based on current accrued benefits to the valuation date.
	Current unit credit - standard contribution rate	Will assess the net present value of the projected estimated benefits; projecting out pensionable salaries from one year of service following the valuation date; plus the amount increased to the next year's pensionable salary increase applied to past service at the valuation date, expressed as a percentage of the value of next year's pensionable salary
	Attained age Method - defined benefit obligation	Will assess the net present value of the projected estimated benefits; projecting out pensionable salaries and accrued benefits from service accrued to the valuation date
	Attained Age method - standard contribution rate	Will assess the net present value of the projected estimated benefits; projecting out pensionable salaries from all future expected service following the valuation date, expressed as a percentage of the present value of total future expected projected pensionable salaries
	Aggregate Method - Modified contribution rate	the present value of total benefits, based on projected final pensionable salaries for members in service, minus the present value of the assets divided by the present value of total projected pensionable salaries for all members throughout their expected membership.
Discontinuance funding level	Wind up benefits value	The current accrued benefits payable to all members if the plan was to wind up
		Would need to determine how to value the future pension payouts (annuity values) or bulk buy out / cash out value or accounting value basis

Asset liability exercise / Cashflow planning	Cashflow solvency basis	Over a projection period - project the estimated outflows versus the inflows into the fund and determine the net cashflow position in each future projection period (e.g. annually), may be till the benefits are paid out/purchased for the last member/beneficiary
Contribution rate sustainability	Entry age method	Will assess the net present value of the projected estimated benefits for a new entrant profile; projecting out salaries from all future expected service following the valuation date, expressed as a percentage of the present value of total future expected projected pensionable salaries.

[10]

iii)

Financial	What has been the past funding levels; their volatility and sustainability
	How much has the company had to fund deficits in the past
	What are projected contributions likely to be to fund the benefits and how do they compare with the statutory contribution rates prescribed by the EPFO under different future scenarios if the exemption is to continue
	What will be the financial and other implications for the company if the exemption is to be discontinued
Administration	What is the cost of administration in reality compared to the combined contribution rate to the EPFO for EPS?
	Have there been errors in the past handling benefits administration internally
	Does the Company foresee strategically wanting to continue running the EPS trust? Have there been company structure changes that impact that decision? Such as elimination of a central team - or multiple corporate transactions taking place meaning the EPS Trust is becoming a legacy plan only.
	Are there key person risks in who and how the administration is being done?
Governance	How much time is being spent on governance of the Plan?
	What are the costs of Governance e.g. administration; valuations; trust accounting; employee communications and query handling
Legislative	What were recent findings in any EPFO inspection on the EPS trust?
	Were these findings systemic issues or small one offs
	Is legislation likely to change in terms of benefits increasing or changing; how is the Trust finances and administration ready for such changes
	Is there likely to be a requirement from EPFO in future to hand back the EPS trusts.
Employee feedback/reaction	What has feedback been about the Trust from employees/retirees
	How many employee queries does the Trust receive monthly?

[5]

iv)

Overall	Discuss with the CFO about who you would be providing the advice to: the company or Trustees?
	Discuss what the purpose of the exercise is? Cash flow matching? Projection of future funding levels or sustainability of future contribution rates?
Data	Date of hire
	Date of birth
	EPS earnings history since the last 60 months
	Gender and retirement age
	Spouse's & children data if available
	Separate for retirees and for widow/ers and active employees
	Pension amount payable
	Check if there are any ex-employees yet to start their pension
	Conduct reasonableness checks on the data and check for consistency with last valuation information (if available)
	Asset data and Trust Accounts
Assumptions required	Salary increase rate through past trend analysis should be obtained. The analysis should be done on the EPS95 earnings pattern.
	The projection of pensionable salary also needs to consider future increases in the Rs 15,000 per month limit by EPFO
	If assignment is to include future estimate of funding levels then we will require an assumption of future discount rates
	This could be determined through futures yields expected from the market - of the type of investment broad asset allocation of the fund
	Given EPS Trusts are very rare and not necessarily covered under EPF exemption investment rules - one would need to check what regulatory investment allocation patterns have been prescribed, if any for the EPS95 Trust.
	if not available or prescribed, then the actual investment strategy followed by EPS95 Trust could be used as a proxy
	Based on the maturity dates of existing investments, future reinvestment rates will need to be assumed
	past trend analysis of attrition would be performed. This may differ based on category of staff or location? Different assumptions may be used accordingly.
	Need to decide with the client what will the overall population growth in the projections be assumed at.
	Based on past analysis and also inputs from the Company; we will determine the profile of staff / salary and age of future employees who will enter the company - as replacements for future leavers and/or for population growth
	Also need to decide what scenario analyses will be done
Method	Determine the projection period - say 20-30 years may be appropriate
Liability side	Using a cashflow model, project out year on year anticipated benefit payouts
	If needing to calculate the funding at each year, then calculate the PBO according to Projected unit credit method (ongoing basis and appropriate for the exercise) at each year.
Asset side	Using a cashflow model, project out year on year anticipated benefit payouts
	Also project out the estimated contributions into the fund
	Using a cashflow model, project out year on year anticipated investment receivables; and maturity proceeds

	One could also use a stochastic model for future interest rates; reinvestment rates.
Results	For a deterministic approach, repeat the above under each agreed scenarios
	Compare projected inflows vs outflows from the fund

[8]

v)

Overall	State that APS27 has been considered and complied with along with highlighting any deviations
Responsibility of the member	Be sure to outline the purpose, scope and capacity in which the assignment is being provided
	Be clear to state the client to whom the advice is being provided to
	Ensure the client understands their role and responsibility in the assignment
	Must clearly state the extent to which any third party can rely on the actuarial work performed and its limitations for use by third parties.
Data	While initiating the assignment, must indicate what information is required and must also be able to demonstrate the reason for requiring such information.
	There may be specific information required for certain type of employee benefits either for the core data input or as information to provide advice on appropriate assumptions to be recommended. Broadly, data may constitute of: • Employee level information such as dates of birth, joining dates, pensionable salary information, employee category, retirement age etc. • Benefit plan information such as governing plan documentation, HR policies or practices or employee communications. • Information to analyse trends in the development of assumption recommendations. • Asset information where it is required to be included in the reports.
	Must mention the information relied upon, its source and the extent of the checks applied by the member in order to the accuracy and relevance of the information must be disclosed in the report.
	The final report should summarise the data used for the exercise.
Benefits Offered	Outline the plan parameters of the scheme, mention any plan parameters that have not been valued that may have a significant impact on the results due to uncertainty or lack of data. One must state what approach has been taken in such a scenario for the valuation
Uncertainty	If there is any uncertainty (e.g. impact of legislation on the calculation of benefits), the report should include necessary references to the same.
Methodology	State the method used for the exercise and mention its applicability, given the purpose is for an asset liability exercise.
Assumptions	State the assumptions used in, in the models and their appropriateness for the purpose of the calculations for which they are used. Mention how the assumptions used in the models have been derived including the source of relevant information. What information is relevant is a matter of judgement and might depend on matters such as the effective date of the calculations, the purpose and the nature of the calculations for which the assumptions will be used.

	In case the assumptions are not determined by the member but received as an input for the valuation (e.g. in case of valuations carried out to support accounting of defined benefit plans) and the member has relied on the same or has not validated the appropriateness or adequacy of the assumptions, the same must be clearly spelt out in his/her report along with his views on general appropriateness of the assumptions.
	Outline the investigations done and data obtained to develop the assumptions, if any
	If there are uncertainties in the data/relevant information to develop the assumptions then one must outline these; and in case proxies are used then these should be specified.
	One must comment on the appropriateness of the assumptions for the exercise being undertaken
	Outline the assumptions to which the results are particularly sensitive to.
Reporting	Adhere to the reporting guidelines given in Section 8.6 of the Standard
Technical Application	Consider the technical application where relevant for an asset liability exercise

[7]

vi) a)

Employees	For those whose PF salary has not been or is unlikely to hit the current threshold cap are not to be affected by this option
	However, most employees will benefit to a potentially much higher EPS pension
	Given the option will possibly be retrospective, employees will need to understand how the retrospective service is funded for - given past contributions have been paid on capped PF salary.
	If EPF contributions are being paid on full uncapped PF salary then the funding may come from an employee's current EPF balance. A portion of it will need to be reallocated to EPS (past difference of actual contributions and newly calculated uncapped EPS contributions).
	If there are retirees in the Trust being paid currently - then they will also require assessment.
	Complexity with retirees is that their retrospective funding will depend if they have taken their EPF benefits also. Retirees may need to self fund retrospective contributions.

[2]

b)

Trust	Need to assess potential future liabilities on the higher EPS pensions of members
	Need to assess liquidity and cashflow requirements - especially if existing retirees also offered the option.
	Large scale data cleaning and past records will need to be checked to recalculate benefits
	New administration database fields will need to be created and tracked so the Trust can track who has chosen the option or not

	The Trust will now also need to liaise with the EPF funds (this would be even more complex if the EPF funds are with RPFC) - easier if there is an exempt Trust
	Will need to review the investment strategy / duration of invested funds etc.

[3]

c)

Company	Need to assess potential future liabilities on the higher EPS pensions of members
	There may be one off deficits to fund
	The contribution rate may increase significantly and prevent the Trust from being a viable option anymore
	Large communication exercise to employees and retirees will need to be done
	Company needs to consider financial implications due to EPS pension increases in case of future salary increases

[2]

vii)

Specifying approach		
a	Calculate value of the projected EPS95 "capped" benefit as per option rule for higher pension at age 58	1,350,000
b	Accumulated value of past & future capped EPS95 contributions to age 58	2,427,833
c	Cost to company of “capped” benefit (a-b)	(1,077,833)
d	Calculate value of the projected EPS95 "uncapped" benefit as per option rule for higher pension at age 58	15,845,040
e	Accumulated value of “past” and "future" uncapped EPS95 contributions to age 58	6,083,048
f	Cost to company of “uncapped” benefit (d-e)	9,761,992
g	“Additional” cost at age 58 (f-c)	10,839,825
h	Discount back above answer from age 58 to now	4,813,012
Assume 2017 Valuation date		
PF Salary Growth	8%	
PF Return	8.5%	
Discount rate	7%	
Annuity cost	15	

Age at entry	25	
Future service to NRA	12	=(NPA-Age now) =58-46
Projected EPS Salary at NRA - uncapped	176,056	=15000*(1+0.08)^32
Projected uncapped benefit EPS95 per month	88,028	=(MIN(35,21+12+2))/70*176056
a	1,350,000	=15000*35/70*15*12
b	2,427,833	=15000*12*0.0833*[(1.085)^32+(1.085)^31+……… ………+1]
d	15,845,040	=88,028*15*12
e	6,083,048	=15000*12*0.0833*[(1.085)^32+(1.085)^31*(1.08) +….+(1.085)*(1.08)^31]
h	4,813,012	=10839825/1.07^12

[8]

[50 Marks]

Solution 2:

i) Inferences on the financial & other characteristics of the retirement benefits offered by Company "Y"

Gratuity is a defined retirement benefit

Pension schemes can be established either on DC or DB basis. But the actuarial assumptions used in the table indicate that the benefits are DB in nature

Use of "salary increases" in the assumptions indicate that the benefits under both gratuity & pension schemes are linked to salary at the time of exit.

We have no information on nature of pension benefits after retirement –there are no indications on the pension increases in the table.

Current service cost provides information on the accruing cost during the accounting period (one year)

For the Gratuity, the cost has increased over the year – possibly to reflect the strengthening of actuarial basis.

But for the pension scheme, the pension cost has decreased over the year despite the change in basis.

The volatility indicates either the profile of the membership is not stable or indicates data related issues.

Comparison of accrued value of benefits with current year cost (1 year accruing cost) gives indications of the significance of accrued benefits.

The value of accrued benefits for pension is 70 times of current service cost for the current year; for Gratuity it is 48-50 times of the current service cost.

The high ratio indicates that both Gratuity & Pension schemes have significant accrued benefits – indicating the maturing profile of the scheme

The interest cost as reflected in Profit & loss account is significantly higher than the current service cost for both the schemes – giving more evidence on the maturing profile of the scheme with the larger accrued benefits.

But we need more information to make further comment on the profile

In pension scheme, there is a cost to the scheme under the head "other items" in the current year. The cost may arise due to recognition of past service benefits arising due to improvement

in benefits under the scheme or due to the effect of "curtailment or settlement" arising due to benefit restructuring initiated by the company. But we need more information to make further comments on this issue.
The scheme has "actuarial loss" on the benefit obligations for both gratuity & pension – the loss is existing in both the accounting periods.
The actuarial loss is 10% of benefit obligation for Pension & 3-6% for Gratuity.
The "actuarial loss" on the benefit obligations may be due to:

a) Strengthening of basis OR due to b) benefit pay out higher than the benefits valued – We need information on the split between the components to make further comments.
Both Gratuity & Pension Schemes are funded as information is available in the table about the assets backing the schemes.
Net liability indicates that the schemes are not fully funded –funding status has significantly improved over the last year – 90 to 95% for pension; 94 to 99% for Gratuity
Company is making regular contribution into the fund - Significant injections in the Current year may indicate the covenant of the Company to finance the scheme and manage the volatility.
Both the Pension & Gratuity Schemes are predominantly investing in "Government Securities "– this may provide a good match for the accrued benefit obligations.
The actuarial gain on the asset side in the current year indicates that the actual investment performance is higher than the investment return assumed in the accounting figures.
But actuarial loss on the asset side (in the last year) indicates the poor investment performance of the assets as compared to the assumptions made at the outset in that year.
The strengthening of discounting factor during the current year may reflect the Scheme Actuary's professional response to the poor performance of the assets or it may be due to changes in bond yield.
Insurer managed funds provide scope of diversification or investment opportunities to deliver superior returns.
We need information to comment on the 5% assets in the "other category" - the assets may reflect the current assets of the Scheme - e.g. amount due to pension (Gratuity) fund

[13]

ii)

Benefit details:

Details of Gratuity benefits provided under the scheme – whether it is being provided as per gratuity Act or some other scheme formula (e.g. 1 month salary for each year of service)
If it is provided as per Gratuity Act, we need to consider the impact of the possible increase in benefit ceiling from Rs. 10 lakh to Rs. 20 lakh (at least) on the accrued service.
Pension Benefits in India are not statutory –they are structured to suit the objectives (in terms of cost, attracting & retaining new talents) of the company and its HR policy.
We need to understand the level of benefits provided for various categories of members (active members, early leavers, and retirees), their link to final salary, accrual rate, limits to accrual, ceiling on the benefits etc.
The Pension scheme is unlikely to be DC scheme as it is being valued using actuarial assumptions– But there is scope for the Scheme to be still a DC scheme with underlying Guarantee (e.g. Hybrid scheme). In this case we need to ascertain the benefits guaranteed and how significant is the underlying guarantee.
Eligibility criteria, Normal Retirement age, options for early or late retirement etc. will also to be collected for both the schemes.

Gratuity will be fully financed by employer; but Pension schemes may be contributory – if it is contributory, there may be a need to protect the benefits at least to the extent of the members contributions at the time of purchase.
Any impending benefit increases through wage revision, or benefit promises will impact both the Gratuity & Pension benefits.
Scheme rules together with the amendments, benefit promises as reflected through news letters to employees will help to identify the benefits to be valued.

Membership Profile:

Gratuity is a lump sum benefit provided at the time of exit- i.e. on retirement, resignation or death. They are unlikely to be deferred. The PSB obligations on the Balance Sheet and the gratuity cost in the P& L account is likely to reflect the accrued & ongoing cost of the active members only.
But in pension Scheme benefits remain in the Scheme even after the exit of members. We need information on the profile of members such as number, age, salary/pension for each categories of members - i.e. Active, deferred & pensioners, family pensioners
Information on the membership is needed over the past 3 or 4 years to understand the movement of the age, salary, benefit offered under the plan and its impact on the accrued & ongoing cost.
The data provided by the company has to be validated with salary roll to ensure consistency.

Information on Scheme administration:

We need to understand how the scheme is being administered – by establishing a separate approved Trust under Part B & Part C of Income Tax Act 1961 or an unapproved basis or managed internally by the company.
If established under the Trust, the power of Trustees to amend the scheme rules, liquidate or transfer the scheme assets, their consent/approval for the merger needs to be examined.
We also need to understand the funding objective of the scheme, the level of funding target and contributory requirements of the trustees and whether they are consistent with the accounting figures reflected in the financial statements.
How pension arrangements are provided by the Scheme – whether Pensions are purchased from insurance companies as envisaged in Rule 89 of Income Tax rules, 1962 (applicable only for approved schemes) or being paid internally.
Who is responsible for investment management – whether the company is providing the support or professionally managed by Trustees?
Trust deed, the amendments to the Trust deed, minutes of the Trust meeting, Trust accounts will provide such information

Valuation Report of Scheme Actuary: provides insight into the following information:

Benefits being valued and whether they are consistent with the benefits as per scheme rules- Actuary's approach in valuing the discretionary benefits, benefit ceiling, family pensions etc.
The data used by the actuary in the valuations, the validation checks, consistency of the data used for Pension & gratuity, it's comparison with salary roll will reflect the quality of the data.
Discussion with the scheme actuary may provide an indication on the model /method used by the actuary in valuing the benefits (cash flow model or formula based) and his approach to value the benefits ceiling (uniform accrual or accrual is truncated at ceiling)
The actuarial basis used by the actuary will indicate the prudence built into the valuation-if a separate valuation is done for accounting how does the basis compare with the funding- does the discount rates used in valuation reflect the yield on government bond of appropriate term?

Salary escalation, attrition rates, mortality/longevity rates used in the valuation are based on the company's scheme experience- if industrial trend is used in the basis to what extent they have been modified to reflect the company's experience, the margins built in the basis for Adverse deviations and random variation
Results of valuations show the PSB obligations & Accrual cost for each category of members and the recommendations of the actuary to manage the deficit.
Analysis of movement of PSB, the corresponding asset values, done by the actuary will provide insight in to the causes for the changes in surplus (actuarial gains/losses) over the valuation period.

Investment management:

Investment principles reflect company approach, its risk tolerance in managing the assets
Assets schedule – will reflect the nature & term assets backing the benefits- to what extent the benefit obligations are matched by assets - quality of assets can be checked by the credit rating-
Exposure limits for each category assets, in each sector control the concentration risk
Exposure to bonds/ equities issued by the company or its group of companies (self-investment)
Method of valuations of assets (market value or book value) to what extent provisions, NPA, investment related expenses have been kept? In case of insured funds, is there any constraints on withdrawal of funds (e.g. exit load, if any)
Investment performance of the each category assets or it is consistent with bench mark index or consistent with the investment principles of the company/ Trustees.
Results of ALM exercise indicate to what extent Assets & Liabilities are matched – such analysis will show potential liquidity risk when acquisition takes place

Potential barriers:

Powers of Trustees, power of structural companies, Regulatory/tax compliance, and consent of employees can act as potential barriers.
Scheme Rules may provide some light into the many of these issues.

[12]

iii)

Discussion on the proposal (a)
The proposal may help to finalise the deal more quickly as the disagreement on the value of the pension benefits is removed by the proposal.
But as the Company XYZ may not exist following the merger, the financing of the pension arrangement needs careful consideration

Vested Benefits

The vested benefits will remain with the Company XYZ – The benefits will have to be paid under the existing arrangement

- For e.g. if it provided under the Trust, it becomes the responsibility of the Trustees to provide the vested benefits.
- If the pension benefits are administered internally, an alternative arrangement must be established to provide the benefits. – For e.g. the parent Company of XYZ will have to take the responsibility of providing the vested benefits

In either case, the past service benefits are to be provided under a "closed scheme" and the provider of the benefits (trustees or the parent company) is exposed to all the risks associated with the closed scheme e.g. increasing age; increasing cost, challenges of ALM, etc.

Presently the benefits at retirement are based on the final salary, the scheme is exposed to the risk of (high) future salary increases offered by Company ABC and the provider will have no control over it. Therefore the benefits of active members may be given some pre-agreed future increases for which members consent may be necessary.
The Company XYZ may also explore the possibility of transferring the vested benefits to a third party e.g. an insurance company to provide the benefits as and when they fall due.

- It removes the pension liability before the merger deal – but there may be few pension providers in the market who are willing to provide quotes at a price agreeable to the Company XYZ.
- Further it requires immediate sale of assets (unless the transfer of assets is agreed) , removal of deficit to complete the deal successfully

In all the alternatives, the Company XYZ will have to decide on the future pension increases of the vested benefits – either fixed increases or no increase – in either case amendment in scheme rules is necessary.
There is a security risk of the vested benefit to the members under the proposal as no entity exists to provide finance to manage the uncertain future cost.

Future benefits:

Providing future benefits will become the responsibility of Company ABC.
Benefits can be provided under the existing pension scheme of Company ABC if benefits are similar, by integrating the two schemes;
But if the benefits are dissimilar, merging of the two schemes will be a challenge to the Company ABC.
The annual cost and the contributory requirement will also be impacted by the age, salary profile of the transferring members following merger – for e.g. if the transferring members are at advanced age, and if the pensionable salaries are significant, the annual cost to the company will increase significantly.

The funding status of the pension scheme of XYZ will be impacted by the merger.
Trustees of Scheme ABC will have to assess the impact of the proposed merger on the security of the benefits of the existing scheme ABC, unless contribution rate is worked out again after merger considering the incoming members.
For e.g. can consider ring fencing of assets, or additional financing from Company ABC, if the profile of transferring members is mature.
The future benefits of transferring members may be provided on DC basis- the rate of contribution will be uniform or age related

Other category of members
In the absence of a sponsor, the security of the Pensioners, deferred members will be at risk if the pensions are not secured by a third party arrangement e.g. annuity purchase from an insurance company.

Other issues
Amendments to trust deed, getting consent of both the Trustees and the transferring members will be a challenge.
Considering the complexities of the proposal, there is a risk that the IT authorities may not give approval to the proposal and this may jeopardise the entire purchase deal of Company ABC

[8]

iv)

a) Ways of reducing deficit (improving surplus)

Any action whereby i) there is a reduction in accrued benefits OR ii) increase in value of assets iii) both

Changes in the benefits design such as reducing accrual rate, changes in the definition of pensionable salary will have no impact on the funding level unless the benefits are revised retrospectively.

However, change in NRA may affect the value of accrued benefits also

Likewise changes in the investment strategy that aims at maximising return or minimising mismatch will impact the funding level over the future period only.

Possible ways of improving the funding level

i) Validate the data and remove any inaccuracies –this will reduce the value of the benefit or at least reduce the margin for the data error

ii) Review the valuation basis – remove the prudence built in the basis, if any

iii) Remove the global provision kept in the valuation, if any

iv) Measure assets at "Fair Value" e.g. for insured contracts collect the fund statement as at the date of transfer

v) Active asset management – book profits, if markets are favourable

vi) Inject additional contribution immediately, if due

vii) Any initiative that result in reduction in past service benefits e.g. offer transfer value to deferred members ii) offer commutation to pensioners etc., if transfer value

viii)Reduce the value of optional benefits, if any such as Commutation, Early/late pension, family pension, ROC pension etc.

[4]

b) Factors to be considered for calculating transfer value

Offering transfers to NPS may be preferred by deferred members as it will provide better security to the vested benefits (following the merger proposal).

But such transfer means conversion of pension Benefits from Defined Benefit to Defined Contribution structure.

Members will weigh the transfer value offered against the benefits given up under DC and also compare the improved security of DC accumulations under NPS arrangement.

Transfer value offered should serve the objective of the company – help to improve the funding level by removing DB benefit obligations.

Yet, it should be sufficiently attractive to the target group – deferred member

- If option is given to members – value should be sufficiently attractive so that larger proportion takes the offer
- If compulsory means fair enough to the transferring members to ensure potential legal disputes are removed.

Needs to decide to what extent the discretionary benefit increases in pension, if any are to be taken into account in the calculations

Excluding the entire discretionary benefits will be unfair but including them entirely will increase the transfer value – a balanced approach is preferable

Basis for calculating the transfer value should be on best estimate basis with no margins for prudence

Discount rates based on bond yield of appropriate term may be considered as a fair basis

Return (likely to be) earned by NPS funds may be viewed as a fair & transparent basis by the deferred members

There are several investment choices available to members in NPS. Different scenarios may therefore be considered – but this will add complexities and may mislead the members in exercising the option.

However, close to vesting may be considered 100% fixed interest securities including G Sec. Those far away from vesting may be considered higher proportion in equities. Other members a combination of the two.
Allowance for deferred members may not have any future increases in pension. However, if they have, then it may be based on retail price inflation
Allowance for mortality before vesting date may be based on a standard mortality table IALM with adjustment reflecting the expected experience of the group
Post retirement basis -Should allow for possible increase in annuity factors (if annuities are being purchased), allow for bond yield- reduction in reinvestment rates, expected improvement in Longevity, etc.

Communication:

The transfer value offered to the members should be communicated in simple terms so that they can understand the offer while exercising the option.
Information may be given to the members on

- NPS Trust and its architecture, benefit offered under the scheme
- Investment choice available to the members,
- Investment performance of the different fund managers, different fund categories, Annuity Service Providers
- Annity rates prevailing in the market etc.

Can illustrate the accumulated pension corpus available with different investment options.

Can illustrate the annuity the members will get on the Normal retirement age under different annuity options.
Can compare the annuity amounts they can expect with the deferred pension the member has given up
Can explain the improved security of the pension benefits the member, following the option.
Time limit to be prescribed for exercising the option so that transfer value is calculated & transferred to the member's NPs account quickly.
Can provide assistance in opening NPS account

[8]

v)

Combination of Life+ROC & Life pensions can be used to determine the cost of the proposed option and the resulting savings in cost.
The option provides 50 times of monthly pension on death of the pensioner. Hence we need to buy (50 x 1/171.50) a monthly pension of Rs.0.292 under the Life + ROC option.
The remaining pension of (0.750-0.292) 0.458 will have to be purchased under "Life" Pension.
The cost of a unit pension under the option will be =Rs. 116.95(0.292 x 171.50 + 0.458 x 146.00)
The cost saved per unit of pension will be = Rs.29.00 (146.00 – 117.00)
The cost saved in the pensioner category, with 50% members exercise the option = Rs.29 x 10000 x 4000 x 0.50 = Rs.580 m.

Assumptions: It is assumed that all the pensioners are of age 65 and the purchase price given in the question reflect the post retirement longevity of the pensioners

[5]

[50 Marks]

****