# Institute of Actuaries of India

## Subject SA2 – Life Insurance

# March 2022 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

**Solution 1:**

**i)**

1. Significant claims are from GTL segment which is generally in the nature of employer and employee benefit
2. We should also see if there was a sudden surge in the GTL NB in the last year or two; which has increased the base for higher claims
3. In EE groups there may be concentration of risks as well; if may want to investigate if any employer or site had high infection rate and hence more covid claims
4. Aggregation may also happen in locations where there were lack of sufficient hospital beds or oxygen provisions
5. Company need to segregate the claims which have occurred due to COVID and claims arising due to other than COVID reasons
6. However due to under reporting or lower testing it could be case that some of the claims which are not tagged as COVID have occurred due to COVID only.
7. Hence a good comparison point to assess the impact of COVID could be the expected claims that the Company was anticipating in FY22 basis its experience / best estimate assumption
8. The above will give a fair idea on the extent to loss that has been incurred on account of COVID pandemic
9. While major COVID claims are identified from GTL business, for completeness, it is important to cover in the claims experience analysis all other product categories also, which have reported COVID claims
10. These analysis may be done both of gross and net of reinsurance basis
11. In order to estimate the COVID provision, the Company will need to separately analyse the following components:
    a. IBNR of COVID deaths already occurred till YTD Sep '21
    b. Expected future claims arising from deaths occurring due to new infections
12. In order to estimate the IBNR:
    a. The Company can look at historical trend of claims delay reporting in its book
    b. Certain adjustment may need to be made if the AA is of the opinion that claim reporting delay from COVID deaths is different from what is observed usually
    c. Another reference point could be the reporting delay observed from deaths in 1st wave and use that as a basis for projection
    d. It is also observed that a large portion of the claims have come from GTL segment. Given GTL is usually sold on Employer-Employee platform, the Company may approach the various master policyholders (Employer) to get an understanding on the numbers of employee deaths in their organisation
    e. Once the Company has estimated the reporting delay basis it can use chain ladder method method or any such method deemed appropriate to estimate the IBNR provision.
    f. To project the expected claims it may do on sum assured basis or number of policies basis.
    g. If the projection is done on number of policy basis then it would need to multiply this with net sum at risk to get the IBNR number.
    h. Given the company sells both savings and protection product, it may also be worthwhile to perform the above processes for protection and savings portfolio separately as the underlying sum-at-risk could be very different.
13. The next component of the provision is Expected claims from new infections/deaths
    a. To do this the Company will need to study its COVID claims trend vis-à-vis the overall trend observed in the Country.
    b. This need to be further analysed by geographies, states etc
    c. some international trends (curves) can be used to project the progression of the disease
    d. Although as on Sep '21 the overall new infections has come down from its peak during 2nd wave the Company may want to study the current death rate in various geographies as a proportion of deaths that occurred during peak period.

e. The above proportions then can be used to estimate the expected future claims basis the Company's own geographical presence and business concentration
f. Before using the Country-wise data, the AA may want to validate if the COVID claims trend so far is similar to that observed in India or various states.
g. The AA may further analyse and estimate the provision basis its age and product mix. If the national data suggests that mortality from COVID is lower in younger ages and if majority of the mix for the Company is concentrated in lower ages then the AA may use lower mortality rate for estimation of future COVID claims
h. Another important consideration would be the period for which the provision for new claims intimations would be set aside
i. The company may use judgements while deciding on the period by giving due reference to the current trend of covid infection and / or whether AA is of the opinion to strengthen the base valuation mortality assumption
j. Another consideration would be the expected business / product mix for next few months specially w.r.t. to group term life segment
k. If the company is planning to reduce exposure to GTL segment for next few months then the same may be allowed for in the projection of claims
l. Expected rise in reinsurance costs will also need to be factored in, as extra cost of risk in the future

14. While deciding on the overall covid claims provision the Company may also factor in the overall MAD present in the valuation assumption. If the valuation mortality assumption is set at a very conservative basis then the resilience of the Company to absorb higher covid claims than estimated will be higher
15. The AA may also use his / her judgement while setting aside the provision w.r.t to any possible 3rd wave, effect of vaccination and MAD thereof.

[0.5 marks for each point; Max 14]

**ii)** Various actions / measures that may be taken are as follows:

1. Restrict / limit new business sales, specially from those business segment where the capital requirement is higher
2. Defer any one-time / additional capital expenditure until the situation improves
3. Raise sub-debts or capital to support solvency
4. Internal source of capital – re-look at some of the prudence and if there is excess then the company may evaluate to align with APS 7 requirements
5. Modify the business mix to be sold towards those segment where initial strain is lower.
6. Modify the asset mix: if the company has exposure to risky assets then the same may be reduced so as to make the solvency less volatile to any market risks
7. Re-evaluate the need for reinsurance arrangement for segment where the Company may not be having any reinsurance support currently; so as to benefit from lower capital requirement.
8. Restrict the NB in GTL business temporarily and selectively do not renew existing GTL policies (those which have contributed heavily to the adverse claims) so as to reduce the proportion of the high risk business line and reduce any geographical concentration; specially in those areas where the impact of covid has been / expected to be higher
9. Company may explore financial reinsurance arrangements so as to strengthen its capital position

[0.5 mark for each point Max 4]

**iii)**

1. Fully Paid up: The Instruments must have been issued and paid up in cash;
2. The instruments issued under these Regulations shall
    a. neither be secured

   b. nor covered by a guarantee of the Insurer or other arrangements that legally enhance the seniority of the claims as against the claims of the insurer's policyholders and creditors;
3. Maturity Period : The issue of the subordinated debt shall
   a. either be perpetual or
   b. the maturity period or redemption period shall not be less than Ten years for Life, General and Reinsurance Insurance Companies;
   c. Provided that nothing in this Regulation shall prohibit the insurer from exercising a call option under Regulation 10 of these Regulations.
4. No incentives shall be payable for early redemption.
5. The rate of dividend / interest payable to the investors may be
   a. either a fixed rate or a floating rate.
   b. The floating rate shall be with reference to a market determined rupee interest benchmark rate.
6. Interest on subordinated debt
   a. shall be charged to the Profit & Loss Account,
   b. Provided that the solvency of the Insurer remains as per the regulatory stipulations;
   c. Provided further that where the impact of such payment may result in net loss or increase the net loss, prior approval of the Authority for such payment shall be obtained;
7. Dividend / interest discretion: Cancellation of dividend distribution on servicing of the subordinated debt must not impose restrictions on the Insurer except for distribution of dividend to equity shareholders.

[1 mark for each point, Max 7]

**iv)** Key parameters / assumptions required for 5 years business plan are:

In order to construct business plan for 5 years and projection of solvency position the following parameters / assumptions would be required:

1. Expected business volume for the next fiscal year and projected growth for 4 years thereafter. In constructing the expected business volume, the following considerations may be given:
   a. What has been the new business growth over the last fiscal year
   b. Potential growth that the Company may be aiming
   c. Any tactical call that the Company may want to take in terms of curtailing the growth for a short period given the solvency ratio is on a lower side
2. Expected business mix for the next 5 years. To construct this following may be considered:
   a. Recent product mix that the Company may be writing can be a good starting point
   b. Competition – what is the business mix of other insurers of similar size
   c. Different product type may have different capital requirement. Company may factor in some short term calls in constructing the product mix so as to optimise the capital requirement.
   d. Company may have product mix in short term which is different from longer term objective given the solvency position
3. Expense levels: Projected expense levels for the next fiscal year and growth for next 4 years thereafter
   a. Given the current solvency position the Company can defer some one-time expenditure or additional capital expenditure. However, if these expenses are critical in nature given the long-term objective of the organization, then these may have to be factored in later year expense projection
   b. Assumptions regarding growth in salary level expenses, rental expenses, IT infrastructure, manpower growth related expenses need to be allowed for
4. Assumptions related to interest rate need to be factored in while projecting the solvency position:

a. Expected interest to be arrived at by looking at the yields from existing portfolio of assets and expected new money yields from future investments.
b. While existing yields would be available, assumptions on future new money rate need to be made. These can be constructed by referring to the current prevailing yields and expected asset mix. The Company may have a strategic asset allocation for various funds and the same may be referred while arriving at the expected asset mix
c. It can have a constant new money yield for all future years or can use interest rate model for projection of yields for various fixed income assets classes
d. It is advisable that the interest rate assumption is derived for each fund separately as the nature of assets and liabilities can be very different
e. The Company also sales significant volume of non-par savings product. Assumption needs to be made on the level of derivative exposure that the Company is aiming to hedge.

5. Mortality / morbidity assumptions:
   a. The Company may have to review the mortality / morbidity assumption that is being used currently in valuation
   b. Given the surge in covid claims there is deterioration in overall mortality experience for the Company
   c. Decision needs to be made whether to base the assumption on current experience using covid claims or excluding covid claims.
   d. The Company may be of the opinion that the current surge in claims is one-off and hence may want to remove the impact of this from long term mortality assumption; and instead set aside separate provision for covid claims or higher mortality assumption for next few years basis its experience
   e. It may also want to re-visit the prudence allowed for in the valuation mortality assumption
6. Persistency assumption:
   a. Persistency experience analysis need to be carried out
   b. Any variation if systematic in nature may be allowed for in the valuation assumption
   c. There could be some variation in persistency due to covid (people not able to pay premium due to job loss, lock down, etc). Judgement needs to be made whether to allow for the impact of such in its valuation assumption
   d. On the other side, people are more conscious of the importance of life cover and hence may keep their policies running, this may lead to improved persistency
7. Re-pricing
   a. Given there is loss incurred in GTL segment on account of worsening claims due to covid and uncertainty involved around 3rd or potential new wave, Company may want to be re-price the GTL segment to allow for the actual experience. The extent to any planned re-pricing of GTL schemes may be allowed for in the projection of solvency
   b. Revision in the reinsurance rates due to poor claims experience will have a heavy bearing on the repricing
   c. Retail protection: If the current rate of premium rate is not sustainable due to rising claims / increase in reinsurance rates, the Company may re-visit the premium rates if not already done. Such planned re-pricing activity can be allowed for in the solvency projections
8. Dividend payout: Given the surge in claims and capital constraint as of now, the Company may also would like to revisit the dividend pay out ratio to its shareholders (if it has been paying dividend in the past) and may instead retain some portion of it to strengthen the capital and policyholder protection
9. Target solvency ratio: While constructing the plan the Company should have a clear idea of its target solvency ratio as per its risk appetite that it is aiming to achieve and operate at. If the projected solvency is lower than the target solvency then it needs to re-visit some of the above parameters in terms of business volume, business mix, etc.

[0.5 marks for each point, Max 14]

**v)** Key risks are as follow:

1. Investment risk:
   a. Investment risk between company and policyholder under this product is not symmetrical
   b. Given that the product offers capital guarantee benefit and large portion of the investment will be in equity, the company is exposed to adverse volatility in equity market.
   c. If the equity market underperforms or crashes and the fund value falls below total premium paid by the Policyholder, then the company will have to infuse capital to meet capital guarantee commitment.
2. Profitability risk – UL products due to cap on charges do not give high profit margins as compared to traditional plans.
3. Customer need – is there any market research to know if the customers in the market actually value such products.
4. are there other players who have tried these products; would your product be better than them
5. Persistency risk: As per IRDAI (Linked Product) Regulation, 2019 there is a lock-in period of 5 years post which the policyholder can surrender the policy without any charges. Also the level of charges that the Company can levy is capped. Given this mis-match between charges and expenses that the company incurs, the Company may be exposed to risk of poor persistency wherein it may not be able to recover its expenses if the policy surrenders early.
6. System risk: Given this is the first-time company is introducing unit linked product, all systems, processes and operation related matters needs to be built. System risk can emerge in initial period like incorrect NAV computation, error in calculation shortfall, etc.
7. Sales volume risk: As the company so far been selling mostly non-par savings product, Company may be required to do significant investment in sales and sales support staff training, marketing
8. Operations risk – there will be huge training effort that will need to be undertaken of the operations staff, as administering unit linked policies is very different from the traditional plans

9. Customer grievance: in order to deliver guaranteed return of premium, the investment team of the company may take a cautious approach by investing in higher allocation to fixed income securities. This may result in lower return and may not be as per expectation of the policyholder who would be investing with the objective of maximising return.

10. As this product offers capital guarantee the Company may levy COG charge which can result in lower maturity value compared to any other unit linked product and may not go well with the customers.

11. Mis-estimation of parameter risk: given the guaranteed nature of the product, there is a risk of mis-estimation of risk leading to incorrect pricing and financial losses. Moreover given the charges under linked products are capped by regulation, the priced charges may not be sufficient to cover the capital guarantee benefit offered under the product.

[0.5 mark for each point, Max 5]

**vi)** Method for calculation of COG is as follows:

1. GN 22 recommends use of stochastic model for estimation of COG

2. AA may however make use of alternative methods, including deterministic method to quantify the COG
3. The recommended method is to estimate the market consistent or fair value of the embedded derivative. Simulation technique is often required though in simple cases closed-form solutions may be implemented
4. Asset model:
   a. Investment return for various asset classes backing the fund value need to be modelled
   b. Where market consistent method is being modelled using risk neutral approach, the AA must e able to justify the rates of risk free return and the volatility assumed for different underlying asset classes.
   c. Model and associated parameters should be appropriate for the given linked product, internally consistent and where appropriate, based on the most recent market data. Volatility assumption should, wherever possible, be based on those implied from derivative pries rather than the historical observed volatilities of the underlying instrument it should be based on most recent available information as at the calculation date
   d. AA must be able to justify the model chosen and its calibration
5. Liability model: AA should take into account likely future policyholder behaviour and the extent to which it is correlated with the value of guarantee.
6. ESG should be used to generate a set of simulation outputs
7. For each simulation:
   a. For each representative model points, the fund value is projected at the simulated investment returns.
   b. The projected fund value may be calculated based on best estimate of all future parameters
   c. For each model points the projected fund value at maturity is compared against the sum of premiums paid. If the fund value is lower than return of premium then a shortfall is recorded.
   d. This shortfall at maturity is discounted to quantify the cost of guarantee.
   e. The above needs to be repeated for all simulations
   f. The average of these would be the expected cost of guarantee

[0.5 mark for each point, Max 6]
**[50 Marks]**

**Solution 2:**

**i)**

i. The IRDAI (Non Linked Insurance Products) Regulations, 2019 prescribes the regulations for designing of the conventional participating life insurance products.

ii. Par products shall be as defined in the IRDAI (Actuarial Report and Abstract for Life Insurance Business) Regulations, 2016 and can be offered only under non-linked platform.

iii. Under the par products, the bonus accruals during the term shall be as follows:
   - Regular bonus shall be declared only on an annual basis;
   - Interim bonus shall be declared at the annual valuation period, which shall become payable during the inter-valuation period.
   - Terminal bonus or other forms of bonus, if any, shall become payable on the specified events or at the end of the term of the policy.
   - In case of par products, the maturity benefits shall closely reflect the asset share.

iv. For participating life insurance products, the minimum Sum Assured on death during the entire term of the policy shall not be less than 7 times the annualized premium, for limited

or regular premium products, and 1.25 times the single premium for single premium products.

v. Further, for other than single premium products, the minimum death benefit shall be at least 105% of the total premiums received up to the date of death.

vi. In addition to the sum assured on death, the bonus and additional benefits as stated in the policy and accrued till the date of death shall become payable on death as part of the death benefit, if not paid earlier.

vii. The provision of minimum death benefit shall not be applicable to reduced paid-up policies.

viii. The insurer may pay such death benefit in lump sum or in instalments as per the terms & conditions of the policy contract.

ix. The minimum policy term shall be at least 5 years.

x. For other than single premium products, the premium paying term shall not be less than 5 years.

xi. The maximum commission / renumeration to intermediaries for single premium participating life policy is capped at 2% of single premium.

xii. For regular premium individual participating policies, maximum first year commission / renumeration ranges from 15% to 35% depending on the premium payment term of the policy.

xiii. The maximum renewal commission is 7.5%.

xiv. The premium chosen at the outset of a policy shall become payable throughout the premium paying term of the policy. Such premium shall be level or uniform and shall not vary over the term of the policy subject to the below condition.

xv. After payment of premiums for first five completed policy years, the policyholder may be given an option to decrease the premium up to 50% of the original Annualized Premium, subject to the minimum premium limits under the product of the insurer. Once reduced, the premium cannot be subsequently increased. Benefits may be revised subject to the minimum death benefit. Sustainability of the policy due to reduction of premiums shall be demonstrated under product filing procedure.

xvi. If all premiums have been paid for at least two consecutive years, the policy shall acquire a guaranteed surrender value, to which shall be added the surrender value of any subsisting bonus and any guaranteed additions already accrued to the policy.

xvii. The minimum guaranteed surrender value shall be the sum of guaranteed surrender value and the surrender value of the any subsisting bonus and any guaranteed additions already attached to the policy.

xviii. For other than single premium policies, the guaranteed surrender value shall be at least:

- 30% of the total premiums paid less any survival benefits already paid, if surrendered during the second year of the policy, and
- 35% of the total premiums paid less any survival benefits already paid, if surrendered during third year of the policy

- 50% of the total premiums paid less any survival benefits already paid, if surrendered between the fourth year and seventh year of the policy, both inclusive.
- 90% of the total premiums paid less any survival benefits already paid, if surrendered during the last two years of the policy
- The surrender value beyond the seventh year shall be filed by the insurer under the product filing procedure. Such surrender value shall follow a smooth progression and converge to at least 90% of the total premiums paid less any survival benefits already paid, as the policy approaches maturity.
- Surrender value of any subsisting bonus and any guaranteed additions already attached to the policy shall be stated under the product filing procedure.

xix. For single premium products, the guaranteed surrender value shall be at least:

- 75% of the total premiums paid less any survival benefits already paid, if surrendered any time within third policy year.
- Subject to (iii), 90% of the total premiums paid less any survival benefits already paid, if surrendered in the fourth policy year.
- 90% of the total premiums paid less any survival benefits already paid, if surrendered during the last two years of the policy.
- The surrender value beyond the fourth year shall be filed by the insurer. Such surrender value shall follow a smooth progression, and converge to at least 90% of the total premium paid less any survival benefits already paid as the policy approaches maturity.
- Surrender value of any subsisting bonus already attached to the policy shall be approved under the product filing procedure.

xx. Higher of guaranteed surrender value and special surrender value would be payable in case of surrender.

xxi. Every such policy shall show the guaranteed surrender value of the policy at the close of each year after the second year of its currency or at the close of each period of three years throughout the currency of the policy in the policy document.

xxii. A policy which has acquired a surrender value shall not lapse by reason of the non-payment of further premiums but shall be kept in-force to the extent of the paid-up sum assured and the subsisting reversionary bonuses including guaranteed addition, if any.

xxiii. This provision is in accordance with the provisions of Regulation 3(b)(iii) of IRDAI (Acquisition of Surrender and Paid Up Values) Regulations, 2015 as amended from time to time.

xxiv. The special surrender value shall represent the asset share in case of the par policies, where the asset share shall be determined in accordance with the guidance or practice standards issued by the Institute of Actuaries of India.

[0.5 mark each, Max 10]

**ii) Marketability:**

i. The minimum guarantee on reversionary bonuses for half of the policy term may appeal to the target market and hence improve the marketability of the proposed product.
ii. Requirement to pay premium only once may make this product attractive.
iii. But restrictive for customers who can’t afford to pay single premium for 20 years cover
iv. Also, the minimum single premium requirement of 1 lakh may limit the target market of this product.
v. Having just one policy term (20 years) and only single premium option may make the product less marketable.
vi. Also, restrictive age of 18 to 40 years will render the product not marketable to customers below and beyond this age range.

**Suitability to meet customer needs for defined target market:**

vii. The product is targeted at individuals aged 18 years to 40 years which may be a good target age group for a saving product.
viii. However, younger age group people may not have financial ability to pay single premium of at least 1 lakh as they may be in the early stages of their career.
ix. They are also best suited for encouraging regular savings
x. Also, the product is missing the customers who are above 40 years and would be wanting to save for child education, etc.
xi. The product has fixed policy term of 20 years. This may limit the sale of this products.
xii. For example - For an individual aged 40 years, the maturity proceeds would be available at age of 60 years. But individual aged 18 years would get maturity proceeds at age of 38 years at which time he / she may not want it.

**Taxation:**

xiii. The death benefit is at least 10 times of single premium, so the product is tax compliant.
xiv. This would make this product more marketable than other single premium products which are not tax compliant.

**Competitiveness:**

xv. Need to check the products available with the competition; does having restrictive policy term and premium mode make it less competitive in the market

xvi. The proposed product needs to be tested on expected return to the policyholder under various assumed rates of interest to check the competitiveness of the product.

xvii. The death benefit as 10 times the single premium would lead to higher portion of premium going towards serving death benefit and thereby lesser premium being available for savings.

xviii. For those not wanting the tax benefit, no option to have less than 10 times cover can make the product less competitive.

xix. This would decrease return to customer when compared between premium paid and maturity benefit received.

**Distribution method and renumeration:**

xx. It is given that the conventional participating endowments is the major contributor to the topline. That means, intermediaries are generally conversant with selling these types of products.
xxi. The commission/ remuneration under this product payable to insurance agent/ insurance intermediary would be capped at 2% of single premium.
xxii. The lower level of commission may lead to distributors / intermediaries being not encouraged enough to sell this product.
xxiii. Being single premium, premium has to be paid only at the start of the contract. The intermediaries won't have to focus their efforts on renewal premium collection.

**Profitability:**

xxiv. Profitability needs to be tested for various model points under various scenarios and compared with Company's internal criterion. Being a par product the shareholder profits can be limited by the 1/9 of the surplus allocated to policyholders. High guaranteed reversionary bonuses in the initial years means high profit distributed initially.

xxv. Higher guaranteed benefits may also mean less surplus arising; leading to lower shareholder profits. Also guaranteed reversionary bonus means, there is less room for managing the downside of interest rate risk;

**Sensitivity of profit:**

xxvi. Sensitivity of profit needs to be carried out on changes in interest rates, mortality, expenses, withdrawals, etc.

**Financing / capital requirements**

xxvii. The guaranteed bonuses may increase the reserve requirement and hence capital requirement.

xxviii. Business projection of this product needs to be carried out to understand the capital requirement and how they can be financed.

**Onerousness of any options or guarantees:**

xxix. For the first 10 policy year, the bonus rates are guaranteed to be at least equal to 4% of single premium. The cost of this guarantee needs to be calculated. Since all the premium is collected upfront, the guarantees can be managed better by locking into suitable assets. There should be less risk of reinvestment as for regular premium products

**Administration systems:**

xxx. This product has guaranteed reversionary bonuses, systems need to be modified to allow for this if the earlier products didn't have guaranteed bonuses.

xxxi. The guaranteed reversionary bonuses are expressed as percentage of single premium which is uncommon for conventional participating products.

xxxii. Administration system needs to be modified to allow for this.

**Service standards**

xxxiii. The company has been selling conventional participating products and the servicing requirement of this product is not expected to be different from the products company has.

**Treating customers fairly:**

xxxiv. The guaranteed bonuses may lead to PRE being formed for bonuses from 11th policy year to 20th policy year. The company should consider this.

xxxv. It may also set PRE for policyholders of other par products; it can cause resentment among them. This product will be managed as part of the same Par fund; Need to ensure the guarantee is not subsidized by other par policyholders

xxxvi. Sales literature, benefit illustrations and policy documents shall clearly reflect that the bonuses are guaranteed as 4% of single premium for first 10 policy years only.

xxxvii. The company will need to ensure that the premium rates and overall product design are fair to the customers.

**Underwriting philosophy:**

xxxviii. The product has higher death benefit than other single premium policies, so the underwriting guidelines needs to be decided separately for this product.

**Level of risk**

xxxix. The product has higher mortality risk due to higher death benefit. However, being a participating product, this risk is shared with the policyholders.

**Reinsurance terms and capacity:**

xl. Higher death benefit may require reinsurance support.

xli. Reinsurance arrangements would have to be appropriate for this product and shall be in best interest of participating policyholders.

**Extent of cross subsidies:**

xlii. This being a participating product, the policies would participate in the profit and loss of participating life fund so the extent of cross subsidies need to be considered.

**Company reputation**

xliii. The guaranteed bonuses for 10 policy years may be construed as guarantee for the whole policy year. In such case, it would lead to customer complaints and thus impact company's reputation adversely.

xliv. Proper training should be given to intermediaries to explain this clearly to customers.

**Legal and regulatory constraints:**

xlv. The product design needs to be in compliance with various regulations and legal requirements.

[0.5 mark each, Max 15]

**iii)** Pros:

i. Reversionary bonuses once declared becomes guaranteed and accordingly with each policy year the amount of guaranteed benefit keep increasing.

ii. This requires adoption of a more conservative investment strategy.

iii. While in case surpluses are to be distributed only through terminal bonus, the level of guarantee is lower.

iv. The low guarantee may improve free assets and thereby would increase investment freedom.

v. It would also help Company to manage its capital position.

vi. The greater investment freedom allows more investment in assets with higher risks and higher expected returns.

vii. This may result in potential higher benefits to the policyholder.

viii. Use of only terminal bonus in surplus distribution more readily facilitate the equitable treatment of policyholders.

ix. The rates of terminal bonus can be set so as to maintain the desired level of equity between different cohorts under this product.

Cons / challenges:

x. The policyholders will not know till the maturity (end of 20 years) what the maturity benefits will be.

xi. Hence, policyholders may not like this product

xii. Also, declaring only terminal bonus will lead to greater volatility in the proceeds unless a very smoothed approach to terminal bonus is adopted.

xiii. As the Company has been declaring reversionary bonuses under its other participating products, so the policyholders would generally expect the Company to follow same practice.

xiv. Surrendering policyholders will get the present value of their Sum assured, since no bonuses are declared during the policy term; they are not likely to get a fair share of the bonuses due to them; unless TB is declared even for surrendering policies. This may not be the normal practice

xv. Thus, distributing surplus only through terminal bonus may impact sales level adversely.

xvi. Competition may not be doing this; in which case the distributors and customers are likely to be confused

xvii. Generally, the terminal bonus is expressed as percentage of vested reversionary bonuses.

xviii. If the Company has been following this practice, then it would have to find a new way to express terminal bonus under this proposed product as vested reversionary bonus would not be applicable here.

xix. This would require system changes and training to employees & intermediaries.

xx. This being a proprietary company will be concerned to maximise the transfers that it can make to shareholders.

xxi. Maximisation of shareholder transfers implies deferring the emergence of surplus as little as possible, as the rate of return required by shareholders will usually exceed the rate at which undistributed surplus accumulates within a life insurance company.

xxii. Distributing surpluses only through terminal bonus would mean that Company's profit for first 19 years would be significantly reduced.

xxiii. The profit margin of this product may not meet the required criteria.

xxiv. The regulator may not accept; as they may not find it customer centric move.

[0.5 mark each, Max 10]

**iv)**

i. Operational risk can be described as the risk of loss, resulting from inadequate or failed internal processes, people or systems, or from external events.

Conduct risk

ii. The Company is dependent on intermediaries to sell its policies.

iii. This exposes the company to increased Conduct risk.

iv. To manage conduct risk, the Company can have a robust framework to enable it to deliver fair customer outcomes.

v. Customer complaints data can be analysed to identify high-risk intermediaries for conduct risk.

vi. These high-risk intermediaries can be monitored through analytics and risky incidents could be flagged.

vii. Predictive modeling can also be used to identify potential misconduct and appropriate actions can be taken to prevent these.

Model risk

viii. The Company is dependent on various models to calculate the premium, show illustrations, value the liabilities, etc.

ix. Model risk arises if the company uses model's results by without knowing that these results are either wrong or are not sufficiently accurate or appropriate for the intended purpose.

x. This can lead to wrong premium being charged to customers, wrong bonuses declared, etc.

xi. It may be possible that the model used has fundamental errors and so gives inaccurate outputs

xii. Or, the model is used incorrectly or inappropriately

xiii. Model risk can be managed by having a strong culture of checking and documentation of all models, supported by the compliance or internal audit function.

xiv. The owners of model approve the methodology of a model and ensure that the testing of the model is adequate to evidence that the model performs as expected.

xv. Model assumptions, limitations and expert judgement are reviewed to ensure that they are appropriate for the specific application of the model.

xvi. Models are regularly validated to ensure that their use remains appropriate. Validation should also be repeated when material changes occur.

xvii. Regression testing can also help to understand that there are no unintended changes.

Unit Pricing error

xviii. The company sells unit linked policies, so it is also exposed to errors in the NAV calculation of units.

xix. The way in which compensation for errors in unit pricing is determined is also a risk.

xx. Also, there could be some errors in deduction of various charges under unit linked policies due to failure of Company's system.

Other operational risks

xxi. IT failures due to cyber incidents like ransomware, etc. The Company can purchase cyber risk insurance.

xxii. Damage to Company's physical assets from catastrophic events. The company can purchase insurance for damage to physical assets.

[0.5 mark each, Max 10]

**v)**

i. During the pandemic, intermediaries would have to rely on video call or other alternatives to interact with the customers for the sale of policy. This may lead to increased possibility of miscommunication resulting in customers not understanding the risks under the policy.

ii. As the staffs are working from home so there is increased possibility of delay in completing policy servicing request like switching of funds, change of address, etc. This may lead to poor service standard and unhappy customers.

iii. In WFH setting, systems and confidential information that earlier can be accessed only in office can now be accessed remotely.

iv. This may lead to increase in the possibility of data breaches particularly if the company networks are not designed to work within VPN including multi factor authentication.

v. Many employees may not have laptops or desktops at their home; IT department will have to get at a short notice a number of machines, configure them and provide access to such employees.

vi. Further any repair, maintenance will have to be managed remotely.

vii. To complete one's work employee are dependent on the internet connection they have. Failure of internet connection at home / remote place of work can cause delay of deliverables

viii. With staffs working from home, it has become challenging for managers to supervise them thereby increasing conduct risk and productivity issues

ix. Teams which have to access the policy admin system like operations, underwriting, policy servicing; IT has to ensure there is no data security breach or data thefts

x. All approvals will have to be done through the system; documents which earlier required physical signatures, will need to be digitally signed. Security of such authorization should be safe and strong.

xi. The company is dependent on intermediaries to sell its policies. Intermediaries' infrastructure and business continuity plans may not be as robust as desired. This may lead to lesser sales.

xii. The Company can update its current control mechanism to ensure continuity of business from the intermediaries.

xiii. Earlier, business continuity plan was focused on disruption at office or its infrastructure.

xiv. Now in WFH setting, business continuity plans need to be updated to include disruptions at employee's residence / remote place of work.

[0.5 mark each, Max 5]
**[50 Marks]**

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