

Institute of Actuaries of India

Subject SA3 – General Insurance

September 2018 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: Motor premium flexibility

- i. Benefits
 - a. It will allow greater flexibility to the underwriters to charge different rates across the portfolio. Compared to 15% loading or discount on a filed rate for a risk, there is a much larger variation in rates possible. The flexibility can be used to:
 - Target a new customer segment
 - Run experiments / pilots on various customer segments to find out the correct price
 - b. In the file and use scenario, any change in premium rate structure would have taken longer time to implement due to the approval process. Due to flexibility allowed, any change in the premium structure can be done at the will of the company.
 - c. As only the pricing assumption loss ratio needs to be filed, the filing process becomes much easier compared to the earlier process.
 - d. Using the flexible rates, a company can give authority distributors to charge different rates to customers depending on paying capacity, tendency to shop around etc.
 - e. Due to single-role responsibility of the loss ratio, the loss ratio of the motor segment may become more consistent across insurers in the industry
 - f. Some companies who have better data capture mechanism and ability to ask more questions, may be able to capture the better risk segments of the market more efficiently.

- ii. Challenges
 - a. If a company implements the fully flexible rate with underwriting authority decentralized (given to branches or junior underwriters), it will lead to lack of control of the appointed actuary on the premium rates charged.
 - b. As there is no review and approval of the rates charges, the market may behave irrationally which may lead to the segment being unprofitable.
 - c. It may be difficult to isolate the reasons of higher than pricing assumption loss ratio and describe the corrective actions to regulator
 - d. Getting a proportional reinsurance may become difficult as the reinsurers may feel that there will be lack on underwriting control
 - e. Loss ratio definition is not clear – whether it is underwriting year, accident year or financial year
 - f. Companies may manipulate reserves or close claims at the end of the fin year
 - g. For some claim types such as TP, it may take a long time for the true loss ratio to emerge. Companies may tend to under-reserve
 - h. Loss of objectivity in charging premium rates to like-to-like risks
 - i. Loss ratio may become very volatile, depending on how it is implemented
 - j. Some companies may not have systems to be able to implement it
 - k. A company which does not capture the relevant risk factors, may not be able to fully exploit the flexibility.

[6 Marks]

Solution 2: Motor loss ratio reasons

- i. There could be multiple reasons for this scenario which could be explained by a combination of the following. The impact of each of these in isolation / absolute terms may or may not be possible to determine.
- ii. It could be a result of **wrong pricing** by ways of
 - a. Lower than average market price across all segments
 - b. Wrong pricing structure where the premium was lower in the higher claim cost segments and the market selected against the insurer such as
 - Geography
 - Make-model
 - Age of the vehicle
 - Coverage type (OD vs TP, add-ons)
 - Vehicle type
 - NCB level etc.
- iii. Poor **underwriting control** such as
 - a. Even though the filed premium rates were fine, the final prices used by the underwriters might have been lower due to poor underwriting controls.
 - b. Some types of vehicles such as break-in coverage was not underwritten properly
 - c. Underwriting authority delegation matrix might not have been adhered to for example, higher discounts were passed on by junior underwriting staff without approval.
- iv. **Reserving**
 - a. The company may have held more reserves than market over time
 - b. Or the reserves might have been increased during the year which impacted the loss ratio for the FY17-18. This could have been due to
 - Change in reserving practices for outstanding claims such as default reserve amount
 - Change in reserving method for IBNR
 - Increase in reserve prescribed by the regulator or the peer reviewer
 - Change in prudence margin kept
- v. **Claim management**
 - a. The company couldn't manage claims as good as the market such as not enough discounts negotiated with the garages
 - b. Fraud claims management was not up to the mark leading to more fraud claims compared to market
 - c. Garage induced claims inflation (such as parts replacement where repair could have been done) was not checked appropriately
- vi. **Affected by large claim**
 - a. There may have been a catastrophe event in an area where this company has disproportionate exposure compared to the market
 - b. The whole market might have faced a catastrophe claim but this company may not have an appropriate reinsurance in place which resulted into a higher net loss ratio
- vii. It might have been a **conscious management decision** to price the product at a higher loss ratio due to
 - a. Aim of capturing market share

- b. Lower management expenses ratio for the company due to large volume
- c. Lower distribution cost for the company due to a different distribution model compared to the market

[8 Marks]

Solution 3:

- i) Internally establish a comprehensive fraud risk governance framework with procedures and protocols to identify and deal with potential areas of fraud.

Train agents, employees etc. and inculcate a zero tolerance to fraud environment as a part of your internal code of conduct and ethics policy.

Have a dedicated fraud management team employing data analytics and predictive modelling to identify suspicious patterns and early indicators of fraudulent activity.

Enhance data analysis and have a reasonably adequate percentage of submitted claims investigated by this team. The percentage of claims examined should be continuously monitored with growth of the book and changing trends in claim patterns.

Conduct internal audits and periodic inspections of areas identified with a higher vulnerability to fraud.

Share data with other insurance companies to screen policyholders' claim history from a consolidated database or identify repeated fraudsters or existence of dual coverage.

Put in place stricter underwriting standards...

...careful scrutiny of information provided on proposal form, medical questionnaire etc.

...verify prior claim history of policyholder including accidents and claim records for vehicle and driver(s) and medical conditions / disease history for insured

...tighten policy wording or T&Cs e.g. require police report / FIR for motor accidents, medical evidence from recognised professionals, original receipts for medical treatments and tests

Have well documented claim handling procedures with strong internal checks...

...cross check dates of accident and dates of policy cover

...look for multiple claims from different named claimants with same address, contact details etc.

...spot checks on unusual sized claims

...cross verify information from claimant with independent sources, where possible e.g. witnesses or video footage for motor accidents

Send out loss surveyors / claim assessors for verifying true extent of damage to the vehicle.

Appoint designated repairers or authorised service centres for vehicle damages.

Employ medical professionals to verify test reports and correlate treatments undertaken with identified disease or medical condition.

Restrict cashless cover to pre-approved hospital networks and medical practitioners only and provide reimbursement to non-network hospitals after detailed scrutiny.

Implement better training (with continued refreshers) of underwriting staff and claim handlers to spot fraud early on.

Spreading public awareness around rejection of claims with exaggerated damages, inflated medical bills or false motor repair invoices...

...and potential cancellation of cover if sought fraudulently by deliberately concealing or misrepresenting material facts e.g. concealing NCB, providing fake documents, staging car thefts/accidents, not sharing details of pre-existing diseases etc.

Sensitising public of the potential legal repercussions of committing or abetting fraud such as staging occurrence of loss events or claiming fictitious damages.

Liaise with law enforcement and judicial authorities to make them aware of fraud and solicit their support in swift action being taken in established fraud cases.

Publicise cases where policyholders have been prosecuted for fraud so that offenders do not repeat and it serves as a warning for others.

Lobbying for stricter laws and penalties towards fraudsters that can act as precedents and deter future misuse of insurance cover.

Report fraud cases to the regulator / insurance authority.

Invest in technology such as voice analysis systems to detect lies over telephone calls made to report claims.

Encourage public to anonymously report fraudsters by setting up confidential phone lines. [10]

ii) Let the random variable X denote the claim amount on motor policies for next year.

So, $X \sim \text{Lognormal}(\mu, \sigma^2)$ with $E(X) = e^{(\mu + \frac{1}{2}\sigma^2)} = 750$ and $V(X) = e^{(2\mu + \sigma^2)}(e^{\sigma^2} - 1) = 1500^2$

Solving, $\sigma^2 = \ln(5) = 1.6094$ and $\mu = 5.8154$

Under proportional RI...

Ceded premium = 70% x (10,000 x 1,000) = 70,00,000

Ceded losses = 70% x (8,000 x 750) = 42,00,000

Ceded loss ratio = 60%

Under XOL RI...

Ceded premium = 45,00,000

Ceded expected claim amount

$$= \int_{800}^{\infty} (x - 800)f(x)dx = \int_{800}^{\infty} xf(x)dx - 800 \int_{800}^{\infty} f(x)dx = I_1 - 800I_2 = 343.20$$

$$I_1 = \int_{800}^{\infty} x \cdot \frac{1}{x\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{\ln x - \mu}{\sigma}\right)^2} dx$$

$$\text{Let } u = \left(\frac{\ln x - \mu}{\sigma}\right) - \sigma$$

$$I_1 = \frac{1}{\sigma\sqrt{2\pi}} \int_{\left(\frac{\ln 800 - \mu}{\sigma}\right) - \sigma}^{\infty} e^{-\frac{1}{2}u^2} \cdot e^{\left(\mu + \frac{1}{2}\sigma^2\right)} du$$

$$= \left[1 - \Phi\left(\frac{\ln 800 - \mu}{\sigma} - \sigma\right)\right] \cdot e^{\left(\mu + \frac{1}{2}\sigma^2\right)} = [1 - \Phi(-0.58)] \cdot 750 = 539.28$$

$$I_2 = P(X > 800) = P(\ln X > \ln 800) = P(N(\mu, \sigma^2) > \ln 800) = \left[1 - \Phi\left(\frac{\ln 800 - \mu}{\sigma}\right)\right]$$

$$= [1 - \Phi(0.69)] = 0.2451$$

Ceded losses = 8,000 x 343.20 = 27,45,600

Ceded loss ratio = 61%

XOL has a higher ceded loss ratio so it results in greater recoveries per unit of RI premium paid. Hence, XOL is more beneficial than the proportional cover to Pioneer Insurance Company. [6]

iii) Let the required ceded percentage for the proportional cover be R%

Average net claim amount for Pioneer:

Under proportional RI = (1 - R%) x 750

Under XOL cover = 750 - 343.20 = 406.80

Equating the two, R% = 45.76%

[2]

- iv) Revised proportional cover at R% i.e. 45.76% ceded and the original XOL cover both result in the same average net claim amount for Pioneer.

The total ceded losses under both RI covers would now be the same. This would come at the original cost of Rs.45,00,000 for the XOL cover and at a revised cost of Rs.45,76,000 for the proportional cover. Hence, XOL is more beneficial to buy for Pioneer as it comes at a lower premium to cede to the reinsurer.

OR

The ceded loss ratio for the portfolio under proportional cover would remain the same as the gross loss ratio for Pioneer as the same share of premiums and losses is passed on to the reinsurer. So the revised R% does not change this from the original 60%. Ceded loss ratio under XOL cover is 61%. So the XOL cover gives more recoveries to Pioneer per unit of RI premium paid (same rationale as outlined in solution to part a.)

OR

We could estimate the variance in retained claim amount for Pioneer under both covers and compare the results. XOL is preferred by insurers who would like lower variance in their net claim amount, even if the mean retained claim amount is the same.

With proportional RI, the insurer and the reinsurer share pro-rata the same claim experience. However, with XOL the claims are truncated by the insurer and the more variable higher share of claims is passed on to the reinsurer. [2]

- v) Cyber cover for online identity theft can cover costs incurred by the policyholder as a result of a third party stealing/deleting/altering his online identity to enter into a contract or conduct a financial transaction. This includes the financial loss incurred and defence costs following a claim by an affected party. It may be extended to additionally cover legal costs to prosecute the fraud third party.

Cyber insurance for virus or malware attacks can cover losses arising from an infected program downloaded or received in email or transferred through a corrupt file etc. that can damage the policyholder's computer system or other digital devices by corrupting or deleting data, slowing speed etc. The policy would offer damages for restoring data on the computer system or rebuilding the website and associated costs of business interruption. Coverage may be extended to include damages and associated legal costs following negligently transmitting the virus to a third party.

Cyber cover for attacks by hackers can cover losses following a hacker managing to take control of your computers and stealing sensitive data or making confidential information public or sending out spam emails on your behalf or threatening to do so if the demanded ransom is not paid. The policy will cover any extortion loss incurred by the insured, damages to repair or rebuild the online systems and websites,

remedial legal costs, costs of informing affected parties or general public of a hacker attack, costs of defending any claims from affected parties, costs of investigating the security breach, costs of prosecuting the hacker, resultant business interruption losses etc.

Cyber coverage for phishing provides cover for financial losses following a disguised attempt over email by an attacker masquerading as a trusted entity, to steal your personal and sensitive information such as credit card number, bank details or account passwords. It may also cover prosecution costs against the phisher.

[4]

[24 Marks]

Solution 4:

- i) In most cases of minor injuries the claimant or even both parties to the legal action would want a single lump sum payment to close the matter as early as possible. Even for major accidents resulting in the claimant requiring care and treatment for life due to permanent damage or serious injuries, there would be a need for an initial lump sum payment followed by periodic payments. Mandating settlement of all bodily injury claims by a series of regular payments irrespective of their size and requirement or desire of the claimant therefore, may not be practical.

Company ABC has a significant motor book. An important part of its loss reserves will be in respect of bodily injury claims. The regulation introduces new risks and uncertainties around the size and term of payments.

To assess damages from serious bodily injury, medical experts will need to adjudge the expected lifetime of the claimant. This is not entirely predictable and it will be a long time until we would know how correct the estimated future life expectancy of claimants on an average is.

Mortality rates available are in respect of the standard population and there is little available data and actuarial research done on measuring impairment to life expectancy from major accidents causing say, brain and spinal injuries.

The impact of such traumatic accidents on future life expectancy is also likely to vary with the existing age of the claimant. Payments to young claimants could be for a longer duration as they may have a better chance of complete or partial recovery with medical advancements taking place over their lifetime.

This makes the longevity risk for bodily injury claimants unusual and exposes general insurance companies and its actuaries to a relatively unfamiliar area of assessing life contingencies. There is the risk of:

...the base mortality rates for a claimant as of now being incorrect

...expected future mortality changes – improvements with cures or new treatments, declines with pandemics or antibiotic failures, being estimated incorrectly

...volatility in terms of actual individual lifespans being longer or shorter from the anticipated average life expectancy.

Not all bodily injury claims result in life-changing injuries that make the claimant need care for the rest of their lives. The duration of payments in case of small claims from minor accidents will be shorter until the claimant has fully recovered and is declared medically fit after the accident. We will again need to rely on medical expertise to estimate the payment term in such cases.

It is not clear how the series of payments are to be computed. Transforming the traditional lump sum compensation into a series of regular payments introduces a lot of variability around the calculation methodology and assumptions such as duration and discount rate.

Long durations subject the company to inflation risk which in turn adds to the uncertainty around the size of payment. This includes...

...medical inflation to reflect the rising costs of medicines and medical treatments/procedures

...wage inflation to compensate claimants for loss of earnings

...judicial inflation following a higher than usual court-award for a certain type of injury

...retail inflation with rising expenses of cost of living.

The discount rate used to calculate the periodic payments could be prescribed by the regulator based on what the claimants are reasonably expected to earn on an investment portfolio without risk, protecting against inflation and market volatility. The intent here being for the payments to place the claimants in same financial position as they would have been if not for the accident.

The prescribed rate could be very different from what the insurance company would be earning on its otherwise low-risk, low-volatility asset portfolio held to cover shorter term liabilities.

ABC General Insurance Company will now have extra long-term liabilities on its book from bodily injury claims. This introduces investment risk as it will need to alter its investment portfolio to include assets to match the long-term liabilities akin to life insurers. Its balance sheet will change with part of it becoming more like a life insurance company's balance sheet.

Liabilities associated with young claimants may not run-off for many decades. This could be well beyond the duration of the longest dated fixed interest assets available. This introduces re-investment risk - the uncertainty surrounding the price of assets when you need to re-invest matured assets in the future.

Then there is the risk of claim payments being higher than expected and higher than the returns the company can receive on its investments.

Including new assets increases exposure to existing or introduces new market risks for the company. Typical assets to match long-term real liabilities would be equities and property which are very volatile in nature thereby introducing additional market risk in the portfolio.

The volatile market values of such assets will also have a potential impact on solvency and capital requirements for company ABC.

Long-term nature of bodily injury liabilities also makes the length of exposure to counterparty default risk longer. There is an increased risk of reinsurer failure over the lifetime of payments resulting in significant credit risk.

It also subjects company ABC to volatility in credit ratings of reinsurers over a prolonged time period which will in turn have a potential impact on its regulatory capital requirements.

Increased uncertainty associated with longevity risk, inflation risk, investment risk, market risk, credit risk etc. gives rise to a higher capital cost for the company.

Another challenge that may emerge could be in respect of reinsurance for bodily injury claims which may be unavailable or too costly to obtain or available at unfavourable terms and conditions to Company ABC.

There would also be operational challenges and increase in associated expenses due to...

...administration over long time periods until claim settlement

...increased costs of claims handling

...modifications required to IT systems and processes

...training and/or hiring costs for resulting changes from the new regulation.

This also raises operational risk due to a greater chance of error and/or failure as new systems, people and processes get embedded in the company's day to day operations.

Other challenges for ABC General Insurance Company would be in respect of:

...scarcity of appropriate data for analysis

...complexity of analysis – actuarial reserving, pricing, capital assessment

...model and parameter risk

...changes to accounting and/or increased reporting requirements.

[22]

- ii) Provisions are discounted, where permitted by regulation, to show them at their present value. At the end of an accounting period, the discounted value of the provision would have typically gone up (assuming a positive discount rate) thereby increasing the reserve but this is countered by investment income earned on the opening balance of the provision. This is called 'unwinding of the discount'.

The insurer should record the investment return associated with unwinding of the discount in any accounting period under the headings for investment income or gains in the profit and loss account and should not credit it directly to claims incurred. It should make separate disclosure of the amount of the investment return that corresponds to this unwinding of the discount.

Series of regular payments for bodily injury claims will take a very long time to pay and fully settle. So the liability builds from the time they are granted and increases due to both inflation and unwinding of the

discount rate, while other reserves for lump sum claim payments simply roll over and grow only with inflation.

[4]

[26 Marks]

Solution 5: Crop insurance

i) Details of scheme

a. Product and coverage

- Covers khareef, rabi, commercial and other crops such as horticulture
- The coverage is from the sowing to the after cutting in two seasons (for khareef and rabi) or otherwise (for commercial crops)
- The perils covered are
 - Area approach: all non-preventable natural risks viz., drought, flood, hailstorm, landslide, cyclone, pests & diseases etc.
 - Prevented sowing/transplantation: all natural preventable risks
 - Localized perils: Hailstorm, landslide & Inundation
 - Post Harvest losses: Cyclone/Cyclonic rain & Unseasonal rains (for crops in cut & spread condition after harvesting)
- On account payments for Mid Season adversity

b. Operational details

- The scheme is sponsored by the central government and the state governments
- Each state issues a tender for insurance companies to participate in the bidding.
- Only empanelled insurers can bid.
- The state government decides on the clusters of districts for which the bid is invited
- There are premium rate ceilings to be paid by the farmers are fixed. If the rate goes above that, it is paid by the central and the state government
- For farmers who take loan for farming, the scheme is mandatory, and the premium is deducted at the time of disbursement of the loan. Other farmers can also purchase the insurance

c. Claim pay-out

- Three Indemnity levels (IL) : 70%, 80% & 90%
- Calculation of Threshold yield which is the average yield of last 7 years (Minus max of 2 calamity years) multiplied by IL
- Claims calculated on actual yield data furnished by State Govt. based on Crop Cutting Experiments (CCEs).
- Extensive use of Technology
- Use of Smart Phones in conduct of CCE's and Transmission of data

d. The Government also acts as the reinsurer for the last resort and commits to take up losses beyond 350% loss ratio or 35% of total sum insured.

[6]

ii) Challenges faced by stakeholders

a. Government

- The premium rates may be too high compared to the cost of the claims
- Potential Dispute with the insurers on the claim pay-out
 - Lack of awareness about insurance result into low adoption of insurance on opt-in basis.
 - As the selection of insurer is based on just premium rates, it may result into sub-optimal insurance services to farmers

- b. Farmers
 - The pay-out may not be in line with the loss suffered by the farmer as assessment is done at the cluster level (???)
 - It's a mandatory cover which means that a farmer not needing insurance may also need to pay for it
 - There may be delay in claim pay-out by companies
- c. Insurers
 - Delay in premium payments
 - Political influence in the operations of schemes
 - Data availability for pricing
 - Lack of technology as promised by the government (drones and smartphones as envisaged as part of the program may not be available)
 - Lack of expertise in pricing and underwriting may lead to errors

[5]

iii) Entry into crop insurance market:

Following are the major heads of the areas to be considered for market entry with the points to be considered in that area

- a. **Details of the scheme** in terms of
 - What is covered and excluded
 - How will the claim pay-outs be determined
 - Premium payment terms
 - Any loss cap mechanism
 - Cluster sizes
 - Whether coinsurance is allowed
 - How much margin is allowed in premium rates, is there any profit commission to cap the profits
- b. **Details of the market**
 - Who are the other insurers in the market
 - What has been their strategy to this line of business in terms of pricing, reinsurance etc
 - Is there an insurance cycle visible and where is the market on the cycle
 - What has been the past experiences of the schemes so far in terms of pricing, claim experience, catastrophes etc.
- c. **Nature of the line business:**
 - claim frequency
 - claim reporting delays
 - reserving requirements
 - claim severity in case of various scenarios
 - impact of catastrophes

- d. **Fitment of crop insurance business with overall strategy** of the company should be looked at.
- If the company primarily wants to build up retail book of business, then crop may not be a good fit.
 - However, if the company is open for large commercial risks and is looking to expand that LOB anyways, then crop may not be a bad choice.
 - Is the company already concentrated on commercial risk
 - Is the volatility of claim experience within the risk appetite of the company
- e. **Current capital situation** and potential impact on capital
- Are the shareholder fine to put in more capital to write the new LOB
 - Are the shareholders fine with the likely variance in the profitability of the LOB
 - Are the shareholders fine with the expected level of profitability of the LOB
 - There may be initial expenses to set-up the team and systems. In case the company doesn't get any clusters in the bid, all these will be sunk overhead cost. Are the shareholders fine with that
 - If a large book is written in crop in one year, it will impact the solvency capital requirement in subsequent years even if the company stops writing the LOB
 - In case of a bad loss year, there could be significant impact on the operating capital as the losses will need to be funded by shareholders
 - There is also an opportunity for
 - Growth
 - Diversification
 - Develop expertise in new LOB
 - Cross-sell other products to end beneficiaries
 - May be a qualifying criteria for other government businesses in future
- f. **Reinsurance support**
- How easy is it to get reinsurance support / is there enough capacity available
 - What has been the regulator's view in terms of types of reinsurance structures allowed
 - What has been the regulator's view in terms of extent of reinsurance structures allowed
 - Are the terms offered by reinsurers profitable for insurers
 - Do reinsurers back the clusters at the time of bidding or reinsurance needs to be bought after the bid has been successful. The later may be much more risky
 - What is the rating of the reinsurers available and their claim pay-out history
- g. **Underwriting and Pricing:** Insurance cycle
- What strategies should the company adopt for underwriting and pricing
 - Will the pricing to totally led by reinsurers or will an in-house team be developed
 - How much total exposure should be taken
 - What should be the size of the biggest cluster
 - Which clusters / states / regions should be written

- Depending on past few years of claim experience, there may be a cyclical pattern in hard vs soft premium rates for crop. The current position of the market on the cycle should be looked at.

h. In-house expertise

- In-house expertise on crop insurance may need to be development as this is a new and unique line of business
- Are there expert consultants who can be hired for short term projects
- Pricing, reserving, claim management and processing etc are very different than a traditional line of business such as Motor, Fire etc.

i. Technology and systems:

- How seamless, robust and efficient is the technology adopted by the government
- Does the company need to make any system change at its end and integrate with the govt systems
- What alternate processes are proposed in case of system failures and what are implications such as the additional costs, delays etc

j. Stakeholders – policyholders and beneficiaries:

- Working with government as policyholder may have challenges
- Premium delays
- Possible penalties by the government
- Possible blacklisting due to dispute with the government
- Adverse reputation with the government with respect to other schemes, adverse reputation with the regulator

[17]

iv) Underwriting and pricing considerations for a particular cluster

- a. Underwriting consideration is mainly about whether to write a particular cluster or not
- Prior premium payment track record of the stat government
 - Size of the cluster in terms of maximum exposure in case of worst case scenario
 - Capital requirement
 - Diversification
- b. Pricing consideration is about what points to consider to arrive at the premium to bid
- Prior claim experience
 - Exposure to cat events
 - Reinsurer's rate
 - Margin for variable expenses, cost of capital and contribution to profit and overhead expenses
 - Area adjustment factor
 - Heterogeneity factor based on granularity of data available

- Insurance cycle and level of competition

[4]

v) Reinsurance arrangement considerations and recommended reinsurance arrangement

a. Overall Considerations

- Reinsurance may be purchased at the crop lob level as a treaty or at the cluster or state level on facultative basis
- As the claim experience for each cluster may be very different depending on various factors such as pricing and cat event, reinsurance may be difficult to get as a treaty at the LOB level
- The reinsurance arrangement may need to be agreed before the bid is placed as it may be difficult to get reinsurance after the bid depending on the price quoted.
- Otherwise the reinsurance may need to be purchased at an unprofitable term in such case or may need to pull back from cluster if reinsurance is not available later.
- Due to the point above, it will be recommended to have a prior discussion and agreement with one or a couple of reinsurers on the pricing and underwriting approach.
- It will help in making the decisions faster at the time of bids with high degree of confidence of reinsurance support available.

b. Consideration at the cluster level for facultative cover

- Size of the cluster
- Capital available and risk appetite
- Margin in premium rates
- Exposure to catastrophic risk

c. Recommended reinsurance arrangement

- All the perils covered will impact the claim experience at the cluster level rather than for each farmer or each farmer-crop combination. Hence a per risk excess of loss will not make sense.
- A catastrophe event based excess of loss cover may be useful but as a catastrophe is likely to impact the loss ratio significantly, it may be better to take a stop loss cover.
- Quota share cover may be taken to limit the exposure and capital relief.
- There may be some expense relief in terms of reinsurance commission too in

[4]

[36 Marks]
