

# **INSTITUTE OF ACTUARIES OF INDIA**

## **EXAMINATIONS**

**23<sup>rd</sup> March 2021**

**Subject SA3 – General Insurance**

**Time allowed: 3 Hours 30 Minutes (14.30 - 18.00 Hours)**

**Total Marks: 100**

### **INSTRUCTIONS TO THE CANDIDATES**

1. *Please read the instructions to examinees sent along with hall ticket carefully and follow without exception.*
2. *The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which is meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However, if application specific to any other country is quoted in the answer the candidate should answer the question with reference to Indian environment.*
3. *Mark allocations are shown in brackets.*

**Q.1)** You are an actuary working in ANZ General Insurance company. You have recently joined the company and are reporting to the CEO of the company. The CEO wants you to do a deep-dive analysis on the current business written to understand the portfolio better.

i) Specify the need for carrying out a detailed analysis.

(10)

A deep-dive on the current business reveals that the company has been writing significant amounts of liability business with special focus on Professional Indemnity, Product Liability and Employer compensation insurance business. You remember the CEO mentioning that the company has met with large losses in these lines of business and that there is specific focus of the management to reduce exposure to the same.

ii) Discuss the likelihood of large claims on the above mentioned liability lines of business and the impact of these large claims on the methodology and process of calculating the reserves.

(12)  
[22]

**Q.2)** You are an actuary who has recently joined Conservative General Insurance Company. The company is in the process of developing and finalizing the business plan for the forthcoming year starting April 1, 2021. The company in the initial years had focused only on commercial lines of business. However, in the last couple of years it has managed to slowly increase its presence in the Motor Insurance and Retail health business. The Retail health business is mainly written through intermediaries.

As a precursor to the business planning activity the CEO has asked you and the Underwriting team to chalk out a plan for the Motor Insurance business. You along with the Underwriting team has been requested to present the recommended price changes on the Motor Own Damage portfolio for the forthcoming year.

As a part of the detailed portfolio analysis the underwriting and claims team has provided the following high level data for the two prior accident years:

	2019-2020	2020-2021
GWP	100	125
Earned Premium	60	115
No of Policies Written	83,333	96,154
Earned Exposure	50,000	88,462
<b>No of Claims</b>	<b>14,000</b>	<b>26,538</b>
<i>Attritional Claims</i>	13,790	26,273
<i>Total Loss Claims</i>	210	265
<b>Total Ultimate Claims (Amount)</b>	<b>48</b>	<b>103.5</b>
<i>Attrition Claims</i>	45.6	101.43
<i>Total Loss Claims</i>	2.4	2.07

The CEO has mentioned that the company was comfortable with the loss ratios in 2020 but the 2021 loss ratio numbers were higher than the target loss ratios as per the plan. Additionally, the following inputs have been provided to you:

- Claims inflation is likely to be higher by 7% as per inputs received by claims team.
- No significant change in business mix is planned for in the forthcoming year.

- i) Recommend a price change for the year 21-22 and specify the assumptions made. (10)
- ii) Explain the shortcomings of the current data and the additional data required to improve upon the estimated price increase. (8)

Post the strategy meetings and price reviews the business plan was prepared and was planned to be presented to the board. In the process of finalizing the business plan, the company was made aware of a flu-like virus identified across the globe and the country of operation. The emerging situation could lead to lockdowns across the country and may have detrimental effects on the economy. The CEO has asked your opinion on changes to the business plan top-line to cater to this.

- iii) Specify the effects of reducing the top-line. (5)

As an additional precautionary measure, your board has advised to completely shut the health insurance business so as to reduce future claims costs, which are likely to emanate from the virus related illness.

- iv) Explain the effect of closing down the health insurance line of business. (5)
- [28]

**Q.3)** The general insurance companies in the country are launching a new standard residential property insurance product under the direction of the regulator. The product covers structure and / or contents as opted for by the insured. The maximum policy term allowed is ten years. Under this product, the sum insured automatically increases by 10% year on year throughout the policy term. Underinsurance clause is not applicable in this product.

A general insurance company ABC is medium sized and has been operating for more than a decade in the market. However, it had never written any business in the property line of business. It plans to start insuring residential properties through this newly introduced standard product. Further, company plans to introduce this product through their existing agency channel. The market research exercise undertaken by the company has indicated that the majority of the customers who are interested in this product prefer to purchase it for a term of ten years.

As per the financial projections for this business, the company expects high business volume in the first year due to two reasons: low insurance penetration in the country in residential property insurance segment and sudden increase in awareness among the public due to this initiative by the regulator. The insurer ABC projects the premium volumes to drop significantly in year two. However, it expects, the business volume in year two to be sustainable thereafter; with marginal growth rates.

- i) Assume that there is no reinsurance other than the obligatory proportional reinsurance.

Insurer ABC follows Unexpired Premium Reserve (UPR) which is calculated as per the standard 1/365 method. Under the 1/365 method, the premium on gross of acquisition charges and net of GST is divided by the number of days in the policy term. The resultant amount is multiplied by the number of days remaining in the policy term to arrive at UPR.

- a) Describe how the various components of the premium are treated under the existing accounting approach and comment on extent of the true and fair representation of the performance as per the existing accounting approach. (6)

- b) Insurer ABC is undertaking a separate exercise to produce the financial statements for this line of business as per IFRS 17

Outline the accounting methodology under IFRS 17 for this business and comment on extent of the true and fair representation of the performance as per this accounting approach.

(10)

- ii) Insurer ABC is cognizant of the risk posed by natural perils such as flood, cyclone and earthquake in property insurance. Therefore, it plans to purchase catastrophe XoL reinsurance treaty for the first time.

- a) Describe the considerations that Insurer ABC should make in assessing the appropriate structure and value of the catastrophe XoL treaty.

(4)

The insurer is also considering whether or not to maintain a catastrophe reserve going forward.

- b) What is Catastrophe reserve and how could it help insurer ABC?

(4)

- c) Insurer ABC intends to purchase the catastrophe XoL treaty with a high deductible. It intends to transfer the gross earned premium attributable towards natural perils, minus the catastrophe XoL premium, into the catastrophe reserve.

Outline the pros and cons of this approach. Also comment upon other considerations such as investment strategy, taxation or any other relevant aspect.

(8)

**[32]**

- Q.4)** All of the general insurance companies in the country provide the policy and claims data to an organization for compiling industry benchmarks. The motor insurance data collected is at the individual policy and claim level on a daily basis. The data fields include the vehicle details, coverage details and the claim details.

The organization is contemplating to prepare and publish average premium amount on a periodical basis for Motor Own Damage coverage of private cars.

- i) Describe the possible objectives or advantages to various stakeholders that the organization is aiming for through an initiative such as this one.

(6)

- ii) Outline the limitations of the suggested approach of publishing average premium amount in meeting the possible objectives.

(4)

- iii) Suggest and describe solutions or actions which can overcome some of the limitations. Comment if there are any limitations which cannot be overcome.

(8)

**[18]**

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