INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2009

Subject SA3 -General Insurance

Time allowed: Three hours (9.45* - 13.00 Hours)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions on the front page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception*

2. ** You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*

3. *You must not start writing your answers in the answer sheet until instructed to do so by the supervisor*

4. *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 are 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 same should answer the question with reference to Indian environment.*

5. *Attempt all questions, beginning your answer to each question on a separate sheet.*

6. *Mark allocations are shown in brackets.*

AT THE END OF THE EXAMINATION
Please return your answer book and this question paper to the supervisor separately.

Q 1) **a)** List the main rating factors which may be used in pricing

- personal motor insurance and
- motor fleet insurance. (5)

b) You are the actuary of a large general insurance company that writes personal lines motor insurance. A large motor manufacturer wishes to maintain its sales volumes in the current difficult times and has approached your sales department with an unusual offer. The motor manufacturer wishes to sell all its new cars and other heavy goods vehicles with free insurance covers to its customers for a period of 2 years. They propose that:

- Your company underwrites and administers the motor insurance;
- Manufacturer has vehicle service centres and mechanics throughout the country and will provide cover for property damages up to Rs.5,000 for passenger cars and Rs.10,000 for heavy goods vehicles;
- Manufacturer will pay a one-off fixed premium per unit of sale for the 2 years 'free insurance';
- This will vary by only type of vehicle and will not include any other rating factor.

Describe the risks associated with the motor manufacturer's proposal to your company. (15)

c) Senior management and the sales teams of your company find a big business opportunity with this proposal. What would you propose to mitigate/manage the risks identified in 1 (b). (10)

d) Describe the differing claim characteristics of personal lines motor insurance and the motor manufacturer's portfolio. (6)

e) How would you monitor the motor manufacturer's portfolio? How different are these monitoring measures? (4)

f) The existing reinsurance programme consists of two layers of individual excess of loss cover Rs.50,000 xs Rs.20,000 and Rs.5 lacs xs. Rs.50,000. How would you change the reinsurance programme to take on the additional risks from the motor manufacturer's portfolio? (5)

g) Outline the principles that you would consider in deciding in which assets the company should invest to meet liabilities from the motor manufacturer's portfolio. (5)

[50]

Q 2) You are the actuary of a medium sized general insurance company in India. The organisers of XYZ cricket event have approached your company for insuring their upcoming event. 15 cricket matches will be played over a period of 4 weeks across venues in India and 8 Indian cricket clubs will be participating in the event.

a) What will be the insurance needs of the organisers on XYZ cricket event? (7)

b) What information would you require to determine the risk premium? How would you use such information in your rating? (10)

c) You have identified that the size of the risk would be very large for your company size. What are the various options available to your company for taking part in this insurance cover? (8)

[25]

Q 3) You are the actuary of a small insurer writing only household insurance. The following information is available to you.

Usually 40% of the policies have been incepting on 1st January; other policies are written uniformly throughout the year.

Gross Written Premium for the last 6 years (Rupees in Lakhs):

2003	271
2004	264
2005	242
2006	232
2007	224
2008	213

The reported claims incurred triangle (Rupees in Lakhs):

Year of development

	0	1	2	3	4	5
2003	125	135	138	139	141	138
2004	116	122	126	126	121	
2005	117	132	125	125		
2006	107	122	124			
2007	146	159				
2008	109					

During the year 2007, the company suffered from storm and flood losses amounting to Rs. 41 Lakhs in different parts of India.

a) Calculate the ultimate losses for each of the last 6 accident years. (7)

b) The company has lost some of the business from detariff of the household premium rates and intense competition. The company has put in place plans to grow the business from affinity partnerships and other initiatives. (5)

You have also observed that the number of claims reported from Theft and Accidental Damage have increased in the last 6 months. The claims and underwriting staff have raised concerns about the increasing claims from Theft from difficult economic conditions.

Calculate the expected accident year loss ratio for 2009 stating any assumptions you make.

c) How would you categorise the expenses for pricing purposes? Why is it important to include the results of such analysis in the premium rating? (8)

d) Your company currently applies a loading of Rs.X to the risk premium. The Marketing Director has proposed that the company introduce a 5-year NCD system by level rebates to a maximum of 20% (5%, 10%, 15% and 20% respectively); if a claim is made, NCD falls to 0%. If claims follow a Poisson Distribution with a mean and variance of 0.08, calculate the revised expense loading. (5)

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