NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

BACHELOR OF COMMERCE (HONOURS) INSURANCE & RISK MANAGEMENT

ADVANCED INTERNATIONAL REINSURANCE PRACTICE : CIN 4004

Final Examination April 2003

TIME ALLOWED: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Answer all questions in Section A
2. Answer a total of Three questions in Section B
3. Question 10 is compulsory

Section A – Answer all Questions

1. Outline the main disadvantages to a reinsurance company of depositing funds with an overseas ceding company. ***(3 marks)***

2. Briefly describe the following bases of attachment for reinsurance treaties;
   (i) Losses occurring basis ***(1.5 marks)***
   (ii) Risks attaching basis ***(1.5 marks)***

3. Describe two "sudden death" provisions of the Commencement and Termination Clause ***(3marks)***

4. Assume an insured incurred a loss of ZWD 500,000 and had purchased a policy with a limit of ZWD 1,000,000. Calculate the amount of net loss to an insurer under the following three types of reinsurance treaties

   (i) Quota share of 50% ***(1 mark)***
   ii) Surplus treaty with a minimum line of ZWD 100,000, a maximum number of lines ceded of four and retention of ZWD 100,000 from the line guide ***(1 mark)***
   (iii) Per risk excess of loss of ZWD 750,000 excess of ZWD 250,000 and a 10% co-reinsurance clause in the layer. ***(1 mark)***

5. An insurer experiences a ZWD 40,000,000 catastrophe loss. They have a ZWD 90,000,000 excess of ZWD 10,000,000 catastrophe reinsurance cover with one reinstatement pro rata as to amount and 100% as to time. The original premium the insurer paid for the cover was ZWD 1,200,000.

   What is the reinstatement premium the insurer would have to pay as a result of the catastrophe. Show all your workings. ***(3 marks)***

6. What are the main aims of an insurance company in formulating its reinsurance programme? ***(3 marks)***

7. Inflation can result in a disproportionate increase in reinsurers' exposure under excess of loss reinsurance contracts especially for long tail business. Describe one clause in a non proportional treaty which seek to minimize this situation ***(3 marks)***

8. You are given the following figures for the year 2003

Premium Commission

1st Quarter 2003 370,000 9,250
2nd Quarter 2003 290,000 7,250
3rd Quarter 2003 420,000 10,500
4th Quarter 2003 400,000 10,000

Using the 1/8th method, calculate the unearned premiums as at 31.12.2003 ***(3 marks)***

9. Calculate the adjustment premiums for the following: ***(3 marks)***

Fixed Percentage:	3.5%
GNPI:	5,000,000
Incurred Claims	200,000
XOL cover:	400,000 xs 300,000

Deposit Premiums (=minimum) 50,000 each time on 1 January and 1 July

SECTION B - ANSWER A TOTAL OF 3 QUESTIONS – QUESTION 10 IS COMPULSORY

10. You are a Treaty Reinsurance Underwriter and you have been asked to submit a quotation for a working excess of loss programme for PGZ Insurance Company:

Based on the attached slip, information schedule, what would be your terms for the following two layers of working excess of loss reinsurance on a per risk basis?

(i) 1st Layer ZWD 1,500,000 xs ZWD 500,000
2nd Layer ZWD 3,000,000 xs ZWD 2,000,000

(ii) What clauses, conditions or warranties (if any) do you feel should be added to the slip?

(iii) What additional information would assist you in the assessment of this programme?

PROPERTY NON PROPORTIONAL PROPOSED SLIP

REINSURED: **PGZ Insurance Company**
PERIOD: Losses occurring during the period 12 months commencing 1.1.1998
TYPE: Fire and Allied perils risk excess of Loss Reinsurance
CLASS: Fire and Allied Perils
LIMITS:

REINSTATEMENTS:
PREMIUM:
DEDUCTIONS Brokerage 10%

GENERAL

CONDITIONS: Ultimate Net Loss
Net Retained Lines
War and Civil War Exclusion

EXCESS OF LOSS REINSURANCE INFORMATION:

PREMIUM INCOME (WRITTEN DURING THE PERIOD)

Retained

1997 Actual 6,299,064
1998 Actual 6,594,746
1999 Actual 9,524,186
2000 Actual 9,334,006
2001 Actual 12,397,215
2002 Estimated 12,400,000
2003 Estimated 13,670,000

LARGEST LOSS

Incurred losses from ground up exceeding 200,000 for the period 1997 to date:

Number	Year	Nature of loss	Retained loss Amount
1	1997	Flood (event)	694,000*
2	1997	Fire	1,365,685
3	1998	Fire	253,626
4	1998	Fire	451,721
5	2000	Fire	238,872
6	2000	Flood (event)	6,000,000**
7	2000	Fire	263,428
8	2001	Fire	325,557

* no single loss exceeding 300,000

** Largest single risk loss 456,000. No other single risk loss greater than 300,000

ADDITIONAL INFORMATION

Consumer price index for the years 1997 – 2003 is as follows:

1997 165
1998 187
1999 194
2000 205
2001 220
2002 240

It is estimated that the index will rise to approximately 264 in 2003.
The applicable burning cost ratings are to be as follows:

Fluctuation 25%
Profit Margin 25%
Brokerage 10%

Total Marks (33)

11. (a) An insurance company has two reinsurance treaties covering their property book of business

Treaty A is a per risk excess of loss for the layer ZWD 3,000,000 xs ZWD 1,000,000

Treaty B is a catastrophe cover with the following structure

Deductible ZWD 5,000,000

1st Layer ZWD 4,000,000 xs ZWD 5,000,000 with 10% co-reinsurance
2nd Layer ZWD 6,000,000 xs ZWD 10,000,000 with 50% co-reinsurance

Treaty A inures to the benefit of Treaty B.

A hurricane results in large claims from three risks in addition to numerous claims (less than ZWD 500,000 per risk) as shown below;

Loss

Risk 1 ZWD 1,500,000
Risk 2 ZWD 1,000,000
Risk 3 ZWD 800,000
All other hurricane claims ZWD 10,000,000

What is the total amount borne by the insurer and the reinsurance recoveries***?***

(8 marks)

Explain and describe the loss occurrence limit in a catastrophe programme

(4 marks)

(b) Assume the following for a catastrophe treaty:

Retention ZWD 4,000,000
Co-reinsurance 7.5%

1st Cat Layer ZWD 10,000,000 xs ZWD 4,000,000
2nd Cat Layer ZWD 10,000,000 xs ZWD 14,000,000
3rd Cat Layer ZWD 20,000,000 xs ZWD 24,000,000

(i) Illustrate loss occurrences for which the insurer would not recover under this catastrophe treaty

(***4 marks)***

(ii) What is the insurer's retention, co-reinsurance and reinsurance recovery for a gross loss of ZWD 12,000,000

(4 marks)

12. (a) CMR Insurance Company enters into a 75% pro rata reinsurance arrangement with a reinsurer effective 1 January 2003

The treaty ceding commission is 30%.

During 2003, the insurance company has ZWD 250,000,000 of written premium, gross of reinsurance subject to the treaty.

The insurance company suffered a ZWD 20,000,000 loss gross of reinsurance of which it recovered the respective portion from the reinsurer.

As at December 31, 2003, the insurance company had a total of ZWD 50,000,000 of paid losses and ZWD 100,000 of loss adjustment expenses, gross of reinsurance. A total amount of ZWD 10,000,000 (gross of reinsurance) is outstanding as at December 31, 2003.

(i) What is the net amount due to the reinsurer under the treaty? Show all workings **_(6 marks)_**

(ii) Explain the purpose of ceding commission **_(2 marks)_**

(iii) What is a "cash loss" provision in a reinsurance contract wording? **_(2 marks)_**

(b) Hazel Insurance has the following non-proportional arrangement:

Limit: ZWD 200,000 xs 200,000

Minimum and Deposit Premium: ZWD 75,000

Reinstatements 1 @ 50% and 1 @ 100%

Losses FGU 1. 300,000
2. 240,000
3. 390,000
4. 265,000
5. 295,000

(i) Please advise the amount of each loss to the Excess of Loss contract and the total amount of loses paid under this contact **_(3 marks)_**

(ii) Please advise the reinstatement premium applicable for each loss based on the Mindep and give the total premium paid by the reinsured **_(7 marks)_**

13 ZEMEL insurance Company the following reinsurance arrangements:

Table of Limits – Property

Risk Category Area 1 Area 2 Area 3

A. Museums 1,250,000 1,000,000 875,000
B. Hotels 1,000,000 800,000 625,000
C. Cinemas 750,000 600,000 500,000
D. Cafes 500,000 350,000 250,000
E. Discotheques 250,000 150,000 125,000

Surplus Capacity

A. Risks up to 5 lines
B. Risks up to 5 lines
C. Risks up to 4 lines
D. Risks up to 3 lines
E. Risks up to 2 lines

Risk

The risk is a sizeable cinema classified by the company as C1. The risk has an overall ZWD 5,750,000 sum insured. The company will utilize its maximum available retention, cede accordingly a maximum amount to its surplus and charge an OGR of 2.5 per mille of the sum insured.

(i) Please give the full details of the surplus capacity (A1, A2, A3, etc)

(ii) Calculate the Original Gross Premium for the risk

(iii) What is the monetary amount, which the insurance company has decided to retain on this risk?

(iv) Please allocate the risk and premium generated to the retention and surplus treaty and any other facility (facultative)

(v) Two losses occur, one for 800,000, the second for 3,200,000. Please allocate the losses to the company's retention, surplus and any other facilities

vi. Assuming that the company had decided to use an EML of 30% on the risk, would your answer above be different. Explain and illustrate your answer fully

Total Marks (20)

14. Explain how insurance companies can make use of the Capital Market to meet reinsurance needs especially catastrophe reinsurance with particular regards to the following:

(i) Catastrophe bonds
(ii) Catastrophe Futures
(iii) Any other Capital market products

(Total Marks 20)

END OF EXAMINATION PAPER