

P97

Diploma in Insurance

Unit P97 – Reinsurance

April 2016 examination

Instructions

- Three hours are allowed for this paper.
- **Do not begin writing until the invigilator instructs you to.**
- **Read the instructions on page 3 carefully before answering any questions.**
- Provide the information requested on the answer book and form B.
- You are allowed to write on the inside pages of this question paper, but you must **NOT** write your name, candidate number, PIN or any other identification anywhere on this question paper.
- The answer book and this question paper **must both be handed in personally by you** to the invigilator before you leave the examination room. **Failure to comply with this regulation will result in your paper not being marked and you may be prevented from entering this examination in the future.**

Unit P97 – Reinsurance

Instructions to candidates

Read the instructions below before answering any questions

Three hours are allowed for this paper which carries a total of 200 marks, as follows:

Part I	14 compulsory questions	140 marks
Part II	2 questions selected from 3	60 marks

- You should answer **all** questions in Part I and two out of the three questions in Part II.
- You are advised to spend no more than two hours on Part I.
- Read carefully all questions and information provided before starting to answer. Your answer will be marked strictly in accordance with the question set.
- The number of marks allocated to each question part is given next to the question and you should spend your time in accordance with that allocation.
- You may find it helpful in some places to make rough notes in the answer booklet. If you do this, you should cross through these notes before you hand in the booklet.
- It is important to show each step in any calculation, even if you have used a calculator.
- If you bring a calculator into the examination room, it must be a silent, battery or solar-powered non-programmable calculator. The use of electronic equipment capable of being programmed to hold alphabetic or numerical data and/or formulae is prohibited. You may use a financial or scientific calculator, provided it meets these requirements.
- Answer each question on a new page. If a question has more than one part, leave six lines blank after each part.

PART I

Answer ALL questions in Part I

Note form is acceptable where this conveys all the necessary information

1. (a) List the standard requirements necessary to create a valid reinsurance contract. (4)
(b) Explain briefly the contractual relationship between buyers and sellers of reinsurance. (4)
2. Outline **five** ways brokers acquire reinsurance business. (10)
3. Explain the circumstances in which facultative reinsurance might be used. (15)
4. Outline **five** risks carried by insurance-linked securities. (10)
5. ABC Insurance Company (ABC) has a nine-line surplus treaty and its maximum retention per risk is £1,000,000. In addition to that it has a five-line second surplus treaty for larger risks.

Calculate, **showing all your workings**, the cessions to the first and second surplus treaties if ABC retains its maximum gross retention for the following **five** risks:

A £1,500,000
B £5,000,000
C £12,000,000
D £15,000,000
E £18,000,000 (10)

6. A property insurer in Japan reinsures its account against natural perils on a 50% quota share treaty basis, subject to a maximum cession to reinsurers of US\$3,000,000 any one risk. The reinsurers impose an event limit of four times the single risk limit.

The property insurer cedes 15 individual risks of the maximum cession.

An earthquake affects 10 of those risks creating a total loss to those policies.

Outline the purpose of:

- (a) cession limits; (2)
- (b) event limits. (2)

Calculate, **showing all your workings**:

- (c) the reinsurance recovery taking into account the application of both the event and cession limits; (2)
- (d) the recovery that would have been possible had the event limit not been in place. (2)

7. Explain briefly:

- (a) the importance of the deductible in excess of loss treaties; (6)
- (b) the purpose of a risk excess of loss treaty and the operation of its deductible; (3)
- (c) the purpose of a catastrophe excess of loss treaty and the operation of its deductible. (3)

8. Outline the factors that an insurer would take into consideration when choosing whether to purchase a proportional or non-proportional treaty for its reinsurance protection. (14)

QUESTIONS CONTINUE OVER THE PAGE

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9. When a facultative contract is not written on a back-to-back basis, reinsurers may require additional terms, conditions, limitations and exclusions.
- Outline **three** of those additional requirements, stating the reasons why they may be imposed. (6)
10. Explain the circumstances that create a hard reinsurance market and the effect that this has on the marketplace. (10)
11. State **seven** different types of risks covered in a reinsured's property account. (7)
12. Outline the specific considerations a reinsurer needs to take into account when underwriting a casualty reinsurance portfolio. (15)
13. (a) State **five** categories of political risks. (5)
- (b) Outline **four** standard exclusions usually found in a political risk reinsurance contract. (4)
14. Explain briefly how accumulations may occur in:
- (a) a cargo account; (3)
- (b) an energy account. (3)

PART II

Answer TWO of the following THREE questions
Each question is worth 30 marks

15. ABC Insurance Company (ABC) has the following excess of loss programme in place for its hull book of business.

- Layer 1 £10 million excess of £10 million with two reinstatements at 75% pro-rata to amount. The initial premium rate is 5% of premium income.
- Layer 2 £30 million excess of £20 million with two reinstatements at 50% pro-rata to amount. The initial premium rate is 9% of premium income.

The programme is adjustable on an estimated premium income of £50 million.

There were three large claims in one year:

- Claim 1 £30 million
- Claim 2 £12 million
- Claim 3 £45 million

(a) Calculate, **showing all your workings**:

- (i) the initial premium for layers 1 and 2; (2)
- (ii) the claims recovery from **each** layer and ABC's total net retention; (7)
- (iii) the total reinstatement costs for **each** claim and **each** layer. (12)

The actual premium income at the end of the year was £55 million.

(b) Recalculate, **showing all your workings**:

- (i) the adjustment rate; (1)
- (ii) the adjusted premium for layers 1 and 2; (2)
- (iii) the adjusted reinstatement premium for **each** claim. (6)

QUESTIONS CONTINUE OVER THE PAGE

16. An insurance company, ZZZ, writes up to a maximum sum insured of £10 million for 100% any one risk. It currently has an 80% quota share treaty with 40% ceding commission.

ZZZ's gross premium income is £100 million and their acquisition costs are 35%.

15 claims have occurred in the last underwriting year. The amount (from the ground up) of these 15 claims is:

- | | | |
|--------------|---------------|---------------|
| 1. 500,000 | 6. 3,000,000 | 11. 5,600,000 |
| 2. 500,000 | 7. 3,500,000 | 12. 5,600,000 |
| 3. 1,000,000 | 8. 4,000,000 | 13. 5,900,000 |
| 4. 1,500,000 | 9. 4,400,000 | 14. 6,200,000 |
| 5. 2,500,000 | 10. 5,300,000 | 15. 6,500,000 |

The company is considering changing its protection to a risk excess of loss treaty based on a retention of £2 million each and every risk.

Initial indications show it would cost ZZZ 30% of its premium income.

- (a) Calculate, using the table **below** as a template which you should **copy into your answer booklet** and record your calculations there, the net results to ZZZ over the last year on both the quota share basis and an excess of loss basis, assuming the above terms and conditions apply.

	Quota Share	Excess of Loss
Original gross premium income		
Acquisition costs		
Reinsurance premium		
Ceding commission		
<u>Net premium</u>		
Gross claims		
Reinsurance recoveries		
Net claims		
Net profit		

(12)

- (b) You are a reinsurance broker. Prepare a report for ZZZ, based on your calculations from the table **above**, that:

- (i) advises on whether they should change to an excess of loss from a quota share, and what benefits, if any, it could bring to the business; (5)

- (ii) advises on the information they will need to provide in order to obtain the best terms for an excess of loss. (13)

- 17.** Insurance Company ABC underwrites a domestic property account. Its Board is considering a reciprocal exchange of similar business with Insurance Company XYZ in another territory.

Prepare a report for the Board explaining the following points:

- Reciprocity in relation to a reinsurance agreement.
- The main aims of reciprocity.
- The requirements for a successful reciprocal arrangement.
- The type of reinsurance contracts and underlying business which are best suited to reciprocal exchange.

(30)

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