EXAMINATION

2 October 2009 (pm)

Subject ST3 — General Insurance Specialist Technical

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*

2. *You have 15 minutes before 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 booklet until instructed to do so by the supervisor.*

4. *Mark allocations are shown in brackets.*

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

6. *Candidates should show calculations where this is appropriate.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

1 A small upmarket supermarket has approached a large general insurance company directly and has enquired about insuring a promotional product. They sell a range of luxury food hampers that are delivered all over the world. They would like to offer purchasers a guarantee that if a hamper is lost in transit then a replacement will be dispatched within seven days of the loss being accepted. The supermarket sends the hampers uninsured via national postal services and couriers depending on destination country and the weight of the hamper. For every hamper lost the insurance company will pay the supermarket the replacement cost.

Explain what data would be required in order to rate this business, including the likely source of these. [6]

2 The following data have been extracted from the accounts of a medium-sized general insurance company which writes mainly motor and household business. The company prepares its accounts on an accident year basis with a financial year end of 31 December.

(All figures in £ millions)	*2007*	*2006*
Net written premium	40.0	26.0
Net earned premium	38.2	25.5
Net incurred claims	36.5	17.3
Increase in DAC	2.5	1.5
Expenses paid	4.5	3.5
Commission paid	7.0	5.5
Investment income on insurance funds	6.5	3.4
Other investment income	2.0	1.2
Total assets at 31 December	51.5	35.0
Total liabilities at 31 December	38.0	20.5

"Net" in the above table means after allowing for reinsurance.

(i) Calculate the following for each of 2007 and 2006

(a) Loss ratio
(b) Expense ratio
(c) Operating ratio
(d) Solvency ratio

[5]

(ii) Comment on the ratios calculated in (i), giving possible reasons for the features observed. [8]

[Total 13]

3 A general insurance company has been asked to tender to provide insurance cover for the organisers of a major sporting event to be held in 2012 at a number of venues across the United Kingdom. At the moment approximately half the venues have been completed while it is anticipated that those remaining will be complete by early in 2012. In addition to the sporting events the competition will be preceded by a series of concerts featuring top musicians. The proposed cover will be a three year policy commencing on 1 January 2010 with the premium payable in three equal annual instalments. It is intended that the cover will be on an "all risks" basis that will meet the organisers' insurance needs.

(i) Describe the different types of cover that would be required, including the claims characteristics of each. [14]

(ii) List the exposure measures that would be required to determine the appropriate exposure for rating the cover in part (i). [4]

(iii) Discuss other risk considerations that would be considered when rating this particular product. [7]

(iv) State reasons why a general insurance company may choose to model claims, other than to calculate the risk premium. [4]

[Total 29]

4 (i) State the main objective regarding the investment of the free reserves of a general insurance company. [1]

The following information has been extracted from the management accounts of two proprietary non-US general insurance companies, A and B.

	Company A	*Company B*
Value of assets	£600m	£55m
Value of liabilities	£400m	£40m
Largest class of business written	UK Motor	Commercial Property (USA)

An actuary is advising on the best investment strategy to use for the assets of each company.

(ii) Discuss the strategies that the actuary would recommend and the factors that should be considered when giving advice. [10]

(iii) Describe the extra information that would be needed before a more informed level of advice could be given, explaining why this information is important. [3]

[Total 14]

5 The actuarial team of a large accountancy firm is currently working on the audit of a medium-sized general insurance company. The company writes a number of different lines of business. The following is the only information that has been provided.

XYZ Insurance Plc — Year Ending 31 December 2008

Summary of written premium

Class	*Amount*	*Territories*
Commercial Property	£250m	50% USA, 25% EU, 25% Asia
Motor Reinsurance	£70m	50% local, 50% Turkey
Household	£65m	100% local
Product Liability	£60m	75% North America, 25% EU
Marine	£100m	Mixed global coverage
Professional Indemnity	£55m	Large global law firms
Other	£50m	Various
TOTAL	*£650m*	

Summary by accident year from internal actuarial reports

Class	*2005 ULR**	*2006 ULR*	*2007 ULR*	*2008 ULR*
Commercial Property	200%	45%	50%	75%
Motor Reinsurance	50%	45%	50%	55%
Household	75%	70%	86%	80%
Product Liability	not written	not written	55%	65%
Marine	125%	50%	55%	35%
Professional Indemnity	52%	43%	52%	65%
Other	80%	80%	80%	80%

**ULR = Ultimate Loss Ratio = ultimate claims/ultimate premiums*

High level summary of reserves and methods adopted

Class	*IBNR*	*Reserves***	*Method*
Commercial Property	£250m	£520m	Based on run-off triangles
Motor Reinsurance	£160m	£300m	Based on contract by contract review
Household	£20m	£80m	Based on delay tables
Product Liability	£55m	£60m	Based on case estimates and pricing loss ratios for IBNR
Marine	£120m	£300m	Based on run-off triangles
Professional Indemnity	£190m	£320m	Based on report from US parent
Other	£27m	£100m	Run-off triangles if data allow

** Reserves include IBNR

(i) Outline with reasons the areas where the team should concentrate its review providing justification for your choices. [7]

The team is invited to attend a meeting with the company's chief actuary.

(ii) Describe the key information that the team would wish to obtain from this discussion on the methodology and assumptions used by the company. [7]
[Total 14]

6 A general insurance company writes direct household insurance. For the last eight years its reinsurance programme has consisted solely of catastrophe excess of loss reinsurance renewing on 1 January each year. This gives cover of 0.5% in excess of 0.05% of the total sum insured for the book at the date of loss and one free reinstatement. The cover has always been 100% placed with the same reinsurance company. The insurance company has experienced the following results.

	Accounting year (beginning 1 January)									
	11	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Sums insured 1 Jan (€bn)	28	30	33	38	45	52	56	66	81*	99*
Gross written premium (€m)	177	181	198	234	267	284	290	342*	422*	
Gross earned premium (€m)	175	178	184	211	256	277	287			
Net earned premium (€m)	159	163	170	197	241	261	271			
Gross claims incurred (€m)	120	142	142	143	166	192				
Net claims incurred (€m)	120	142	142	143	166	192				

* = forecast
€1bn = €1,000m

In Years 12 and 13 the company suffered an unusually high number of large subsidence, fire and liability claims. In Year 17 a severe windstorm and a widespread flood resulted in additional claims of €19.3m and €33.7m at the start of February and October respectively. If the weather events had not occurred, the gross loss ratio for Year 17 would have been 67.0%.

It is now halfway through Year 18 and you are deciding on the reinsurance programme for Year 19. The Board of Directors has questioned whether the existing reinsurance programme is still appropriate.

(i) List the potential benefits to the company of purchasing this type of reinsurance cover. [3]

(ii) Calculate the total gross and net claims incurred and gross and net loss ratios for Year 17, stating any assumptions made. [5]

(iii) Suggest reasons why the Board of Directors has challenged the reinsurance programme. [6]

(iv) Outline the options available to the company regarding its reinsurance programme, giving their relative merits. [10]

[Total 24]

END OF PAPER