Group Benefits Exam
February 2019

This exam consists of sixteen (16) multiple choice questions worth 16 points and five (5) written answer questions worth 34 points for a total of 50 points.

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SECTION 1: MULTIPLE CHOICE/GRID QUESTIONS

Each of the 16 multiple choice questions is worth 1.0 point for a total of 16 points. Circle the right answer on the multiple-choice question answer sheet.

Question 1

Which of the following would constitute non-compliance to the Insurance Companies Act?

I. Failure by the actuary to make a report on actuarial and other policy liabilities more than 20 days before the date of the annual meeting of the shareholders and policyholders of the company.

II. Failure by the company to permit access to records, information and explanations requested by the actuary and that the actuary considers necessary to perform his/her duties.

III. Failure, by an actuary whose appointment is revoked, to submit to the directors of the company and to the Superintendent of Financial Institutions a written statement of the circumstances and reasons why, in his/her opinion, the actuary’s appointment was revoked.

IV. Failure by the company to inform the Superintendent of Financial Institutions of the revocation of the actuary.

A. All but I
B. All but II
C. All but III
D. All but IV
E. All
Question 2

Regarding the expectations of the Office of the Superintendent of Financial Institutions as to the reinsurance risk management policy (RRMP) of a registered group insurer, which of the following are TRUE?

I. The RRMP should reflect both the insurer’s risk appetite and risk tolerance.
II. The RRMP should prohibit the use of unregistered reinsurance.
III. The insurer should perform a due diligence on its reinsurers on an on-going basis in order to be aware of its counterpart risk and to be able to assess and manage this risk.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 3

Regarding Québec legislation, which of the following are TRUE?

I. For group insurance purposes, exact same rights and obligations apply to common-law partners and civil union spouses.

II. Any general clause whereby the insurer is released from its obligations if the law is violated is null, unless the violation constitutes a criminal offence.

III. A contract of group insurance is formed at the time the insurer accepts the application of the client even if the policy has not been delivered yet.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 4

Which of the following statement are TRUE regarding corporate governance?

I. An insurer’s Board is ultimately accountable for the insurer’s safety and soundness, and its compliance with governing legislation.

II. Regardless of the composition of the Boards of subsidiaries, parent Boards should exercise adequate oversight of the activities of subsidiaries to ensure that the parent Board can meet its responsibilities.

III. The Board and senior management should approve the overall internal control framework and monitor its effectiveness.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 5

Which of the following are TRUE regarding mental and nervous conditions as a cause of long-term disability?

I. Mental and nervous conditions are a more prevalent cause of disability in Canada than in the U.S.

II. Mental and nervous conditions are a more prevalent cause of disability in Québec than in the rest of Canada.

III. The termination rates for mental and nervous conditions are much higher in the rest of Canada (excluding Québec) than in the US.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 6

Which if the following are TRUE regarding bankruptcy of an employer of a self-insured long-term disability (LTD) plan?

I. LTD recipients have a priority claim on the bankrupt employer’s assets.

II. Assuris covers only the first $2,000 per month or 85% of the monthly benefit from the self-insured plan, whichever is greater.

III. The liquidator in charge of the bankruptcy will transfer money from the employer’s assets to a trust established for the exclusive benefit of disabled employees.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 7

Regarding group insurance in Québec, which of the following are TRUE?

I. The definition of “legitimate group” in the Civil Code is different from the definition of “legitimate group” under the Quebec Prescription Drug Insurance Act and is less stringent.

II. In group insurance on the life or health of debtors, the master policy may provide for policyholder remuneration to be calculated as a percentage of premiums, even if this remuneration does not correspond to expenses actually incurred by the policyholder to administer the contract.

III. An employee who became disabled shortly before a change of insurer and dies shortly after the change, while still in the elimination period, falls under the responsibility of the former insurer if death results from the condition that caused disablement.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 8

Which of the following conclusions can be drawn from recent AD&D Case Law?

I. The insurer can narrow the coverage by means of explicit exclusion clauses.

II. A loss caused by a disease could be covered under an accident insurance policy, if the disease is contracted as a result of "accidental means" through the entire chain of events.

III. A disease transferred from person to person via natural means can be considered an accident.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III
E. The correct answer is not given by A, B, C, or D.
Question 9

Which of the following are TRUE regarding disability characteristics under the Canada Pension Plan (CPP)?

I. Both recovery and mortality improvement rates for disability beneficiaries are assumed to trend to ultimate levels by 2020.

II. The incidence of new CPP disability cases (i.e., the number of new cases as a proportion of the eligible population) generally decreased from 1970 to the early 1990s.

III. The overall female incidence rate has been lower than the overall male incidence rate since 1996.

IV. The degree to which recovery from disability occurs can vary significantly by age, sex, and year.

A. I only
B. II and III only
C. II and IV only
D. I and IV only
E. The correct answer is not given by A, B, C, or D.
Question 10

Which of the following are TRUE regarding Group Life and Health policy plans?

I. Administrative Services Only (ASO) arrangements are generally offered with group life insurance coverage because of favorable tax consequences for the beneficiary.

II. Flexible Benefits Plans (Flex Plans) generally create additional risk since the member selects the benefit level.

III. Optional Life risk characteristics and liabilities may be more similar to individual insurance than to group insurance.

IV. Under prospectively rated arrangements, the group policyholder’s premium rates are a weighted average of the insurer’s manual rates and rates based on the insurer’s general book of business experience.

A. I only
B. II and III only
C. II and IV only
D. I and IV only
E. The correct answer is not given by A, B, C, or D.
Question 11
Which of the following are TRUE regarding considerations in developing incurred but not reported (IBNR)?

I. It is appropriate to group electronically adjudicated drug claims with reimbursement drug claims.

II. IBNR includes claims that have been terminated or denied but that may be reopened or may be appealed or litigated in the future.

III. Economic recessions have an impact on reporting of claims for elective treatments.

IV. Trends in factors such as inflation, utilization, and technology may influence estimated IBNR claims.

A. I only
B. II and III only
C. II and IV only
D. All but I
E. The correct answer is not given by A, B, C, or D.
Question 12

A group of participants to the Québec Public Prescription Drug Insurance Plan have the following claims for the month of June 2018:

<table>
<thead>
<tr>
<th>Participant</th>
<th>June 2018 Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marie</td>
<td>20</td>
</tr>
<tr>
<td>Ellie</td>
<td>100</td>
</tr>
<tr>
<td>Danielle</td>
<td>15</td>
</tr>
<tr>
<td>Sarah</td>
<td>70</td>
</tr>
</tbody>
</table>

You are given:

- The Public plan’s deductible for the month of June 2018 is $19.45
- The Public plan’s deductible for the month of July 2018 is $19.90
- The Public Plan’s co-insurance is 34.9%
- Claims for each participant increase by 5% in July 2018

What is the percentage increase in the total out-of-pocket amount paid by the group between June and July 2018?

A. 4.7%
B. 5.0%
C. 5.3%
D. 5.6%
E. 5.8%
Question 13

Which of the following Statements are TRUE regarding Dynamic Capital Adequacy Testing (DCAT)?

I. Annuity and insurance contracts tend to react very similarly to adverse scenarios.

II. An opinion signed by the Appointed Actuary and included in the report on the financial condition of the insurer.

III. The standard of materiality would usually be more rigorous than that used for valuation of the insurer’s policy liabilities.

IV. Expense assumptions are a major consideration in the projected financial position of every insurer.

A. I only
B. II and III only
C. II and IV only
D. All but IV
E. The correct answer is not given by A, B, C, or D.
Question 14

Which of the following Statements are TRUE regarding Own Risk and Solvency Assessment (ORSA) of federally regulated insurers?

I. The supervisory review of the ORSA is intended to prescribe how an insurer should perform use or report on its ORSA.

II. As part of its ORSA, an insurer is not expected to set internal targets.

III. There is a single correct approach to an ORSA, and one approach fits all insurers.

IV. The ORSA should be performed on a regular basis so that it continues to provide relevant information for an insurer’s management processes.

A. I only
B. II and III only
C. II and IV only
D. All but IV
E. The correct answer is not given by A, B, C, or D.
Question 15

Regarding the application of credibility to Long Term Disability (LTD) experience rating, which of the following are TRUE?

I. There are differences in the shapes of the credibility curves used by different LTD insurers.

II. For assessing credibility, some credibility formulas use expected claims whereas others use actual claims.

III. Based on limited fluctuation credibility theory, the minimum number of claims required for full credibility increases as the ratio \( \sigma / \mu \) increases, where \( \mu \) and \( \sigma \) are the mean and standard deviation of the claim amounts.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III.
E. The correct answer is not given by A, B, C, or D.
Question 16

The following table shows cumulative dental claims for a small insurer:

<table>
<thead>
<tr>
<th>Claim Quarter</th>
<th>Development Quarters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>140</td>
</tr>
<tr>
<td>2</td>
<td>160</td>
</tr>
<tr>
<td>3</td>
<td>120</td>
</tr>
<tr>
<td>4</td>
<td>110</td>
</tr>
</tbody>
</table>

Calculate the IBNR at the end of the 4th quarter using the chain-ladder method.

A. 348
B. 412
C. 816
D. 1010
E. 1216
SECTION 2: WRITTEN ANSWER QUESTIONS

Answer five questions:

(Total of 34 points)

Mandatory Questions:

- Question 17  6 points
- Question 18  6 points
- Question 19  7 points
- Question 20  7 points
- Question 21  8 points
Question 17 (6 points)

ABC Corp is a Canadian insurer who considers acquiring the Group line of business of XYZ Corp, another Canadian Insurer. In recent years, the Group line of XYZ has been constantly losing money.

ABC has agreed to pay XYZ a certain amount for its goodwill. In addition, XYZ would transfer to ABC the assets currently used to back its group insurance reserves held for Incurred but not reported, waiver of premiums on group life and claims reserves on LTD. Claims reserves for STD are included in the reserves for incurred but not reported.

The assets used to back group insurance liabilities at XYZ are high risk/high return assets such as commercial paper.

As a consulting actuary, your services have been retained by ABC to review the reserves to be transferred from XYZ.

Describe the work that you will do to review these reserves.
You are the Appointed Actuary for the Outstanding Life Insurance Company, a medium-sized Canadian insurance company. Recently, Outstanding has hired a Chief Risk Officer, Mrs. Juliet Montague. Mrs. Montague comes from an accounting firm where she worked in enterprise risk management. However, she has no experience with the insurance industry.

Upon taking charge of her new responsibilities, she noticed that, last year, your company produced and filed three different reports (DCAT, ORSA and a report on the target capital ratio) that seem to address essentially the same risks. She is concerned about the possibility that efforts may have been unnecessarily duplicated and would like to know if these reports can be replaced with a single report.

Compare and contrast the processes of DCAT, ORSA and establishing the internal target capital ratio regarding:

a. The objectives of each process;

b. The methods followed in each process; and

c. Regulatory requirements for each process.
**Question 19 (7 points)**

Mr. Pink is an actuary that has been offered a position with three different Ontario-based companies, for the same $100,000 annual salary, starting January 1, 2019. To help with his decision, he has been provided with the following information about the short-term disability plans offered by his potential employers:

<table>
<thead>
<tr>
<th>Company</th>
<th>Benefit Formula</th>
<th>Tax Status</th>
<th>Monthly Premium Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big</td>
<td>75% of gross salary</td>
<td>Taxable</td>
<td>$1.25/$10.00 of weekly indemnity</td>
</tr>
<tr>
<td>Bigger</td>
<td>60% of gross salary</td>
<td>Non-taxable*</td>
<td>$1.10/$10.00 of weekly indemnity</td>
</tr>
<tr>
<td>Biggest</td>
<td>60% of the first $50,000 of gross salary + 40% of the portion of gross salary that exceeds $50,000</td>
<td>Non-taxable*</td>
<td>$1.15/$10.00 of weekly indemnity</td>
</tr>
</tbody>
</table>

*Non-taxable plans have an ‘all sources’ limitation whereby the insurer will reduce the benefit to make sure that benefits from all sources do not exceed 85% of net pre-disability income. ‘Net pre-disability income’ is defined as: Earnings net of Income Tax, CPP and EI contributions.

You are also given the following income tax table applicable in Ontario:

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Marginal Tax Rate (Combined Federal and Provincial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First $42,960</td>
<td>20%</td>
</tr>
<tr>
<td>over $42,960 up to $46,605</td>
<td>24%</td>
</tr>
<tr>
<td>over $46,605 up to $75,657</td>
<td>30%</td>
</tr>
<tr>
<td>over $75,657 up to $85,923</td>
<td>31.5%</td>
</tr>
<tr>
<td>over $85,923 up to $89,131</td>
<td>34%</td>
</tr>
<tr>
<td>over $89,131 up to $93,208</td>
<td>38%</td>
</tr>
<tr>
<td>over $93,208 up to $144,489</td>
<td>43%</td>
</tr>
</tbody>
</table>

Regardless of his choice, Mr. Pink will have to contribute to the following social programs:

- **CPP**: 5.10% of contributory earnings. Contributory earnings are capped at $57,400 in 2019 and subject to the $3,500 basic exemption amount.
- **EI**: $1.62 per $100 of insurable earnings. EI maximum insurable earnings are $53,100 in 2019.
a) (3 points) Calculate the amount of weekly benefits (dollars per week) payable by each of these plans for an employee who earns $100,000/year, assuming that there are 52 weeks in a year.

b) (2 point) For each plan, calculate Mr. Pink’s monthly premium.

c) (2 point) Which plan offers the highest after-tax benefit per dollar of premium?

Show all work.
Question 20 (8 points)

You are the head of pricing for Assurama Canadian Group Long-Term Disability business, reporting to the CFO.

The information on the experience of the block of business over the last three years is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>A. Number of Claims</th>
<th>B. Claims Paid</th>
<th>C. A/E Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>500</td>
<td>$12,805,000</td>
<td>97%</td>
</tr>
<tr>
<td>2016</td>
<td>385</td>
<td>$9,640,400</td>
<td>104%</td>
</tr>
<tr>
<td>2015</td>
<td>200</td>
<td>$4,726,000</td>
<td>102%</td>
</tr>
</tbody>
</table>

Historically, the actual to expected ratio of paid claims is around 2% lower than the corresponding ratio by count.

The CFO believes that a 75% weight attributed to Assurama’s own experience is too significant. As such, you are asked to:

a) (3 points) Prepare a credibility analysis of Assurama’s experience based on the assumption that observed claims are within 5% of actual claims 85% of the time or 95% of the time.

b) (3 points) Make a recommendation as to whether full credibility should assume a 85% or 95% threshold.

c) (2 points) Discuss the merits of limited fluctuation credibility theory in light of Assurama’s pattern of experience.
Question 21 (7 points)

As a recently-minted FCIA, you are a pricing actuary for a health insurance company and have been engaged to help price a new plan design with the following provisions:

- Deductible: $100.
- Member coinsurance: 25%.
- Annual out-of-pocket limit: $500, inclusive of the deductible.

You are provided the following information on the claims (total amount claimed during the year) frequency from the company’s database.

<table>
<thead>
<tr>
<th>Claims Range</th>
<th>Frequency</th>
<th>Average Annual Claims per Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>35%</td>
<td>$0</td>
</tr>
<tr>
<td>$0.01 - $50</td>
<td>30%</td>
<td>$35</td>
</tr>
<tr>
<td>$50.01 - $150</td>
<td>15%</td>
<td>$100</td>
</tr>
<tr>
<td>$150.01 - $250</td>
<td>10%</td>
<td>$200</td>
</tr>
<tr>
<td>$250.01 - $1,100</td>
<td>5%</td>
<td>$425</td>
</tr>
<tr>
<td>$&gt;1,100.00</td>
<td>5%</td>
<td>$1,400</td>
</tr>
</tbody>
</table>

Calculate the employer’s expected claims cost per member per year under the new plan design, stating any assumptions made.

Show all work.