

THE UNIVERSITY OF WESTERN ONTARIO  
**Actuarial Science 1021A**  
**Test 2- 1 hour**  
**March 19, 2018**

Name (print clearly): \_\_\_\_\_

STUDENT ID (print clearly): \_\_\_\_\_

**INSTRUCTIONS**

1. This test is worth a total of 55 marks. There are a total of 8 pages including this cover page. Make sure you have a complete copy of the test.
2. There are a total of 5 questions. Use the detailed marking breakdown as a rough guideline for time spent on each question and question part.
3. Please answer your questions on your paper in the space provided.
4. You may use reverse pages if necessary but please indicate that you are doing so by putting PTO on the given question page.
5. Calculators are permitted.
6. Please use a pen (although you may use pencil for questions regarding calculations).
7. Values provided for this test are included on page 8. You may detach this page from your test.

<b>Question</b>	<b>Mark</b>
1. 8 marks	
2. 20 marks	
3. 10 marks	
4. 7 marks	
5. 10 marks	
Total: <b>55 marks</b>	

GOOD LUCK!

**Question 1 (8 marks)**

- (a) (5 marks) Alex is married, and was 67 years old when he applied for his OAS pension. At the time of application, he had lived in Canada for the last 32 years. His total reported income is \$20,000. His spouse also had a total report income of \$15,000 and she is 62 years of age. Working with the 2018 maximum benefit amounts provided (see page 8), determine the amount of 2018 GIS benefit that each of them will receive?

$$586.66 \cdot$$
$$586.66 \times 12 - 20,000 \times \frac{1}{4} = 2039.92$$
$$586.66 \times 12 - 15,000 \times \frac{1}{4} = 3289.92$$

- (b) (3 marks) For each of the OAS pension and the Spousal Allowance Benefits briefly comment on (i) taxation of benefits, (ii) continuation of benefit payments when an individual moves to a different country and (iii) indexing of benefits.

	OAS pension	Spousal Allowance
(i) Taxation of Benefits	X	X
(ii) Continuation of benefits when move away from Canada	✓	✓
(iii) Benefit indexing		

## **Question 2 (20 marks)**

- (a) (2 marks) Lawrence Perkins works for London City Hall as a programmer. In 2018 he is expected to earn 85,000. How much will Lawrence contribute to the CPP this year?

$$\frac{10.5\%}{2} \times \min(85,000 - 3,500, 55,900 - 3,500) = 2751.00$$

- (b) (2 marks) Samuel Hauste retired in this past January when he turned 62. His Average earnings ratio was 82%. What is his estimated CPP Retirement Pension Benefit (RPB) payment?

- (c) (2 marks) Jane Stanley is currently receiving her CPP Retirement Pension Benefit. She is now age 67 and still working at job that pays her \$60,000 yearly. What is her 2018 CPP monthly Post Retirement Pension payment amount?

$$60,000 \times 0.25 \times$$

$$= 17160.$$

- (d) (5 marks) Jennifer Jones is 55 and passed away suddenly earlier this month. Her average earnings ratio is calculated to be 85%. Her husband Bill is 50 and they have two sons aged 12 and 15. Describe the respective survivor benefits that will be paid out. Also, calculate the amount of survivor pension that will be paid to Bill.

## **Question 2 (continued)**

**(e) (5 marks)**

- (i) (2 marks)** Use the information below to determine the 2016 earnings related portion of the CPP Disability benefit paid out to Samantha, who became disabled on April 1, 2016.

Contributory period (from age 18 to date of claim) : 25 years  
Years that can be dropped out : 6 years  
Total Adjusted Pensionable Earnings : \$482,000

- (ii) (1 mark)** With regards to the 6 years that Samantha could drop out in his pension benefit calculation, what drop-out considerations are reflected? Justify your answer.

*low income due to loss of job  
or sickness.*

- (iii) (2 mark)** When will Samantha's monthly disability payments start? When will they stop?

- (f) (2 marks)** You are given that the Yearly Maximum Pensionable Earnings (YMPE) for the years 2014 through to and including 2018 are; 52,500, 53,600, 54,900, 55,300 and 55,900 respectively. If Broderick's total earned income in 2018 is \$42,500, determine his 2018 Adjustable Pensionable Earnings.

- (g) (2 marks)** Since the 2016 CPP Expansion Plans were announced in 2016, there have been additional changes made to the CPP. What are 2 changes being that will take effect in 2019?

**Question 3 (10 marks).** With regards to Long Term Care (LTC)

(a) (6 marks) *Briefly* describe each of the three types of Long Term Care.

(b) (2 marks) Provide 4 examples of Long Term Care Insurance Policy exclusions,

(c) (2 marks) Explain what is meant by the term benefit triggers and why benefit triggers are an important part of a Long Term Care Insurance Policy. Provide an example.

#### **Question 4 (7 marks)**

With regards to provincial government health plans in Canada

(a) (1 marks) What is the primary role of the Canada Health Care Act?

*protect .*

(b) (1 marks) How does British Columbia finance their provincial health plan (OHIP) costs?

(c) (2 marks) What are the eligibility requirements to be covered by the Ontario Health Insurance Program (OHIP)?

*Residence .*

(d) (3 marks) A self-employed individual who has lived in Ontario all his life is seriously ill and is hospitalized for 5 days and then spends time at home recovering for a few weeks. He has an Individual Health Insurance Policy. Outline potential expenses that would be covered by his Health Insurance Policy and those that would be covered by OHIP.

### **Question 5 (10 marks)**

- (a) **(4 marks)** Increased costs of Extended Health care Plans (EHC) is an area of concern for any employer. *Briefly* describe each of the key drivers of the costs of EHC plans?
- (b) **(3 mark)** In class we discussed various Extended Health Care(EHC) cost containment strategies. Provide three examples of cost containment strategies used in Western's faculty EHC Care Benefits and Dental Plan.
- (c) **(1 mark )** William is a faculty member the purchases some prescription drugs that are covered under his Western faculty extended health care benefits plan. The drugs cost \$200 and there is an \$8.00 dispensing fee. Calculate William's out of pocket expenses for these drugs? You are given the dispensing fee covered is capped at \$6.11.
- (d) **(2 marks)** *Briefly* describe the key provisions of Western University's Faculty Dental Plan.

**2018 Values provided: (you can gently detach this page)**

Maximum OAS monthly benefit = \$586.66; minimum income for clawback = \$75,910

Maximum GIS benefit for single, divorced or separated OAS pensioner = 876.23 (income for full reduction is 17,784)

Maximum GIS benefit for OAS pensioner with a partner not eligible for OAS or spousal allowance= 876.23 (combined income for full reduction is 42,684)

Maximum GIS benefit where both partners are OAS pensioners= 527.48 for each partner (combined income for full reduction is \$23,520)

Maximum monthly spouses allowance = \$1114.14 (income for full reduction = \$31,968)

Maximum monthly survivor allowance = \$1328.08 (income for full reduction = \$23,256)

Maximum CPP monthly retirement benefit = \$1,134.17

CPP contribution rate (ee + er) = 9.90%

YMPE = 55,900

YBE = 3,500

Flat amount for CPP disability benefit = \$485.20

Flat amount for CPP survivor benefit (younger than 65) = \$189.31

Dependent CPP flat amount benefit= \$244.64