UNIVERSITY OF VICTORIA
FINAL EXAM
April 2012

NAME: _____
STUDENT NUMBER: V00_____

Course Name & No.	Economics 317: Health Economics
Section(s)	A01
CRN:	23956
Instructor:	Auld
Duration:	2 hours

This exam has a total of 14 pages including this cover page and 0 separate handout(s).

Students must count the number of pages and report any discrepancy immediately to the Invigilator.

This exam is to be answered:

- On the paper
- In Booklets provided
- NCS Answer sheets

Marking Scheme (if appropriate)

Multiple choice: 40 marks. True/false: 30 marks. Long: 30 marks.

Materials allowed (if appropriate)

No cell phones, calculators, other electronic devices, or references permitted.

University of Victoria
Department of Economics

Economics 317
Health Economics
Final Examination

Spring 2012

Instructions. Answer all questions. Write your answers on the exam paper. No electronic devices, including but not limited to calculators and cell phones, are necessary and no such devices may be used during the exam. Good luck!

1 Multiple choice questions (40 marks).

Instructions. Select the best answer to every question. Clearly record your answers on this page. Each question is worth two marks.

MULTIPLE CHOICE ANSWERS

1.	A.	B.	C.	D.	11.	A.	B.	C.	D.
2.	A.	B.	C.	D.	12.	A.	B.	C.	D.
3.	A.	B.	C.	D.	13.	A.	B.	C.	D.
4.	A.	B.	C.	D.	14.	A.	B.	C.	D.
5.	A.	B.	C.	D.	15.	A.	B.	C.	D.
6.	A.	B.	C.	D.	16.	A.	B.	C.	D.
7.	A.	B.	C.	D.	17.	A.	B.	C.	D.
8.	A.	B.	C.	D.	18.	A.	B.	C.	D.
9.	A.	B.	C.	D.	19.	A.	B.	C.	D.
10.	A.	B.	C.	D.	20.	A.	B.	C.	D.

1. An internality occurs when

   (a) an agent's action involuntarily imposes costs or benefits on another agent without compensation.

   (b) an agent takes an action today which affects her future outcomes, but she does not fully consider the future consequences.

   (c) an agent's sequence of choices violates at least one of the Fundamental Theorems of Welfare Economics.

   (d) asymmetric information causes a market outcome to be Pareto inefficient.

2. In Economics, a good is *addictive* for a given person at a given time if

   (a) its consumption causes long-term damage to physical health, mental health, or social functioning.

   (b) an increase in consumption today causes an increase in consumption in the future.

   (c) consumption decreases lead to reduced seratonin levels in addicts.

   (d) a myopic person would choose to consume more than a forward–looking person, all else equal.

3. An important empirical prediction the rational addiction model makes is that, all else equal,

   (a) anticipated increases in future prices decrease current consumption of the addictive good.

   (b) anticipated increases in future prices increase current consumption of the addictive good.

   (c) increases in past prices have no effect on current consumption of the addictive good.

   (d) increases in current prices have no effect on current consumption of the addictive good.

4. Suppose the income elasticity of demand for dental visits is +0.1. A consumer was spending \$100 on visits and her income doubles. She will now spend:

   (a) \$10.

   (b) \$101.

   (c) \$110.

   (d) \$200.

5. An econometrician discovers that high-amenity cities in Canada, such as Victoria, tend to have more physicians per capita, and that utilization of physician services in such cities is higher than in other cities. Recalling the results of Dranove and Wehner (1994) regarding OBGYNs and childbirths, we

   (a) infer that physicians in Canada can and do induce demand for their own services.

   (b) infer that physicians in Canada do not induce demand for their own services.

   (c) conclude that we cannot reliably make inferences over the extent of supplier-induced demand from such results.

   (d) infer that more people should move to Victoria, because Victoria is awesome.

6. The economic explanation for the obesity epidemic suggests the major causes are

   (a) changes in GDP and income distribution over time.

   (b) long-run decreases in the real interest rate and maternal employment.

   (c) decreases in the price of food and increases in the costs of physical activity.

   (d) improvements in medical care technology.

7. Which of the following is NOT a valid criticism of the rational addiction model?

   (a) The model assumes people know all future prices, but future prices are actually uncertain.

   (b) The model assumes people fully understand they will become addicted, but people may not know whether or not they are prone to addiction.

   (c) There is only addictive good in the model, but in reality multiple addictive behaviors may interact.

   (d) The model predicts that addicts will regret their past decisions, but not all addicts display regret.

8. The U.S. health care system is best characterized as

   (a) free market provision of health care and insurance.

   (b) mixed public and private provision of care and insurance.

   (c) free market provision of insurance but socialized care.

   (d) free market provision of care but socialized insurance.

9. In the model of physician behavior we discussed in class, we assumed that

   (a) physicians maximize their incomes.

   (b) physicians make a labor-leisure tradeoff and are indifferent to patient health.

   (c) physicians make a labor-leisure tradeoff and must be sufficiently compensated to harm patient health.

   (d) physicians make a labor-leisure tradeoff but always seek to maximize patient health.

10. The government currently spends \$20B on highway maintenance and \$500M on asbestos removal per year. Saving another statistical life through either program is estimated to cost \$20M. Assume the only effect either program has is on lives saved. Then the government should

    (a) reallocate funding from highway maintenance to asbestos removal until expenditures are equalized across programs.

    (b) reallocate funding from asbestos removal to highway maintenance until cost to save another life is equalized across programs.

    (c) not reallocate funding across these programs.

    (d) there is not enough information to determine what the government should do.

11. The elasticity of population health to national health care expenditures in the U.S. is thought to be

    (a) highly elastic and positive.

    (b) highly inelastic and positive.

    (c) highly inelastic and negative.

    (d) unknown; it is impossible to estimate that relationship.

12. For men, an increase in income is associated with

    (a) a decrease body weight.

    (b) an increase in body weight.

    (c) a decrease in body weight at low incomes, and a increase in body weight at high incomes.

    (d) an increase in body weight at low incomes, and a decrease in body weight at high incomes.

13. "Obamacare" in the U.S. requires all people to purchase at least minimal health insurance. One theoretical rationale for this policy is a reduction in problems caused by

    (a) moral hazard in insurance markets.

    (b) profiteering by HMOs and other providers.

    (c) adverse selection in insurance purchases.

    (d) pecuniary externalities.

14. The police departments in City A and City B are comparable except that officers in City A face a risk of death on the job of 1/10,000 per year, compared to 1/20,000 per year in City B. Officers in City A earn $1,000 per year than in City B. We can infer that police officers are willing to pay how much at the margin to save an officer's life?

    (a) $1,000,000

    (b) $2,000,000

    (c) $10,000,000

    (d) $20,000,000

15. In Canada, people with a university degree live an average of 4.4 years longer than people with a high school diploma. Therefore,

    (a) a policy which succeeds in getting another person to get a university degree would increase that person's life expectancy by 4.4 years.

    (b) a new medical treatment which improves life expectancy would induce more people to go to university.

    (c) some "third variable" like rate of time preference drives both health and educational choices.

    (d) we cannot deduce anything about the effect of education on life expectancy without more information.

16. An outcome is Pareto efficient if:

    (a) no one can be made better off without making at least one person worse off.

    (b) profits are maximized given resource constraints.

    (c) all markets, including pseudo-markets for socially financed health care, clear.

    (d) utility is maximized in steady state.

17. Health care expenditures in Canada as a fraction of GDP are currently roughly:

    (a) 6%.

    (b) 10%.

    (c) 14%.

    (d) 21%.

18. A heart transplant is successful with probability 2/3, otherwise the patient dies. If the transplant is successful the patient lives for two more years. If the discount rate is 25%, what is the expected present value of life years for heart transplant patients? (Note: discount the second but not first year.)

    (a) 1/6 years.

    (b) 1.0 years.

    (c) 1.1 years.

    (d) 1.2 years.

19. The evidence suggests that taxing sugary drinks such as soda

    (a) has a small effect on the distribution of body weight.

    (b) has a large effect on the distribution of body weight.

    (c) has the unintended effect of increasing obesity rates.

    (d) drastically reduces obesity rates but also increases underweight rates.

20. Your utility with wealth W is $U(W) = \sqrt{W}$. You have wealth $W = 100$. With probability 20% you will need surgery, in which case your wealth will fall to $W = 25$. What is the maximum amount you would pay for full insurance against this risk?

    (a) 16.

    (b) 17.

    (c) 18.

    (d) 19.

2 True/false questions (30 marks).

Instructions. Answer all questions clearly and concisely. Assert one of: **true, false**, or **uncertain**. Provide a brief explanation (one to three sentences, at most one graph if needed). **No marks will be awarded for undefended answers.** Each question is worth five marks.

1. Health care is a public good.

2. The RAND Health Insurance Experiment showed that more generous health insurance has no effect on health care utilization.

3. Smokers earn 10% less than non–smokers, therefore, smoking causes decreases in wages and/or hours of labour supplied.

4. The observed large decreases in deaths due to communicable disease following the development of successful vaccines disproves the McKeown Thesis.

5. If higher income causes higher health, then costless redistribution from the rich to the poor will increase average health.

6. Population health care costs in Canada would drastically fall if most smokers were to immediately quit smoking.

3 Long answer questions (30 marks).

Instructions. Answer both questions clearly and concisely. Write your answers on this paper in the space provided. Undefended answers are worth no marks. Remember to clearly label the axes and other objects in graphs. Each question is worth 15 marks.

1. For every person, health (h) is determined by income (y) and by a genetic factor (g) through the production function: $h = 2y + g$.

   (a) Does income cause health in this society?

   (b) Draw a production function for health, with income on the horizontal and health on the vertical axis, for a person with $g = 2$, and on the same diagram the production function for someone with $g = 4$.

   (c) Suppose the government can costlessly redistribute income from relatively rich to relatively poor people. What effect does redistribution have on average health?

   (d) Suppose income is determined by the same genetic factors as health:

   $$y = 6 - \left(\frac{1}{2}\right) g.$$

   Show data from this society would display zero correlation between income and health.

   (e) Very briefly reconcile your answers to (a) and (d).

ANSWER: (also use following page as needed.)

ANSWER TO LONG ANSWER QUESTION 1 CONTINUED:

2. Becker and Murphy's (1988) rational addiction model considers people who face a tradeoff between consumption of a potentially addictive good (c) and other goods and services (y). In the context of this model:

   (a) Briefly define S, the "stock of addictive capital." Sketch a graph with time on the horizontal axis and S on the vertical axis. Depict the time path of S for a person who consumes the addictive good at a constant rate between time 0 and time T, and then ceases consumption of the good at time T.

   (b) Making the same assumptions we did in class, sketch $c(S)$, the person's optimal consumption given their level of S, against S. Let $r(S)$ denote the level of consumption such that S does not rise or fall over time; sketch $r(S)$ on the same graph.

   (c) Show the consumer's equilibrium level of consumption of the addictive good. Briefly illustrate why this equilibrium is stable.

   (d) On a new graph, illustrate a permanent increase in the price of the addictive good, assuming the price increase is such that the person does not choose to cease consuming the addictive good. Show both the person's short and long–run responses.

   (e) On another new graph, illustrate a permanent increase in the price of the addictive good that does cause the consumer to choose to cease consuming the addictive good.

ANSWER: (also use following page as needed.)

ANSWER TO LONG ANSWER QUESTION 2 CONTINUED:

EXTRA SPACE. *Use as needed to answer short answer questions or as scratch space.*

END.