# AUSTRALIAN NATIONAL UNIVERSITY

*Second Semester Examination – November 2002*

## LAW AND ECONOMICS P, H and G (ECON 2120/4004/4021/8047)

*Study Period : 15 minutes*

*Time Allowed : THREE Hours*

Permitted Material: None

DIRECTIONS:

- Students enrolled in ECON 2120 (P) are to complete questions 1,2,3,4 and 5 only.
- Students enrolled in ECON 4004/4021/8047 (H or G) are to complete questions 1,2,3,4 and 6 only.

1.

The city of Dystopia has a very inefficient criminal law system. Official data suggests that if you are arrested for a crime but you are actually innocent, there is still a 40% chance that a jury will still find you guilty. On the other hand, if you actually commit a crime, there is an $x$% chance that a jury will find you innocent, where $0<x<100$. In addition to this, criminal prosecutors think that 95% of people who are arrested by the police are guilty.

A. How often would you expect to observe criminal trials and plea bargaining in Dystopia? Who is more likely to go to trial and who is more likely to settle – people who are innocent or people who are guilty? How do your conclusions depend on the value of $x$, if at all? Explain. (30 marks)

B. Suppose that Dystopia costlessly reforms its legal system so that there is now only a 30 per cent chance that an innocent person will be found guilty. Would crime in Dystopia increase or decrease? How would you expect the crime rate to vary with the level of $x$? Explain. (30 marks)

2.

A. Define and briefly explain the remedy of *expectation damages* in contract law. Taking the reliance investment $r$ by the buyer as given, does this damage measure induce efficient breach decisions? Explain. (10 marks)

B. Again, consider the remedy of expectation damages, but suppose that when a seller breaches a contract under this rule, he faces a cost of $k_S$ of going to court. Does your answer in part A change? Explain. (20 marks)

C. Define and briefly explain the remedy of *reliance damages* in contract law. Does this damage measure induce efficient breach *and* reliance decisions? Explain. (15 marks)

D. Again, consider the remedy of reliance damages, but suppose that when a seller breaches a contract under this rule, he faces a cost of $k_S$ of going to court. Does your answer in part C change? Explain. (15 marks)

3.

In addition to choosing a level of care, injurers and victims can affect the risk of an accident by their choice of how *frequently* or *intensively* they engage in a risky activity. This is called the party's *activity level*.

Consider a *unilateral care model* of accidents, where both the level of care and the level of activity are chosen by the injurer.

A. In this unilateral care model, how would you compute the efficient levels of care and levels of activity? Explain. (10 marks)

B. In this unilateral care model, does a rule of *no liability* induce the injurer to take the efficient levels of care or choose the efficient level of activity? Explain. (10 marks)

C. In this unilateral care model, does a rule of *strict liability* induce the injurer to take the efficient levels of care or choose the efficient level of activity? Explain. (20 marks)

D. In this unilateral care model, does a *negligence rule* induce the injurer to take the efficient levels of care or choose the efficient level of activity? Explain. (20 marks)

4.

A common problem in compensating victims for accidental harm is when injurers are *wealth constrained* - when the injurer's assets are less than the damage that they might actually cause.

Suppose that the injurer has assets of $a > 0$, but that $a < A$, where $A$ is the damage caused to victims.

Consider the bilateral care model of accidents studied in class, and consider the following legal rules:

(i) No liability

(ii) Strict liability

(iii) Negligence Rule

(iv) Strict Liability with a Defence of Contributory Negligence

(v) Negligence Rule with a Defence of Contributory Negligence

(vi) Comparative Negligence

Which of these legal rules can induce both injurers and victims to take an efficient amount of care when injurers are wealth constrained? (60 marks)

5.

In many situations, accidental harm is caused by more than one injurer. That is, the levels of care of more than one injurer affect the probability of an accident.

For example, suppose that victims cannot take any care to avoid accidents, and suppose that there are two firms who are potential injurers. Then the probability of an accident is:

$$p(x_1, x_2)$$

where $x_1$ is the level of care of firm 1, and $x_2$ is the level of care of firm 2.

In what follows, let $w_1$ be the marginal cost of care for firm 1, let $w_2$ be the marginal cost of care for firm 2, and let $A>0$ be the dollar value of damage to the victim if an accident occurs.

Consider first the following *strict liability rule*: irrespective of the level of care taken by firms 1 and 2, if there is an accident, firm 1 will be liable for a pre-specified fraction $s_1$ of the victim's losses, and firm 2 will be liable for a pre-specified fraction $s_2$ of the victim's losses, where $s_1 + s_2 = 1$.

A. Assuming that the firms cannot collude among themselves, does this strict liability rule induce either of the firms to take an efficient level of care? Explain. (10 marks)

B. Does your answer in part A change if firms 1 and 2 can collude amongst themselves (for example, if 1 and 2 merged to form a single firm)? Explain. (10 marks)

Now consider the following *negligence rule*: the court sets due standards of care, $z_1$ and $z_2$ for firms 1 and 2, and applies these due standards as follows:

(i) If a firm meets its due standard of care, it is not liable.

(ii) If firm 1 is the *only* firm which does not meet its due standard of care, it will be held liable for the *total amount* of the victim's losses. Similarly, if firm 2 is the *only* firm which does not meet its due standard of care, it will be held liable for the *total amount* of the victim's losses.

(iii) If *both* firms 1 and 2 do not meet their due standards of care, they will *both* be held liable for some pre-specified portion of the victim's losses, with firm 1 paying a fraction $s_1$ of the losses, and injurer 2 paying a fraction $s_2$ of losses where again we have $s_1 + s_2 = 1$.

C. Assuming that firms cannot collude among themselves, does this negligence rule induce either of the firms to take an efficient level of care? Explain. (20 marks)

D. Does your answer in part C change if firms 1 and 2 can collude amongst themselves? Explain. (20 marks)

6.

In many situations, accidental harm is caused by more than one injurer. That is, the levels of care of more than one injurer affect the probability of an accident.

For example, suppose that victims cannot take any care to avoid accidents, and suppose that there are $n$ >1 firms who are potential injurers. Then the probability of an accident is:

$$p(x_1, x_2, \ldots, x_n)$$

where $x_i$ is the level of care of firm $i$.

In what follows, let $w_i$ be the marginal cost of care for firm $i$, and let $A$>0 be the dollar value of damage to the victim if an accident occurs.

Consider first the following *strict liability rule*: : irrespective of the level of care taken by firm $i$ , if there is an accident, firm $i$ will be liable for a pre-specified fraction $s_i$ of the losses where $\sum_{i=1}^{n} s_i = 1$ and $0 < s_i < 1$.

A. Assuming that the firms cannot collude among themselves, does this strict liability rule induce any of the firms to take an efficient level of care? Explain. (10 marks)

B. Does your answer in part A change if the firms can collude amongst themselves (for example, if all of the firms merged to form a single firm)? Explain. (10 marks)

Now consider the following *negligence rule*: the court sets due standards of care, $z_i$ for each firm, and applies these due standards as follows:

(i) If a firm meets its due standard of care, it is not liable.

(ii) If any single firm $i$ is the *only* firm which does not meet its due standard of care, it will be held liable for the *total amount* of the victim's losses.

(iii) If some subset $S$ of firms do not each individually meet their due standards of care, then each of these firms will be held individually liable for some pre-specified portion of the victim's losses, with firm $i$ paying a fraction $s_i$ of the losses, and where $\sum_{i \in S} s_i = 1$.

C. Assuming that firms cannot collude among themselves, can such a negligence rule induce any of the firms to take an efficient level of care? Explain. (20 marks)

D. Does your answer in part C change if the firms can collude amongst themselves? Explain. (20 marks)