THE UNIVERSITY OF MELBOURNE
DEPARTMENT OF ECONOMICS
SEMESTER 1 ASSESSMENT, 2010
316-102 INTRODUCTORY MICROECONOMICS

Time Allowed: **TWO** hours
Reading Time: 15 minutes

This examination paper contributes **60%** to the assessment in 316-102.

The **Response Sheet** for the multiple-choice questions should be inserted in the back of the examination script book at the end of the examination. For the multiple-choice questions, you may use the examination script books to make notes or calculations. These notes will **NOT** be taken into account for your assessment.

SECTION A: ANSWER ALL QUESTIONS

This section is worth **25%** of the total exam marks.
Answer all questions. Fill in the small circle in the appropriate place with a 2B pencil on the **Response Sheet**. An incorrect answer, no answer, or more than one answer, will receive a zero mark.

SECTION B: ANSWER ALL QUESTIONS

This section is worth **25%** of the total exam marks.
Answer all questions. Each question is worth equal marks.

SECTION C: ANSWER ALL QUESTIONS

This section is worth **50%** of the total exam marks.
Answer all questions. Questions are worth different marks.

Other Instructions

Foreign/English language dictionaries are allowed into the examination room.
No other materials are allowed.

This exam paper may be removed from the examination room.
A copy of this exam paper will be held in the Baillieu Library.

This exam paper has 11 pages.

SECTION A

ANSWER ALL QUESTIONS IN THIS SECTION

This section is worth 25% of the total exam marks.
All questions in this section are worth the same number of marks.
For each question select the one BEST answer. Incorrect answers, multiple answers, or no answer, will receive zero.
Mark your answer on the Response Sheet.

1. OzAir has a 7.00am flight from Melbourne to Sydney. Capacity on the flight is 250 passengers. So far 200 tickets are sold. The cost of airport charges, fuel and wages for pilots is $40,000. None of these costs vary with the number of passengers carried. The cost for every extra passenger that Qantas now carries will be $50 for extra flight crew, $10 for food and $5 for cleaning. What is the minimum price at which Qantas should be willing to sell an extra ticket?

a) $265
b) $65
c) $225
d) $200

2. You own an ice-cream stall at Sandy Beach. You can sell each ice-cream for $2. With extra opening hours for your stall you believe that you can increase your sales as shown in the table below. For each hour the stall is open the opportunity cost of your time is $15. For how many hours should you open your stall?

Hours of opening	**Total sales of ice-creams**
0	0
1	20
2	35
3	45
4	50
5	50

a) 1
b) 2
c) 3
d) 4

3. Wheat and barley are substitutes. Both goods are traded in perfectly competitive markets. Poor weather conditions reduce the size of the wheat crop. The effect on the markets for wheat and barley will be:

a) An increase in the equilibrium price of wheat, and decrease in equilibrium quantity of barley traded.
b) A decrease in equilibrium price of wheat, and an increase in equilibrium price of barley.
c) An increase in equilibrium quantity of wheat traded, and an increase in equilibrium quantity of barley traded.
d) An increase in equilibrium price of wheat, and an increase in equilibrium quantity of barley traded.

4. The market for CDs is perfectly competitive, and it is known that demand for CDs is price-elastic. Two changes to the market occur: first, an increase in consumer income increases demand for CDs; and second, an increase in the cost of manufacturing CDs decreases supply. The 'Confederation of CD Producers' is concerned about the effect of these two changes on total revenue to suppliers. It should conclude that the effect will be:

a) Positive provided that the increase in demand is sufficiently large, and the decrease in supply is sufficiently small.
b) Negative because demand is price-elastic, and the increase in demand and decrease in supply must cause a price increase for CDs.
c) Positive provided that the increase in demand is sufficiently small, and the decrease in supply is sufficiently large.
d) Positive if the effect of the changes in demand and supply is to increase quantity traded, and negative if the effects of changes in demand and supply is to decrease quantity traded.

5. There are five potential suppliers of a car wash service. Sally, Simon, Sonia, Stewart and Sam are each willing to provide 1 car wash. Their respective opportunity costs are: $1, $3, $5, $7, and $9. There are five potential consumers of the car wash service. Cate, Colin, Chloe, Chris and Cassie are each willing to purchase 1 car wash. Their respective willingness to pay are: $16, $13, $10, $7 and $4. In a competitive equilibrium the consumer surplus and producer surplus will be:

a) The same amount.
b) Less than total surplus due to deadweight loss.
c) $18 and $12 respectively.
d) $12 and $18 respectively.

6. Consider the information below on costs:

Quantity	FC	MC
1	100	5
2	100	6
3	100	7
4	100	8
5	100	9

Which of the following is not correct for quantities shown in the table?

a) The firm will be willing to supply at any price above 5 in the short-run.
b) AVC is increasing.
c) ATC decreases and then increases.
d) AFC is decreasing.

7. Stanley's Sandwich Take-away has two possible methods of production it can use. The costs for the two production methods are shown below:

	Production method 1		Production method 2	
Sandwiches made per hour	FC	MC	FC	MC
1	50	2	10	5
2	50	4	10	10
3	50	6	10	15
4	50	8	10	20
5	50	10	10	25
6	50	12	10	30

In the long-run, when Stanley is able to choose between the production methods, which method should be choose?

a) Stanley should always use production method 1.
b) Stanley should always use production method 2.
c) Stanley should use production method 1 if he expects the quantity sold will be less than or equal to 4 units, and otherwise use production method 2.
d) Stanley should use production method 2 if he expects the quantity sold will be less than or equal to 4 units, and otherwise use production method 1.

8. The market for take-away coffee in Australia is perfectly competitive with many identical suppliers. Initially the market is in long-run equilibrium. Then a decrease in demand for take-away coffee occurs. Which of the following is correct?

a) In the short-run all firms will make positive economic profits.
b) After the market adjusts to the change in demand, the new long-run equilibrium price must be lower.
c) After the market adjusts to the change in demand, in the new long-run equilibrium each firm will make zero economic profits.
d) In the new long-run equilibrium, after the market adjusts to the change in demand, there will be more suppliers in the market.

9. Consider the following information on demand for membership of the Melbourne University Sports Union by students and staff

Price	Qty demanded	
	Students	Staff
$30	1	0
$25	2	1
$20	3	2
$15	4	3
$10	5	4
$5	6	5
$0	7	6

The FC of supplying Sports Union services is $50, and the MC of supplying a membership is $4. The long-run profit-maximizing prices for the Sports Union to charge for students and staff are:

a) Both students and staff should be charged $25.
b) The Sports Union cannot cover its total costs in the long-run and therefore should not operate.
c) Students should be charged $20, and staff $15.
d) Students should be charged $15, and staff $10.

10. What are the set of Nash equilibria of the game described in the matrix below?

		Bella's Better Grow		
		Low price	Medium price	High price
Freida's Fertiliser	Low price	2,6	3,8	2,10
	Medium price	5,1	3,6	1,5
	High price	8,4	6,3	0,2

a) {Low price; Low price}.
b) {Medium price; Medium price} and {High price; High price}.
c) {High price; Low price} and {Low price; High price}.
d) {Medium price; Low price} and {Low price; High price}.

SECTION B

ANSWER ALL QUESTIONS IN THIS SECTION

This section is worth 25% of the total exam marks.
All questions in this section are worth the same number of marks.
For each of the following questions:
Consider the statements made by Alan Accountant and Edwina Economist. Say whether you believe each statement is correct or incorrect. Briefly explain your answer. Note that most of the marks will be given for your explanation.

Question B1

Alan Accountant and Edwina Economist are discussing the decision by the Durr government in Ozland to increase the tariff on imports of t-shirts from $1 per t-shirt to $5 per t-shirt. T-shirts are traded in a perfectly competitive world market in which Ozland is a small country. The world price is $10. Alan says: 'This is a big increase in the tariff per t-shirt, so there will be a big decrease in the well-being of society in Ozland.' Edwina says: 'I disagree. The effect of the higher tariff mainly depends on the price elasticity of supply of t-shirts from suppliers in Ozland, and on the price elasticity of demand for t-shirts by buyers in Ozland. We need to know this information to understand how much effect the higher tariff will have on well-being in Ozland.'

Question B2

The Durr government has made a law that makes Artslet Co. the monopoly supplier of telephone services in Ozland. Alan Accountant and Edwina Economist are discussing how government intervention may therefore be required to correct for market failure in the market for telephone services in Ozland. Alan says: 'Because Artslet Co. is a monopolist, it will supply less than the efficient quantity of services. Hence the government could improve well-being of society in Ozland by paying Artslet Co. a subsidy that will induce it to increase its quantity supplied.' Edwina replies: 'I agree that a subsidy will increase the quantity of services provided, which will therefore improve society's well-being. But this policy means most of the surplus from trade goes to Artslet Co. A better policy – which will mean that most of the surplus from trade will go to buyers – is to force Artslet Co. to set a price equal to the competitive equilibrium price.'

Question B3

Alan Accountant and Edwina Economist are deciding whether to donate to a charity organisation that wants to build a new library in a remote area of Ozland. They also need to decide whether to make their decisions on donations simultaneously or sequentially. They know that only if they both donate can the library be built. For each of them, their payoff depends on whether the project is completed (zero if not completed, and 100 if completed); and whether they donate (zero if no donation, and -50 if donate). Hence the game table for the simultaneous version of the game is:

		Alan	
		Not donate	Donate
Edwina	Not donate	0,0	0,-50
	Donate	-50,0	50,50

Alan Accountant says: 'It doesn't matter what process we use for making donations. The outcome will always involve us both deciding to 'Donate'.' Edwina Economist says: 'I disagree. If we make our decisions simultaneously a possible outcome is for us both to choose to 'Not donate'. Whereas if we make our choices sequentially then, regardless of who makes the first and second choices, the outcome should involve us both choosing to 'Donate'.'

SECTION C

ANSWER ALL QUESTIONS IN THIS SECTION

This section is worth 50% of the total exam marks.

Question C1 (20% of total marks)

Part A (10 marks)

"In the dry south-western part of California's Central Valley, almond-growers are resorting to desperate measures. Some are trimming their trees so they can survive on less water...
This [the market for water in California] is no free market. The state [government] sets the price, and since demand even at $500 per acre-foot greatly exceeds supply, water must be rationed...
The trouble is there is not enough water to go round. Snow levels in the Sierra Nevada mountains [a major source of water to California] are below normal for the third year in a row...
As farmers take land out of production, employment falls, and the price of some crops is likely to rise..."
('Dust to dust', The Economist, March 7 2009, p.70)

(3 marks) (a) Use the demand/supply model to show how it could happen that 'the state [government] sets the price' and 'demand...greatly exceeds supply'.
(3 marks) (b) Compare the consequences for the well-being of society in California of: (i) Government setting the price of water; and (ii) Allowing the price of water to be the competitive equilibrium price where market demand and supply are equal.
(2 marks) (c) In the situation where the state sets the price of water, use the demand/supply model to show how a decrease in water from snow in the Nevada mountains would affect the market outcome.
(2 marks) (d) Use the demand/supply model to show how '...as farmers take land out of production...the price of some crops is likely to rise'.

Part B (10 marks)

'The vaccination program Dr Galvani studied was for influenza in America, a country where people are offered flu jabs once a year to protect them from the most severe form of the disease likely to be in circulation that winter.
Dr Galvani asked almost 600 university employees about their attitudes towards flu jabs for themselves and their families. Her survey found that people aged 65 and over were more likely to be vaccinated than other adults...that makes perfect sense, as the elderly are at greatest risk of dying if they contract influenza. However, as the parents of any small child know, it is the young who bring pestilence into the home. Thereafter, adults spread coughs and sneezes into their workplaces. Vaccinating the young would reduce the spread of flu, thus saving lives. The researchers therefore asked whether any children living in the household had been vaccinated and found that immunisation rates for the young were lower than for adults. Again, that makes perfect sense, since children rarely die of seasonal influenza.'
'Pricking consciences', The Economist, March 17 2007, page 86.

(3 marks) (a) Explain why there is likely to be an external effect associated with the decision an individual member of society makes about whether to have a flu vaccination.
(5 marks) (b) What do you think the article is suggesting about the relative size of private marginal benefits to vaccination for older people compared to children? What is the article suggesting about the relative size of the social marginal benefits to vaccination for older people compared to children? What do you think this will imply about the difference between the efficient level of vaccination and actual level of vaccination for (i) older people; and (ii) children?
(2 marks) (c) Suggest a policy solution that would assist in ensuring that the socially optimal proportion of the population has flu vaccinations.

Question C2 (15% of total marks)

Part A (5 marks)

'There is nothing the computer industry likes better than a new idea…'Cloud computing' is the latest example…The idea is that computing will increasingly be delivered as a service, over the internet, from vast warehouses of shared machines… There are benefits to companies [from cloud computing]. By switching to cloud-based email, accounting, and customer tracking systems, firms can reduce complexity and maintenance costs…Providers of cloud services, meanwhile, can benefit from economies of scale. Why should every company or university set up its own mail server, when Google or Microsoft can do it more efficiently?'
'Battle of the clouds', The Economist, October 17 2009, p.11

(3 marks) (a) Describe two reasons why the excerpt from the article suggests that firms may lower their computing costs by using 'cloud computing'.
(2 marks) (b) Suggest two potential disadvantages for a firm of using 'cloud computing' as a way of obtaining computer services it needs.

Part B (10 marks)

The economic consultant 'Never Wrong Ltd.' seeks your advice on what would be a profit-maximizing strategy for their clients. These clients are firms that operate in perfectly competitive markets. Marginal cost of both firms increases with the quantity of output they supply. ATC for both firms is U-shaped with the quantity of output. MC intersects ATC at the minimum point of ATC. Further information regarding the firms' costs and revenues, at current levels of output, is as follows:

	Firm 1	**Firm 2**
Price	10	10
MR	10	10
MC	15	5
ATC	5	10

Would your advice for each firm be to: (i) Increase output; (ii) Decrease output; (iii) Shut down operations in the long-run; or (iv) Seek new cost and price data due to measurement error in the original data?

Question C3 (15% of total marks)

Part A (9 marks)

Two players are involved in a game. In the game each player begins with $10. Each player must simultaneously make a choice of how much of the $10 to allocate between two accounts: a 'private' account, and a 'public' account. Money allocated to the private account by a player is kept by that player. Money allocated to the public account is multiplied by 1.5, and then distributed back equally to each of the two players. Each player has three possible choices: (i) Allocate $0 to the public account; (ii) Allocate $5 to the public account; and (iii) Allocate $10 to the public account.

(5 marks) (a) Draw a game table to represent this game.

(1 mark) (b) Do players have a strict dominant strategy in this game?

(2 marks) (c) What is the Nash equilibrium of the game?

(1 mark) (d) Does the Nash equilibrium outcome maximise the total payoff to players? How can you explain this result?

Part B (6 marks)

Ned Kelly is robbing a bank. The manager of the bank must decide whether to 'Give' or 'Not give' money to Ned. Ned observes the bank manager's choice, and if the bank manager chooses to 'Not give' the money, Ned must then decide whether to 'Blow up' or 'Not blow up' the bank. (Ned does not need to make this decision if the bank manager chooses to 'Give' the money.)

(2 marks) (a) Draw a game tree for this game (excluding payoffs).
(4 marks) (b) Make up payoffs for the bank manager and Ned which:
(i) Make it a rollback equilibrium for the bank manager to choose to 'Not give' the money and for Ned to 'Not blow up' the bank; and
(ii) Make it a rollback equilibrium for the bank manager to choose to 'Give' the money and for Ned to choose to 'Blow up' the bank.

End of Examination

GENERAL PURPOSE DATA SHEET 1

SIDE 1

NCS Australasia

2B PENCIL

- Use a 2B pencil ONLY
- Please erase mistakes fully

WRITE YOUR FULL NAME HERE

ID NUMBER	SPECIAL CODES
	A B C D E F G H I J

WRITE-IN AREA 1

WRITE YOUR STUDENT NUMBER AND

FILL IN CORRESPONDING RESPONSE CIRCLES.

USE BLACK LEAD PENCIL.

WRITE-IN AREA 2

RESERVED AREA

PUT YOUR ANSWERS HERE BY COLOURING IN THE CORRESPONDING RESPONSE CIRCLE FOR EACH QUESTION.

USE BLACK LEAD PENCIL.

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100