Ollscoil na hÉireann, Gaillimh
National University of Ireland, Galway

Semester II Examinations, 2004/05

Exam Code(s)	1BA5
Exam(s)	1st BA (Economic and Social Studies)
Module Code(s)	EC120
Module(s)	Natural and Social Environment
Paper No.	2
Repeat Paper	_____ Special Paper
External Examiner(s)	Professor Vincent Munley
Internal Examiner(s)	Mr. Brendan Kennelly
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Instructions: Students are required to answer **all** multiple-choice questions in Section A (100 Marks) and any **4** questions in Section B (240 Marks). All questions in Section B carry equal marks.

Duration	3hrs
No. of Answer books	4

Requirements:

Handout	
MCQ	
Statistical Tables	
Graph Paper	
Log Graph Paper	
Other Material	

No. of Pages	11 (Including cover page)
Department(s)	Economics

Section A

Multiple Choice Questions (100 Marks)

Please write your answers to the following multiple-choice questions on the first page of your answer book. Write your answers in the same order as the questions and use CAPITAL letters only.

Negative marking applies in this section (5 marks for a correct answer, 0 marks for an unanswered question and a penalty of 0.5 for an incorrect answer).

1. Jack's inheritance of €640,000 is divided between his three sons, Joe, Peter and Pat in the ratio of 2:1:5. The amount received by Pat is
   (a) €80,000
   (b) €160,000
   (c) €400,000
   (d) €200,000

2. $\frac{2}{5} \times \frac{10}{4} =$
   (a) $\frac{12}{9}$
   (b) $\frac{8}{50}$
   (c) $\frac{1}{2}$
   (d) 1

3. A quadratic equation
   (a) can be written in the form $ax^2 + bx + c = 0$
   (b) can have a maximum or a minimum point
   (c) is linear
   (d) has a constant slope
   (e) (a) and (b) above

4. There are 36 B.A. students and 10 B.Ed. students in the first year economics class. What percentage of the class are BA students?
   (a) 87%
   (b) 78%
   (c) 22%
   (d) 80%

5. A graph that shows the relationship between two variables is called
   (a) a pie chart
   (b) a bar chart
   (c) a time series graph
   (d) a scatter diagram

6. In order for a market to support superstars it must have which of the following characteristics?
   (a) It must be involved in professional athletics
   (b) Every customer must want the good supplied by the best producer and the technology must exist for the best producer to supply every customer at low cost
   (c) Every customer must be willing to pay an enormous amount for the product and the product must be a necessity
   (d) Every customer must be indifferent to the price they pay and the seller must be a competitor in the market for the good

7. If a nation has an absolute advantage in the production of a good
   (a) it can produce that good at a lower opportunity cost than its trading partner
   (b) it can produce that good using fewer resources than its trading partner
   (c) it can benefit by restricting imports of that good
   (d) it will specialize in the production of that good and export it
   (e) none of the above

8. If free trade is allowed, a country will export a good if the world price is
   (a) below the before-trade domestic price of the good
   (b) above the before-trade domestic price of the good
   (c) equal to the before-trade domestic price of the good
   (d) none of the above

9. Suppose the world price is below the before-trade domestic price for a good. If a country allows free trade in this good
   (a) consumers will gain and producers will lose
   (b) producers will gain and consumers will lose
   (c) both consumers and producers will gain
   (d) both producers and consumers will lose

10. An externality is
   (a) the benefit that accrues to the buyer in a market
   (b) the cost that accrues to the seller in a market
   (c) the uncompensated impact of one person's action on the well-being of a bystander
   (d) none of the above

11. If one person's consumption of a good diminishes other people's use of the good, the good is said to be
   (a) a common resource
   (b) a good produced by a natural monopoly
   (c) rival
   (d) excludable

12. To internalize a positive externality, an appropriate public policy response would be to
    (a) ban the good creating the externality
    (b) have the government produce the good until the value of an additional unit is zero
    (c) subsidize the good
    (d) tax the good

13. The Tragedy of the Commons is a parable that illustrates why
    (a) public goods are underproduced
    (b) private goods are underconsumed
    (c) common resources are overconsumed
    (d) natural monopolies overproduce goods

14. If a person can be prevented from using a good, the good is said to be
    (a) a common resource
    (b) a public good
    (c) rival
    (d) excludable

15. The most important factors of production are
    (a) money, stocks and bonds
    (b) water, earth and knowledge
    (c) management, finance, and marketing
    (d) labour, land and capital

16. The value of marginal product of labour is
    (a) the price of the output times the wage rate
    (b) the wage rate times the quantity of labour
    (c) the price of the output times the marginal product of labour
    (d) the wage rate times the marginal product of labour
    (e) none of the above

17. An increase in the demand for apples will cause
    (a) an increase in the price of apples
    (b) an increase in the value of the marginal product of apple pickers
    (c) an increase in the demand for apple pickers
    (d) an increase in the wage of apple pickers
    (e) all of the above

18. An individual's labour supply curve
    (a) is usually upward sloping
    (b) is usually downward sloping
    (c) is vertical
    (d) is usually upward sloping but can be backward bending

19. The demand for food
    (a) is generally income inelastic
    (b) grows slowly over time
    (c) has grown rapidly as a result of new technology and improved farm methods
    (d) is generally income elastic
    (e) both (a) and (b) above

20. Government intervention in the agricultural sector can take the form of
    (a) subsidies
    (b) minimum prices
    (c) quotas
    (d) buffer stocks
    (e) all of the above

Section B

Question 1 (60 marks)

(a) (50 marks)

Suppose a worker in Germany can produce 15 computers or 5 tons of grain per month. Suppose a worker in Poland can produce 4 computers or 4 tons of grain per month. For simplicity assume that each country has 1 worker.

(i) Graph the production possibilities frontier for each country. Put computers on the vertical axis and grain on the horizontal axis.

(ii) What is the opportunity cost of a computer in Germany? What is the opportunity cost of a ton of grain in Germany?

(iii) What is the opportunity cost of a computer in Poland? What is the opportunity cost a ton of grain in Poland?

(iv) Which country has absolute advantage in producing computers? Grain?

(v) Which country has comparative advantage in producing computers? Grain?

(vi) Each country should tend toward specialization in the production of which good? Why?

(vii) Suppose Germany and Poland settle on a price of 2 computers for 1 ton of grain or _ ton of grain for a computer. Suppose each country specializes in production and they trade 4 computers for 2 tons of grain.

(a) Plot the final consumption points on the graphs you made in part (b)

(b) Do both countries gain from the trade?

(b) (10 marks)

There are a number of arguments made to support trade restrictions. Outline and explain three of these arguments.

Question 2 (60 Marks)

(a) 30 marks

A family bakery in Sligo sells three confectionery items, biscuits, cakes and pastries. Output and price are given in the table below

	2002		2003		2004	
Product	Q_0	P_0	Q_1	P_1	Q_2	P_2
Biscuits	10,000	2.00	11,000	2.50	11,300	2.70
Cakes	1,500	3.50	2,000	4.00	2,200	4.30
Pastries	4,000	1.00	4,200	1.30	4,500	1.50

(i) Using 2002 as the base year construct a Paasche index for the data.

(ii) Convert the base of the Paasche index calculated in part (i) to 2003.

(b) 15 marks

Solve the following:

(i) $(x + 5)(x - 2) = 0$

(ii) $5x + 12 = 27$

(iii) _ x _

(c) 5 marks
The national average house price increased by 8.5% last year and the average house now costs €255,000. What was the national average house price last year?

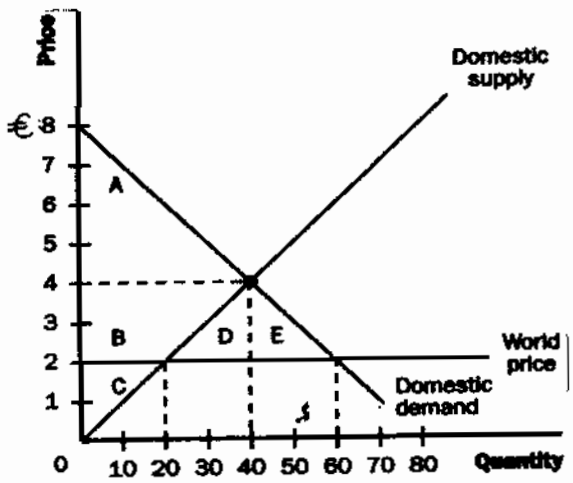
(d) 10 marks
Data on Irish Gross Domestic Product (GDP) at constant (1995) market prices, for 1997-2003, is outlined below. Draw a time series graph for this data.

Year	GDP (€m)
1997	63,000
1998	69,000
1999	76,000
2000	84,000
2001	89,000
2002	94,000
2003	98,000

Question 3 (60 Marks)

(a) 15 marks
Use diagram 1 below to answer the following questions

Diagram 1

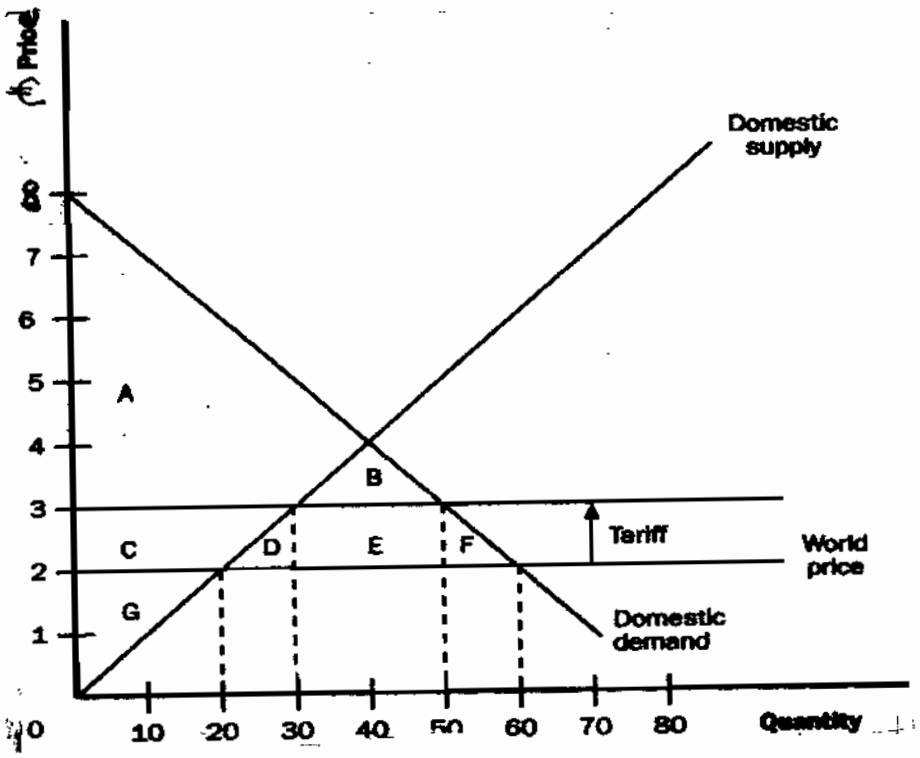


(i) If trade is not allowed, what is the market equilibrium price and quantity in this market?
(ii) If trade is allowed, will this country import or export this commodity? Why?
(iii) If trade is allowed, what is the price at which the good is sold, the domestic quantity supplied and demanded, and the quantity imported or exported?

(b) 30 marks

Use diagram 2 below to answer the following questions

Diagram 2



(i) If free trade is allowed, what is the domestic quantity supplied, domestic quantity demanded, and the quantity imported?

(ii) If a €1 tariff is placed on this good, what is the domestic quantity supplied, domestic quantity demanded, and the quantity imported?

(iii) What area corresponds to consumer surplus and producer surplus before the tariff is applied?

(iv) What area corresponds to consumer surplus, producer surplus, and government revenue after the tariff is applied?

(v) What area corresponds to the deadweight loss associated with the tariff?

(vi) Describe in words the sources of the deadweight loss from the tariff.

(c) 10 marks

Define and explain each of the following types of preferential trading arrangements

(i) Free trade areas (FTAs)

(ii) Customs Union

(iii) Common Market

(d) 5 marks

What are GATT and the WTO?

Question 4 (60 Marks)

(a) 35 marks

The information below provides the prices and quantities in a hypothetical market for automobile antifreeze.

Price per gallon (€)	Quantity Demanded	Quantity Supplied
1	1,400	600
2	1,200	800
3	1,000	1,000
4	800	1,200
5	600	1,400
6	400	1,600
7	200	1,800
8	0	2,000

(i) Plot the supply and demand curves for antifreeze.

(ii) What is the equilibrium price and quantity generated by the buyers and sellers in the market?

(iii) Suppose the production of antifreeze generates pollution in the form of chemical runoff and that pollution imposes a €2 cost on society for each gallon of antifreeze produced. Plot the social cost curve on the diagram you drew in part (i).

(iv) What is the optimal quantity of antifreeze production? Does the market overproduce or underproduce antifreeze?

(v) If the government were to intervene to make this market efficient, should it impose a Pigouvian tax or a subsidy? What is the value of the appropriate tax or subsidy?

(b) 10 marks

(i) Define and give an example of a public good.

(ii) Why is it difficult for private industry to provide public goods?

(c) 15 marks

(i) Define and give an example of common resource.

(ii) Using the example you gave in part (i) explain why this resource may be overexploited. Who bears the cost of this overexploitation and why?

(iii) What measures can be used to deal with the problem of overexploitation of your chosen common resource?

Question 5 (60 Marks)

(a) 30 marks

Suppose that labour is the only variable input in the production process for a competitive profit-maximising firm that produces Mayo flags. The firm's production function is shown below.

Labour (no. of workers)	Output per day
0	0
1	9
2	17
3	24
4	30
5	35
6	39
7	42
8	44

Each flag sells for €8.

(i) Plot the firm's demand for labour.
(ii) If the wage rate is €60 per day how many workers should the firm hire?
(iii) Suppose that Mayo gets through to the all-Ireland football final and the demand for flags increases, pushing the price up to €9 per flag. Assuming that the wage rate stays at €60 per day, how many workers should the firm now hire? Does this represent a shift in the firm's demand for labour or a movement along the firm's demand for labour. Explain.

(b) 30 marks

(i) There are large variations in the salaries earned by different people in Irish society. List and explain three factors that may explain why some people earn higher salaries than others. Give an example in each case.
(ii) Explain the human-capital view of education and the signaling view of education.
(iii) How can a competitive market eliminate discrimination in the labour market?
(iv) Provide three reasons why wages might be set above the equilibrium wage. Explain.

Question 6 (60 Marks)

(a) 30 marks

Assume that the (weekly) market demand and supply of tomatoes are given by the following figures:

Price (€ per kilo)	Qd (kilos)	Qs (kilos)
4.00	30,000	70,000
3.50	35,000	65,000
3.00	40,000	60,000
2.50	45,000	55,000
2.00	50,000	50,000
1.50	55,000	45,000
1.00	60,000	40,000

(i) What are the equilibrium price and quantity?

(ii) What will be the effect of the government fixing a minimum price of €3 per kilo? How much will it cost the government?

(iii) Suppose the government paid the tomato producers a subsidy of €1 per kilo.
(a) Give the new supply schedule.
(b) What will be the new equilibrium price?
(c) How much will this cost the government?

(b) 30 marks

(i) Why are agricultural prices subject to greater fluctuations than those for manufactured goods?

(ii) Compare the relative benefits of subsidies and high minimum prices (as under the CAP) to (a) the consumer; (b) the farmer; and (c) the taxpayer.

(iii) The EU is more than self-sufficient in a number of commodities. Does this mean that the objectives of the CAP have been achieved? What has been the cost of achieving this success?

(iv) List and explain three measures that can be used to reform the CAP.