Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2013

Marking Scheme

Agricultural Economics

Ordinary Level

Note to teachers and students on the use of published marking schemes

Marking schemes published by the State Examinations Commission are not intended to be standalone documents. They are an essential resource for examiners who receive training in the correct interpretation and application of the scheme. This training involves, among other things, marking samples of student work and discussing the marks awarded, so as to clarify the correct application of the scheme. The work of examiners is subsequently monitored by Advising Examiners to ensure consistent and accurate application of the marking scheme. This process is overseen by the Chief Examiner, usually assisted by a Chief Advising Examiner. The Chief Examiner is the final authority regarding whether or not the marking scheme has been correctly applied to any piece of candidate work.

Marking schemes are working documents. While a draft marking scheme is prepared in advance of the examination, the scheme is not finalised until examiners have applied it to candidates' work and the feedback from all examiners has been collated and considered in light of the full range of responses of candidates, the overall level of difficulty of the examination and the need to maintain consistency in standards from year to year. This published document contains the finalised scheme, as it was applied to all candidates' work.

In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with their Advising Examiners when in doubt.

Future Marking Schemes

Assumptions about future marking schemes on the basis of past schemes should be avoided. While the underlying assessment principles remain the same, the details of the marking of a particular type of question may change in the context of the contribution of that question to the overall examination in a given year. The Chief Examiner in any given year has the responsibility to determine how best to ensure the fair and accurate assessment of candidates' work and to ensure consistency in the standard of the assessment from year to year. Accordingly, aspects of the structure, detail and application of the marking scheme for a particular examination are subject to change from one year to the next without notice.

LEAVING CERTIFICATE 2013

AGRICULTURAL ECONOMICS

ORDINARY LEVEL

**MARKING SCHEME
AND
SUPPORT NOTES**

Marking Scheme and Support Notes for use with the Marking Scheme

In considering the marking scheme the following points should be noted:

- The support notes presented are not exclusive.

- The support notes in many cases contain key phrases which must appear in the candidate's answer in order to merit the assigned marks.

- Further relevant points of information presented by candidates are marked and rewarded on their merits.

- The detail required in any answer is determined by the context and the manner in which the question is asked and by the number of marks assigned to the answer in the examination paper. Requirements may therefore vary from year to year.

PART I   (120 Marks)

20 QUESTIONS – 15 QUESTIONS TO ANSWER.

ALL QUESTIONS CARRY EQUAL MARKS (8 MARKS)

Outline Marking Scheme

1.	2 @ 4 marks each	**11.**	8 marks
2.	2 @ 4 marks each	**12.**	8 marks
3.	2 @ 4 marks each	**13.**	2 @ 4 marks each
4.	2 @ 4 marks each	**14.**	2 @ 4 marks each
5.	8 marks	**15.**	2 @ 4 marks each
6.	2 @ 4 marks each	**16.**	2 @ 4 marks each
7.	8 marks	**17.**	2 @ 4 marks each
8.	8 marks (4 m + 4 m)	**18.**	2 @ 4 marks each
9.	8 marks (4 m + 4 m)	**19.**	8 marks (4 m + 4 m)
10.	8 marks	**20.**	8 marks (4 m + 4 m)

PART 2   (200 Marks)

6 QUESTIONS - 4 QUESTIONS TO ANSWER AT 50 MARKS EACH.

1. **(a)** (i) Diagram   10 marks

           (ii) Equilibrium price and quantity   10 marks (5m + 5m)

               Explanation   5 marks   25

  (b) Changes shown on diagram   15 marks (5m + 5m + 5m)

        Explanations   10 marks (5m + 5m)   25

                                                                  [50 marks]

2. **(a)** Explanation of quotas   10 marks (5 m + 5m)

        Reference to milk/dairy quotas   5 marks   15

  (b) Discussion   15 marks (5m + 5m + 5m)   15

  (c) (i)   Names of organisations   2 @ 5 marks

        (ii) Contributions to economy   2 @ 5 marks   20

                                                                  [50 marks]

3. **(a)** Explanations   20 marks (10m + 5m + 5m)   20

  (b) Factor inputs   10 marks (5m + 5m)

        Intermediate inputs   10 marks (5m + 5m)   20

  (c) Explanation   10 marks (5m + 5m)   10

                                                                   [50 marks]

4.	**(a)**	One example of fixed asset	5 marks	
		One example of current asset	5 marks	
		One example of long term liability	5 marks	
		One example of current liability	5 marks	20
	(b)	Calculation of net worth	10 marks	
		Interpretation of net worth	5 marks	15
	(c)	Calculation of liquidity ratio	10 marks	
		Interpretation of liquidity ratio	5 marks	15

[50 marks]

5.	**(a)**	(i)	Level of farm incomes explained	10 marks (5m + 5m)	
		(ii)	Volatility of farm incomes explained	10 marks (5m + 5m)	20
	(b)	(i)	Explanation for 2010-2011	15 marks (10m + 5 m)	
		(ii)	Explanation for 2012	15 marks (10m + 5 m)	30

[50 marks]

6.	**(a)**	(i)	Explanation of SFP	10 marks (5m + 5 m)	
		(ii)	Reason for SFP	10 marks (5m + 5m)	20
	(b)		Two interest groups	2 @ 5 marks	10
	(c)		Four ways to influence policy	4 @ 5 marks	20

[50 marks]

AGRICULTURAL ECONOMICS 2013

ORDINARY LEVEL

SUPPORT NOTES

Answer **fifteen** questions.
Write the answers in the spaces provided.
All questions carry equal marks.

1. **State two factors a consumer would consider when purchasing agricultural food products**:

   - Price
   - Income
   - Quality
   - Availability of substitute goods.

2. **Circle the correct words in this sentence.**

   *Engel's Law states that as people's incomes rises over time the **proportion** of income spent on food **falls.***

3. **State one example of a direct tax and one example of an indirect tax that a large dairy farmer milking 100 cows might be expected to pay in a typical year**:

   (i) Example direct tax: Income tax, profits tax, or capital gains tax

   (ii) Example indirect tax: VAT, Excise duty, Property tax or Customs duty.

4. **State two factors that could influence the market supply of wheat in a given year**:

   - Price of wheat
   - Price of inputs
   - Technology of wheat production
   - Price of substitute goods (barley)
   - Price of complementary goods (flour)
   - Weather factors.

5. **Indicate which of the following statements is correct:**

   When the market demand curve for potatoes shifts to the right, it means:

   A   More potatoes are demanded at a given market price

6.   **Outline two reasons why it is importnant for a farmer to keep financial accounts:**

- Determine profit or loss on the farm
- Basic information for making future plans
- Basis for securing bank loans and other funds for the farm
- Provides the data for calculating income tax from the farm
- Way of checking the progress of the farm against plans.

7.   **The number of people unemployed in Ireland according to the Live Register for October 2012 was approximately**: [tick (✔) **one** of the following boxes]

(i) 300,000 ☐   (ii) **420, 000** ✔   (iii) 580,000 ☐

8.   **Outline one reason why family farm income can differ from farm household income.**

- Off-farm job of the farmer and others who work on the farm
- Off-farm job of other family members
- Social Welfare payments e.g. pensions, children's allowance
- Other income sources e.g. dividends on investments, rents from properties.

9.   **Explain why a farmer might be regarded as being "asset rich and income poor".**

Farmers can own a lot of land, buildings livestock (assets) which can have a high market value if sold. However it is possible for various reasons e.g. price-cost squeeze, poor productivity, etc. that despite the value of the assets the actual profit (income) that the farmer makes can be very low and sometimes negative.

10.   **Outline one example of how a farmer of mixed livestock (cows, cattle and sheep) might engage in diversification on the farm.**

- Energy crops
- Deer
- Ostrich
- Alpaca etc.
- Tillage (if land is suitable)
- Fruit and vegetables (if land is suitable)
- Other named primary agricultural production
- Sand and gravel extraction
- Farm accommodation / tourism,
- Cheese/butter/yogurt production
- Other named farm-based activity not involving primary production.

11. The number of dairy cows in Ireland in June 2012 was: [tick(✔) **one** of the following boxes]

(i) **1.12 million** ✔   (ii) 2.11 million ☐   (iii) 21.1 million ☐

12. **Agricultural output today in a typical western economy usually accounts for approximately what percentage of national output or GDP?**
[tick ✔) **one** of the following boxes]

(i) 33%   (ii) 13% ☐   (iii) **3%** ✔

13. **State two reasons for the general rise in food prices in the last few years:**

- Droughts in production areas
- Wars in production areas
- Rising populations
- Rising income levels
- Diversion of land use and agricultural production into non-food uses e.g. corn for ethanol, energy crops.

14. **Assume the income elasticity of demand (YED) for cheese is + 0.6.** This means that a 10% increase in income would lead to **a 6 % increase** in quantity demanded.

15. **Fill in the two missing boxes A and B in the diagram below of a simple market system.**
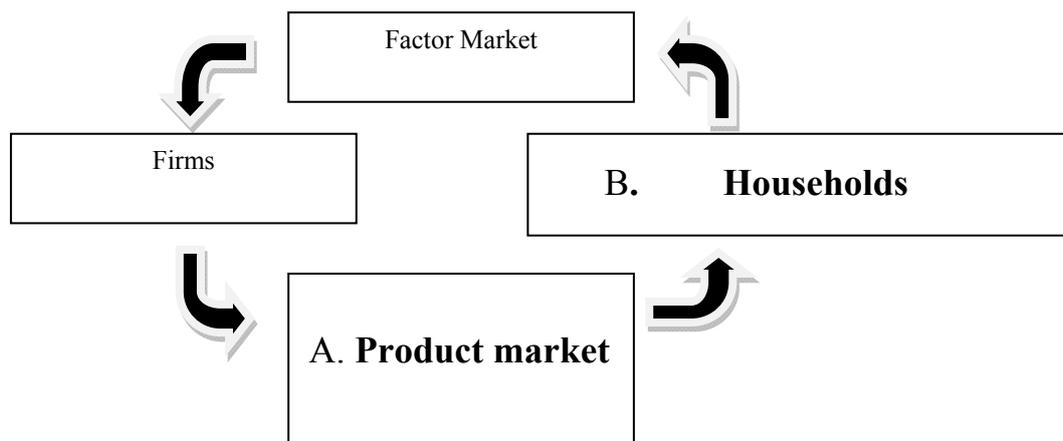
16. **State <u>two</u> objectives of the Common Agricultural Policy (CAP) as set out in Article 39 of the Treaty of Rome:**

- Rising agricultural productivity
- Fair standard of living for farmers
- Stable markets
- Regular supplies
- Reasonable food prices for consumers.

17. **Complete the supply food chain for cheese by filling A and B below:**

| Purchased inputs | + | Farmers' own resources | → | **A** | + | Processing + **B** | → | Final consumer |
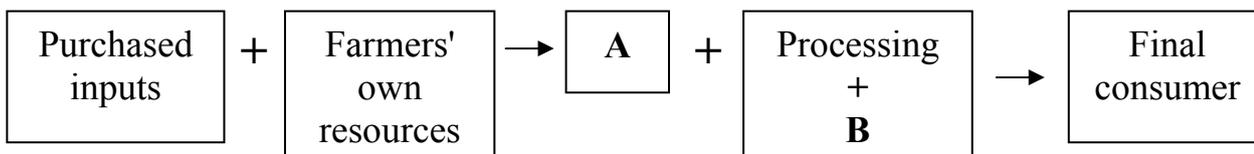
A = Agricultural output i.e. milk

B = Distribution

18. **Farmers can raise capital from different sources. State <u>two</u> of these sources:**

- Own resources: retained profits
- Own resources: family savings
- Credit i.e. long term loans
- Government grants/subsidies.

19. **Explain why the demand curve from milk output of a typical Irish dairy farmer is horizontal.**

The farmer's output is so small relative to the industry output and his milk is the same as other farmers so that he cannot influence the market price for milk. He can produce as much or as little as he wants and he will not affect the market price of milk.

20. **Explain why a fall in the value of the euro against the pound sterling should benefit Irish agri-food exports to the United Kingdom.**

The price of Irish agri-food products would fall in comparison to the same type of UK products. This should lead to an increase in demand in the UK for Irish products with increased production and profits in Ireland.

PART 2 (200 marks)

QUESTION 1

The table below shows the supply and demand schedules for butter in a given market.

Price (€ per tonne)	Quantity supplied (million tonnes)	Quantity demanded (million tonnes)
3,000	15	45
4,000	20	35
5,000	25	25
6,000	30	15
7,000	35	5

(a) Using the data from the table:

(i) **Draw the market equilibrium diagram labelling both axes and the Demand and Supply curves.**

Diagram:
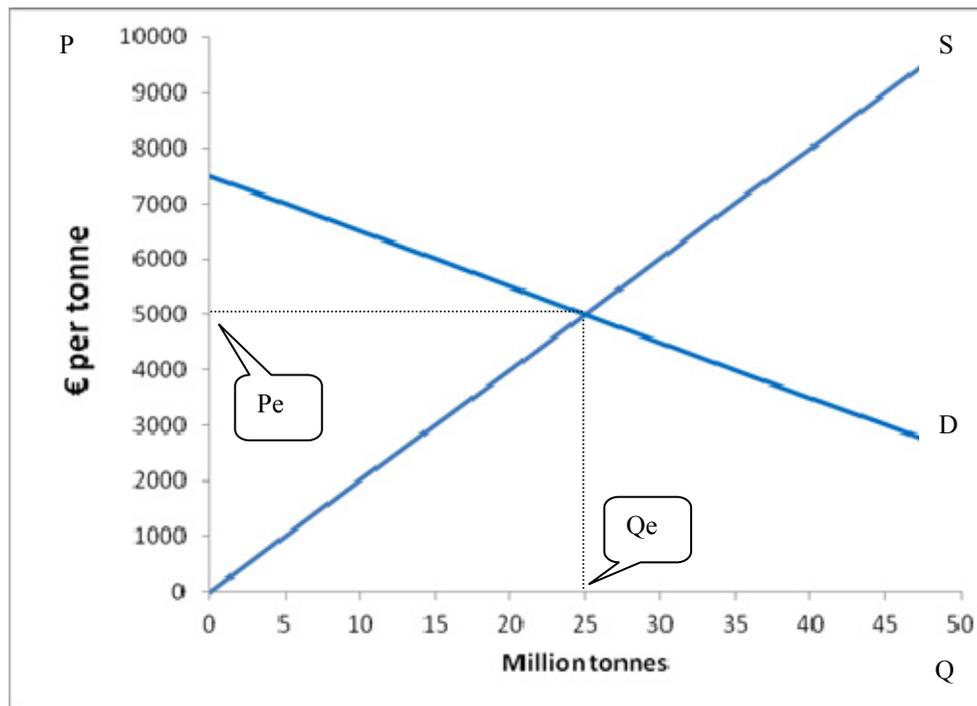
(ii) **Show the equilibrium market price and quantity and explain what this equilibrium situation means.**

Pe = €5,000   Qe = 25 million tonnes

At equilibrium, supply = demand. There is no reason for price or quantity to change unless there is a change in the position of the supply and/or demand curve.

(b) **Draw a new supply curve in your diagram to represent a fall in supply. A new equilibrium will emerge which should be different to the one you described in part (a) (ii) above. Explain how the new equilibrium price and quantity compare to the original ones.**

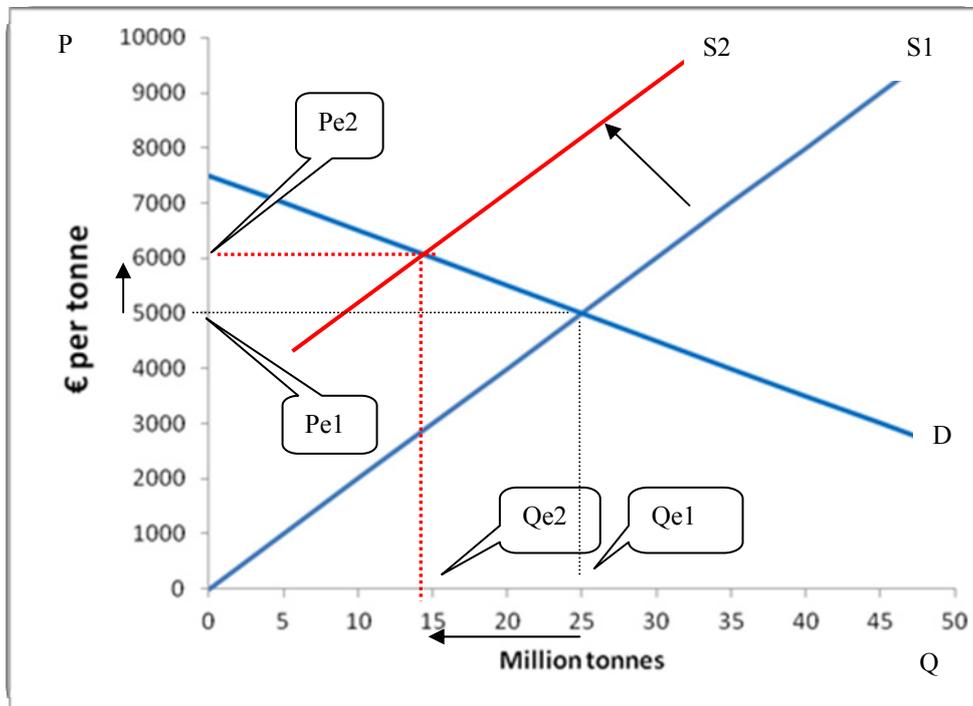[No need for the student to do a second diagram]

Diagram:

Leftward shift in Supply Curve on diagram

New and higher equilibrium price on diagram

New and lower equilibrium quantity on diagram

Discussion:
A fall in supply means that the supply curve shifts to the left, i.e. decrease in supply. A temporary excess demand arises at the original equilibrium price. This forces the price to rise and the Qs rises. The Qd falls (movement up the demand curve) until Supply and Demand are equal to each other once again but at a lower equilibrium quantity.

Summary: Decrease in S → ↑ Pe and ↓ Qe.

QUESTION 2

2. **(a)** **Explain the term 'Quota system' in Irish agriculture and state what sector of Irish agriculture has been directly affected by the quota system.**

Farmers are restricted in terms of the maximum amount of output they can sell on the market. Farmers would be penalised heavily by the EU for over-production. To avoid penalties and the cost of producing output that can't be sold, farmers try to keep their output under control and within their allocated production quota. Farmers who might want to expand production would have to buy quota from another farmer.

Example in Ireland is the milk quota (in operation since 1984).

(b) **Outline what you think is likely to happen in Irish agriculture when the quota system is abolished in 2015.**

Expectation is that dairy farmers will expand production significantly from 2015. Minimum overall increase in national milk output is expected to be 20%. Some smaller farmers likely to exit dairying as it gets more competitive. Some farmers are gearing up to double their milk output. This should lead to more jobs in dairy processing. Markets are available for milk products including cheeses, food ingredients and baby milk powder especially for China.

(c) **The agri-food sector in Ireland comprises more than farming.**

(i) **Name two companies or organisations that are involved in the agri-food business.**

Glanbia, Dairygold, Kerry Group, Slaney Meats, Greencore.

(ii) **Outline two ways in which the agri-food sector contributes to the Irish economy.**

Our most important indigenous industry / heavily focussed on <u>exports</u> / central to the rural economy

Provides <u>Employment</u>:
[140,000 (80,000 in primary production, 60,000 in food processing) or 8% of national employment]

Small but important and stable contribution to <u>national output</u>:
[Primary production = 2.5% of national output (GDP), Agri-food = 7% of GDP]

<u>Exports</u>:
[Agri-food = 10.5% of total exports (because the sector is largely Irish owned and because the import content apart from energy in agri-food output is low, the net exports from the sector account for 20 - 25% of national net exports.]

QUESTION 3

The chart below shows the total product curve (TPC) describing the relationship between the yield of Crop Y in kilograms per hectare and Fertiliser X in kilograms per square metre (input) as found on John's farm.

Total Product Curve of Crop Y
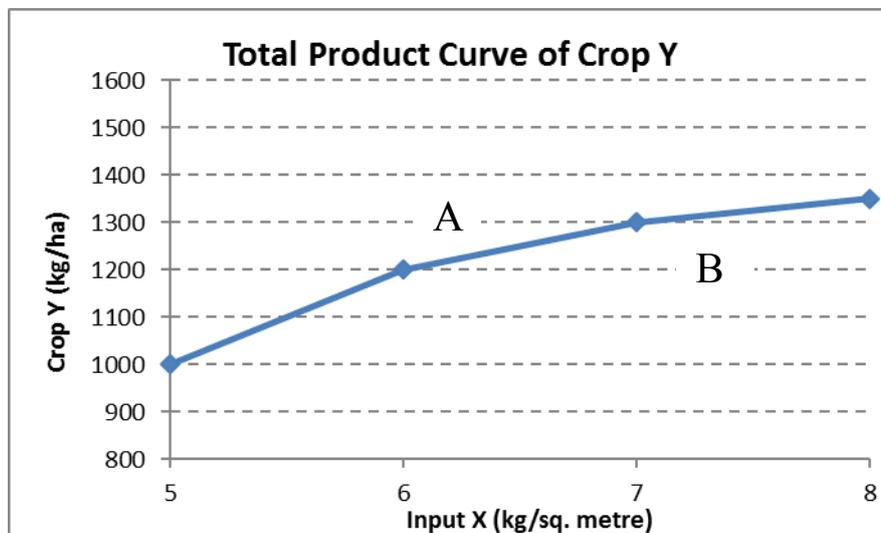
(a)   **Explain the movement from point A to B in the above diagram.**

When the use of input X is increased by one kg per square metre the output of Crop Y increases by 100 kg/ha. In other words the marginal product of the 7th unit of Input X used is 100 kgs/ha. We assume that the use of all other inputs is held constant.

(b)   **Inputs can be classified as *factor inputs* and *intermediate inputs*. Distinguish between these two types of inputs, giving one example in each case in a farming context.**

Factor inputs are deemed to be the fundamental factors of production employed in the industry whether owned or purchased e.g. land, labour, capital, enterprise/management.

Intermediate inputs are the products of other industries that are used in farming e.g. materials and services such as fertilisers, energy, crop protection, vet services, feed stuffs.

(c)   **Indicate what would happen to the TPC if farmer John were to grow a higher yielding variety of Crop Y. Explain your answer.**

The productivity of Crop Y improves and the TPC shifts upwards. In other words, the output of Crop Y is higher at each level of use of Input X.

QUESTION 4

The following data is taken from the Balance Sheet of Farmer Joan on 31 December 2012.

Assets (€'000)		Liabilities (€'000)	
Fixed Assets	500	Long term Liabilities	150
Current Assets	200	Current Liabilities	150
of which: Liquid assets	*?*		
Non-liquid assets	*50*	Net worth	?
Total assets	**700**	**Total liabilities**	**700**

(a)   **State one example of each of the following**:

   (i) Fixed asset (ii) Current asset (iii) Long term liability (iv) Current liability.

   Fixed Assets: Land, buildings, machinery, breeding livestock

   Current assets: Trading livestock, seed, feed, fertilisers, cash, debtors

   Long term liabilities: Bank loans outstanding for long term investment (land, buildings, machinery, breeding stock)

   Current liabilities: Bank overdraft, trade creditors.

(b)   **Calculate (showing your workings) the net worth of Joan's farm and explain this figure.**

   Net Worth = Total assets less long term and current liabilities
   i.e. €700,000 - €150,000 - €150,000 = €400,000.
   The value of Joan's owned capital or equity in her farm is €400,000. If she sold all her assets and paid off all her liabilities the net worth is the amount of money she would be left with according to the balance sheet.

(c)   **Calculate (showing your workings) the liquidity ratio of Joan's farm. What does this figure mean and would you regard the figure you calculated as satisfactory?**

   Liquidity Ratio = Liquid assets : current liabilities
   i.e. €150,000 : €150,000 = 1:1
   Figure is acceptable (Joan has just enough assets to convert quickly into cash if her short term creditors were to press her for payment).

QUESTION 5

The graph below shows average family farm income and average industrial earnings per worker for each year from 2004 to 2012.

Annual average family farm income and industrial earnings
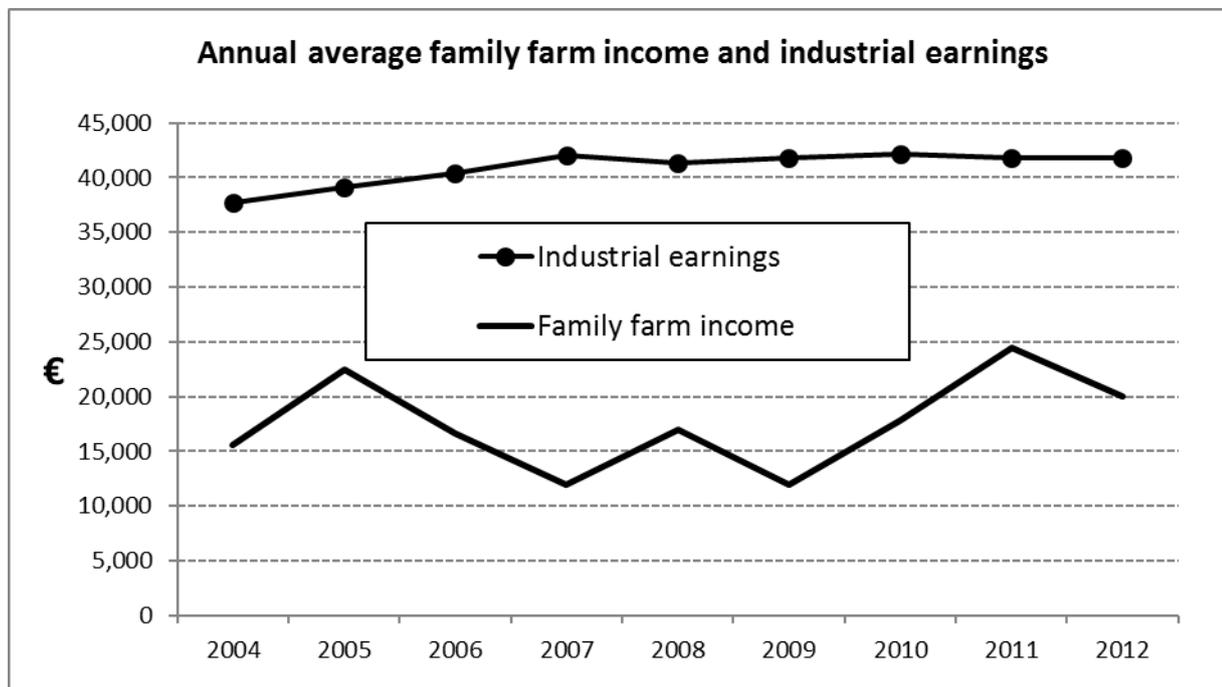
(a) **Based on the above graph, explain briefly how average family farm income has compared to average industrial earnings over the period as a whole in terms of:**

(i) **Level of income**
(ii) **Volatility (fluctuations) of annual income.**

(i) Farm incomes have tended on average to be less than 50% of average earnings of industrial workers over the period.

(ii) Industrial earnings tend to either increase gradually or remain relatively stable. Farm incomes are volatile e.g. a low of €12,000 in 2009 and a high of €24,500 in 2011.

(b) **Outline the factors that explain:**

(i) **The rise in farm incomes in 2010/11**
(ii) **The fall in farm incomes in 2012**.

(i) **2010-2011**: Recovery in actual production after bad weather in the summer of 2009 which affected productivity in livestock and crops and led to higher feed costs for livestock farmers in 2009. Dairy and tillage output prices increased in 2010 and farmers received further big increases in the prices they received for milk, cattle and sheep in 2011.

(ii) **2012**: Bad weather in the summer affected milk production and crop yields. Farmers had to buy feed during the summer. Also milk prices in particular were lower than in 2011.

QUESTION 6

6.   (a)   (i)   **Explain the term 'Single Farm Payment' which operates under the Common Agricultural Policy (CAP).**

Single Farm Payment is one overall payment that is made to farmers on a per hectare basis since 2003 under CAP reform and WTO obligations. The payment is not linked (i.e. decoupled from) to the current level production on the farm. It is paid from the CAP through the Department of Agriculture. It is based on the average annual CAP payments of various sorts the farmer received in the reference years 2000, 2001 and 2002.

(ii)   **Outline one reason for the existence of the Single Farm Payment.**

- Income support for farmers
- Maintains economic activity in the rural economy
- Compensation for expected fall in output prices when new system was introduced
- Maintains land in good agricultural condition
- Cross compliance with environmental standards.

(b)   **Name two lobby or special interest groups that represent Irish farmers**.

IFA, ICMSA, Macra na Féirme

(c)   **Choose one of the groups mentioned in (b) above and outline four ways in which it influences agricultural policy on behalf of its members.**

- Propose and advocate policy changes in agriculture
- Criticise and protest existing policy
- Lobby at local, national and EU level for its members
- Mount PR campaigns for its members
- Make submissions on national policy especially to do with the annual Budget
- Provide information and meetings to its members when new policy is coming, e.g. CAP reform.

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