

# Coimisiún na Scrúduithe Stáit State Examinations Commission 

## Leaving Certificate 2015

## 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 2015
AGRICULTURAL ECONOMICS
ORDINARY LEVEL
MARKING SCHEME
AND
EXPECTED RESPONSES

## Marking Scheme and Expected Responses for use with the Marking Scheme

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

- The Expected Responses presented are not exclusive or definitive. Marks may be awarded for any other correct answers.
- The Expected Responses 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.

# Leaving Certificate Examination, 2015 AGRICULTURAL ECONOMICS - Ordinary Level 

## Marking Scheme

## PART 1 (120 Marks)

20 QUESTIONS - 15 QUESTIONS TO ANSWER.
ALL QUESTIONS CARRY EQUAL MARKS (8 marks)

| 1. | 2 @ 4 marks each | 11. | 8 marks ( $3 \mathrm{~m}+3 \mathrm{~m}+2 \mathrm{~m}$ ) |
| :---: | :---: | :---: | :---: |
| 2. | 2 @ 4 marks each | 12. | 8 marks ( $4 \mathrm{~m}+4 \mathrm{~m}$ ) |
| 3. | 2 @ 4 marks each | 13. | 2 @ 4 marks each |
| 4. | 2 @ 4 marks each | 14. | 2 @ 4 marks each |
| 5. | 2 @ 4 marks each | 15. | 2 @ 4 marks each |
| 6. | 8 marks ( $3 \mathrm{~m}+3 \mathrm{~m}+2 \mathrm{~m}$ ) | 16. | 8 marks ( $3 \mathrm{~m}+3 \mathrm{~m}+2 \mathrm{~m}$ ) |
| 7. | 2 @ 4 marks each | 17. | 2 @ 4 marks each |
| 8. | 2 @ 4 marks each | 18. | 2 @ 4 marks each |
| 9. | 2 @ 4 marks each | 19. | 2 @ 4 marks each |
| 10. | 8 marks ( $3 \mathrm{~m}+3 \mathrm{~m}+2 \mathrm{~m}$ ) | 20. | 2 @ 4 marks each |

## 6 QUESTIONS - 4 QUESTIONS TO ANSWER

## ALL QUESTIONS CARRY EQUAL MARKS (50 marks).

1. (a) (i) Diagram:

Labelling
Curves
(ii) Equilibrium price

Equilibrium quantity
(i) Effect on demand curve Effect on supply curve
(ii) Shift demand curve to right Shift supply curve to right
(iii) Effect on market price Effect on market quantity
(c)

Explanation<br>Example

(b)
Effect on supply curve

3 @ 2 marks each
2 @ 7 marks each
3 marks

3 marks

2 marks
2 marks
2 marks
2 marks
2 @ 2 marks
2 @ 2 marks

4 marks $(3+1)$
4 marks
8
[50 marks]
2. (a) Two contributions to local communities 16 marks (2 @ 8 marks(5+3) 16
(b) (i) Description of quota system 12 marks (3 @ 4 marks) 12
(ii) Three differences 22 marks $(8+7+7)$ 22
[50 marks]
3. (a) Two contributions to economy 16 marks (2 @ 8 marks) 16
(b) Discussion on agri exports

16 marks (2 @ 8 marks (5+3)
16
(c) Positive consensus

Two reasons for prospects

2 marks
16 marks (2 @ 8 marks (5+3)
4. (a)
(i) Explanation of net worth figure 10 marks $(5+5)$
(ii) Example of current asset

5 marks

Example of long term liability
5 marks
(iii) Good financial position

5 marks

Explanation
10 marks $(5+5)$
(b)
(i) One type of insurance
(ii) Purpose of insurance

10 marks $(5+5)$
5. (a)
(i) Calculation of farm output

10 marks
(ii) Calculation of farm gross margin

6 marks
(iii) Calculation of family farm income

10 marks
26
$\begin{array}{ll}\text { (b) Variable cost } 1 & 6 \text { marks } \\ \text { Variable cost } 2 & 6 \text { marks }\end{array}$
6 marks

6 marks
Reference to depreciation figure in table
6 marks12
6. (a)

| (i) | Explanation of volatility | 6 marks |
| :--- | :--- | :---: |
|  | Reference to volatility in graph | 10 marks $(5+5)$ |
| (ii) | Direct payment 1 | 5 marks |
|  | Direct payment 2 | 5 marks |

(iii) Explanation of direct payments from graph 12 marks $(6+6)$ 38
(b) One reason for intervention in agri markets 12 marks $(6+6) 12$

## AGRICULTURAL ECONOMICS - Ordinary Level

Part 1 (Answer 15 questions from 20. Eight marks per question)

|  | Expected Responses | Marks |
| :---: | :---: | :---: |
| 1. | State two key economic decisions concerning goods and services that are made within the market system. <br> - What to produce <br> - How to produce <br> - How much to produce <br> - For whom to produce | $2 \times 4 m$ |
| 2. | State one example from agriculture of each of the following: | 4 <br> 4 |
| 3. | The income elasticity of demand (YED) for good $X$ is $\mathbf{- 0 . 7 5}$. This means: <br> (i) That a $10 \%$ increase in income leads to a $7.5 \%$ increase decrease in quantity demanded. <br> (ii) That Good X is a normal inferior good. | 4 <br> 4 |
| 4. | (i) The share of Gross Domestic Product (GDP) accounted for by agriculture in advanced economies is: Less than 5\% $\square$ $10 \%-15 \%$ $\square$ $20 \%-25 \%$ <br> (ii) Agriculture is an example of which type of industry: $\square$ Tertiary Secondary Primary | 4 <br> 4 |
| 5. | State two objectives of the Common Agricultural Policy (CAP) as outlined in the Treaty of Rome, 1957. <br> - Increased agricultural productivity <br> - Fair standard of living for the agricultural population <br> - Stabilise markets <br> - Guarantee regular supplies <br> - Reasonable prices for consumers | $2 \times 4 m$ |
| 6. | Complete the sentence below using three of four given words: <br> "A farmer who seeks to MAXIMISE profits will INCREASE output if the marginal <br> REVENUE of the last unit produced is greater than its marginal cost." | $3+3+2$ |

\begin{tabular}{|c|c|c|}
\hline 7. \& \begin{tabular}{l}
(i) Inflation is measured by an increase in: ? VAT \(\square\) CPI ? GNP \\
(ii) If the actual (nominal) market price of potatoes increases by \(\mathbf{1 0 \%}\) while inflation is \(4 \%\), then the real market price of potatoes has: \\
Risen \\
Fallen \\
Stayed unchanged
\end{tabular} \& 4

4 <br>
\hline 8. \& In a perfectly competitive industry like agriculture the individual farmer has (i) total / some no control Dver the market price she receives for her produce. Consequently, the demand curve for her produce is (ii) vertical horizontal downward sloping. \& 4
4 <br>

\hline 9. \& | State two national organisations that represent the interests of Irish farmers and their families. |
| :--- |
| - Irish Farmers Association (IFA) |
| - Irish Creamery Milk Suppliers Association (ICMSA) |
| - Macra na Feirme |
| - Irish Cattle and Sheep Farmers Association (ICSA) | \& $2 \times 4 m$ <br>


\hline 10. \& | State if each of the following taxes are direct or indirect. |
| :--- |
| (i) Income tax: |
| Direct Dindirect |
| (ii) Value added tax: |
| Direct |
| Indirect |
| (iii) Capital gains tax: |
| Direct Indirect | \& \[

$$
\begin{aligned}
& 3 \\
& 3 \\
& 2
\end{aligned}
$$
\] <br>

\hline 11. \& The given pie chart shows the share of cereals land in Ireland devoted to wheat, barley and oats in June 2014. State which share $X, Y$ and $Z$ applies to which crop. (A crop name can only be used once.) \& $$
\begin{aligned}
& 3 \\
& 3 \\
& 2
\end{aligned}
$$ <br>

\hline 12. \& | "A Bank overdraft is an example of a current liability." Explain this statement. |
| :--- |
| Current liabilities are debts of the farm that are to be settled in cash within the tax year or the production cycle of the farm. A bank overdraft (the withdrawal of more than what is in a current account with permission from the bank) is a current liability as it has to be cleared and renewed every year. | \& \[

$$
\begin{gathered}
8 \mathrm{~m} \\
(4+4)
\end{gathered}
$$
\] <br>

\hline
\end{tabular}

| 13. | State two services provided by Teagasc for Irish farmers. <br> - Agricultural production and environmental research <br> - Food research <br> - Advisory service to farmers <br> - Full-time courses at agricultural colleges <br> - On-going training for farmers <br> - Support for rural development activities | $2 \times 4 m$ |
| :---: | :---: | :---: |
| 14. | Complete the food supply chain for butter by naming the components $A$ and $B$ | $4+4$ |
| 15. | If the euro $(€)$ falls in value against the UK pound sterling ( $£$ ), what would be the expected outcome for each of the following? <br> (i) The price of Irish cheese in UK supermarkets: <br> Increase <br> Decrease No change <br> (ii) Demand for English cheese in Irish supermarkets: <br> No change | 4 4 |
| 16. | Identify which of the points $\mathrm{A}, \mathrm{B}$ and C shown in the given diagram is technically efficient, inefficient or currently unattainable. <br> Point $\mathbf{B}$ is technically efficient <br> Point $\mathbf{C}$ is technically inefficient <br> Point $\mathbf{A}$ is technically unattainable | $\begin{aligned} & 3 \\ & 3 \\ & 2 \end{aligned}$ |
| 17. | (i) The rate of economic growth in Ireland in 2014 was approximately: $1 \% \quad 5 \% \quad 10 \%$ <br> (ii) The average rate of unemployment in Ireland in 2014 was approximately: <br> 18\% <br> 20\% | 4 4 |

18. Assume the supply of agricultural land is perfectly inelastic. State what the impact of an increase in demand for land would be on:
19. (i) Number of EU Member States as at 1 January 2015:

24


Decrease
No change
(ii) Market quantity of land: Increase Decrease No change


PART 2 (200 marks)
Question 1 1
The table below shows the annual supply and demand schedules for Good X:

| Price | (€ per tonne) | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Supply | (million tonnes) | 0 | 4 | 8 | 12 | 16 | 20 | 24 |
| Demand | (million tonnes) | 24 | 22 | 20 | 18 | 16 | 14 | 12 |

(a) (i) Draw the market demand and supply curves from the data given in the table. Label each axis and the two curves.
(ii) State the equilibrium price and quantity for Good X .

(ii)

| Equilibrium price: | $€ 45$ per tonne |
| :--- | :--- |
| Equilibrium quantity: | 16 million tonnes |

(b) The demand curve for Good X or the supply curve for Good X may shift to the right or to the left due to the following:

- An increase in consumer incomes
- A decrease in input costs

In relation to each event/development above, answer the following three questions:
(i) State whether the demand curve or the supply curve will shift
(ii) State whether the curve you mention will shift to the right or to the left
(iii) State the effect on the market price and the market quantity.

|  | An increase in consumer incomes | A decrease in input costs |
| :---: | :--- | :--- |
| (i) | Demand Curve will shift | Supply Curve will Shift |
| (ii) | To the Right | To the Right |
| (iii) | Higher Market Price | Lower Market Price |
|  | Higher Market Quantity | Higher Market Quantity |

(c) Explain the concept of substitute goods in consumption and give one example from the agri-food sector.

Substitute goods in consumption: One of two (or more) goods that provide the same basic satisfaction of a want or need when consumed. An increase in the price of one substitute good causes an increase in demand for the other. A substitute-in-consumption has a positive cross elasticity of demand.

Consuming one substitute good means that buyers have no need to consume another.

## Example:

The need for food can be satisfied by consuming beef or lamb.
A change in the price of a substitute good in consumption causes a change in demand and a shift of the demand curve.

- An increase in the price of beef causes an increase in demand for lamb.
- A decrease in the price of beef causes a decrease in demand for lamb.
$4 m$


## Question 2 <br> (a) According to the 2011 Census of Population for Ireland, over 1.7 million people or $38 \%$ of the national population live in rural areas. <br> Outline two ways in which the family farm contributes to local communities in rural areas.

- Maintenance of population numbers and age diversity (Keeps the community alive and offers the prospect of adults of the future in the community).
- Demand for local commercial services and employment (through their demand for farm supplies, groceries, petrol).
- Demand for public services that help to maintain a viable community (through their need for education, water supply, roads).
- Contribute to the social, cultural and religious life of communities (through their involvement in sports, church life, hobby clubs, and music groups).
- Management of the environment to the community's benefit (through keeping dwellings from falling into disrepair, keeping fields from turning into scrub and wilderness, maintaining a pleasing visual aspect in the countryside, maintenance of bio-diversity and other environmental benefits through normal farming activity and REPS-type programmes).
(b) The EU milk quota system which came into effect in 1984 was abolished in April 2015.
(i) Describe the essential features of how the milk quota system worked at the farm level.
- Milk output restricted to allocated quota on each farm
- Increased output required the farmer to buy or rent additional quota
- Possibility of farmers having to pay a super-levy if national milk output exceeded the national milk quota
- Many farmers not able to exploit economies of scale and therefore were operating with cost structures that were not optimal
- More dairy farms than would be the case in a free-market situation meant that milk collection costs for processors were higher than would otherwise be the case.
(ii) Suggest three ways in which Irish dairy farming may be different in the future from what it was like under the quota system.
- Farmers free to expand their dairy herd size without restriction by quotas
- Farmers more exposed to the ups and downs of market prices for milk products
- Farmers should be able to exploit economies of scale which would allow them to expand production and bring down average production costs at the same time
- Realistic opportunities for expansion on individual farms as global demand for milk products is expected to increase over the long term
- Small dairy farms that are unable to expand are likely to exit the business as they no longer have a "guaranteed" production level
- Dairy farming is likely to become more scientific and technical and will require farmers to improve their skills and Teagasc to provide relevant training courses.

| Question 3 |
| :--- |
| "Farming [including the Agri-Food sector] is our largest indigenous industry". |
| (Minister for Finance, 2015 Budget Statement, 14 October 2014) |

(a) Outline two ways in which the Irish Agri-Food sector contributes positively to the national economy, other than exporting of agricultural goods.

- Direct employment particularly in rural areas - helps to keep down population drift to urban centres and/or reduces emigration
- Indirect employment created by firms that service the agri-food sector
- Output from agri-food sector generates profits and opportunities for investment and expansion in economic activity
- Government revenue from income, profits, VAT and other taxes
- Infrastructure.
(b) Using the information in the line chart below, outline the importance of the Agri-Food sector for national exports and for the national economy between 2008 and 2013.


The value of Agri-food exports increased by nearly $€ 2$ billion to over $€ 11.5$ billion by 2013. Exports increased every year apart from 2009 which was a bad year for farming as there was a significant decline in production that year due to bad weather and lower agricultural prices.

The contribution of the Agri-food sector to overall exports has been increasing. In 2008 agri-food exports accounted for $11 \%$ of total exports but by 2013 the contribution of agri-food exports rose to about 13.5\%. The agri-food contribution to exports fell in 2009 but has increased every year since then. The sector has been one of the few to manage an increase in exports at a time of economic stagnation at home and low economic growth abroad.
(c) Would you consider the prospects for Irish Agri-Food exports to be positive or negative over the next five years? Outline two reasons to support your answer.

The consensus is that the prospects for agri-food exports is positive.
Reasons for positive prospects:

- On-going trend in freer international trade in agri-food products e.g. prospect of a new agricultural trade deal between the EU and the USA
- Continued increase in global population and rising incomes in many less developed countries
- Ireland's growing reputation for producing safe, quality-assured and environmentally friendly agricultural products
- Rising demand for milk products especially and meat products from the growing middle class populations in countries like China and India
- Changing weather patterns like more droughts have been proving difficult for food exporting countries like Australia and New Zealand.



(b) State two variable costs that may apply in the case of a typical dairy farm like Mary's.
- Purchased (concentrate) feed or fodder
- Purchased fertilisers and lime
- Hired casual labour
- Veterinary expenses
- Machinery hire
- Purchased energy (oil, diesel)
(c) Explain the term 'Depreciation' as it appears in Mary's accounts.

Depreciation refers to the loss in the recorded value of fixed assets during the accounting period (usually one year). It is that part of the original cost of the purchased asset that was used up during the course of the year. In effect, depreciation is regarded as a cost because the charge represents the cost of replacing the assets brought about by the year's farming activity.

The value for depreciation on Mary's farm is $€ 4,500$. This means that machinery and buildings fell in value by that amount. The figure appears low relative to the size of farm output and suggests that current machinery and buildings are getting old and may need to be replaced sooner rather than later.

## Question 6 <br> (a) The graph below shows average family farm income (FFI) and direct payments

 (DP) received on Irish farms for the years 2008 to 2013.
(i) Explain the concept of volatility (i.e. fluctuations) of farm incomes with reference to the above graph.

Volatility refers to the well-known tendency for farm incomes to vary, in this case over time. The vagaries of weather and the ups and downs of agricultural markets are the principal reasons why farm incomes (even expressed as national averages) can vary dramatically from one year to the next. In agricultural markets, supply can fluctuate between seasons because of weather conditions. This causes volatility in prices.

The graph shows huge variation over the relevant years. Average family farm income (FFI) varied from a low of around $€ 12,000$ in 2009 to a high of $€ 30,000$ in 2011 - a significance difference of $€ 18,000$.

In three of the years (2011, 2012 and 2013) average FFI was $€ 25,000$ or more but was less than $€ 18,000$ in the three years, 2008, 2009 and 2010.
(ii) State two types of direct payments received by Irish farmers.

- Single farm payment / Basic Payment Scheme
- REPS/AEOS payments
- Disadvantage areas payments
- GLAS / Greening
- Young Farmers' Payment


## (iii) "Direct payments are important for Irish farmers." Explain this statement with reference to the graph.

From the graph it can be seen that DP account for the bulk of FFI on Irish farms. In 2008 and 2009, DP received by Irish farmers exceeded FFI meaning that the farmers on average made a loss from market-based farming activity. Even in one of the most profitable years ever in Irish farming, 2011, DP still represented over half of FFI on Irish farms. Without DP, the vast majority of Irish farms would be unable to derive a satisfactory income from farming.
(b) Outline one reason why the Irish Government and/or the EU is more inclined to intervene in agricultural markets rather than in non-agricultural markets.

- To stabilise prices (and thereby farm incomes). The natural tendency for agricultural prices to be volatile would inhibit a stable pattern of food production
- To ensure an adequate income for farmers through trade protection and/or income supports. Otherwise more farmers would exit farming and there would be economic and social problems in certain regions if farming was not supported
- The EU in particular is anxious to preserve the model of the family farm as opposed to large scale factory farming. Farming as a way of life is important in the EU as are the environmental benefits of less intensive farming
- Regional and national production methods and food products e.g. cheeses and meat products might be lost in a totally free market situation
- Food safety concerns. Consumers require assurance that their food is safe to eat. For this reason there may be restrictions on imported products and supports as well as strict obligations on farmers to ensure safe food production.


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