



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2016

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.

Contents	Page
Note regarding the marking scheme	3
Summary of mark allocations	4
Support Notes – Part 1.....	5
Support Notes – Part 2.....	8
Marcanna Breise as ucht freagairt trí Ghaeilge	17

Note regarding the Marking Scheme

The support notes presented are neither exclusive nor complete. Any Examiner unsure of the validity of the approach adopted by a particular candidate should contact his/her Advising Examiner.

Relevant points of information presented by candidates are marked and rewarded on their merits.

The level of 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.

Words, expressions, or phrases must be correctly used in context and not contradicted, and where there is evidence of incorrect use or contradictions the marks may not be awarded.

Summary of Mark Allocations

PART 1 (120 Marks)

Answer 15 questions from 20. 8 marks per question.

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

PART 2 (200 Marks)

Answer 4 questions from 6. 50 marks per question.

- | | |
|--------------------------------------|---|
| 1. (a)(i) 8m (4 @ 2m) | 4. (a) 15m (3 @ 5m) |
| (a)(ii) 8m (2 @ 4m) | (b) 10m (5m + 5m) |
| (b)(i) 5m (3m + 2m) | (c) 15m (3 @ 5m) |
| (b)(ii) 5m | (d) 10m (5m + 5m) |
| (b)(iii) 8m (2 @ 4m) | |
| (b)(iv) 6m (3m + 3m) | 5. (a) 16m (2 @ 8m (4 + 4)) |
| (c) 10m (5m + 5m) | (b) 10m (5 @ 2m) |
| | (c)(i) 12m (3 @ 4m (2 + 2)) |
| 2. (a) 16m (4 @ 4m) | (c)(ii) 12m (3 @ 4m (2 + 2)) |
| (b) 9m (3 @ 3m) | |
| (c) 15m (5m + 10m) | 6. (a)(i) 5m (3m + 2m) |
| (d) 10m (5m + 5m) | (a)(ii) 10m (2 @ 5m (3+2)) |
| | (a)(iii) 10m (2 @ 5m) |
| 3 (a) 10m (2 @ 5m (3+2)) | (b)(i) 5m (3m + 2m) |
| (b) 10m (2 @ 5m) | (b)(ii) 10m (2 @ 5m (3+2)) |
| (c) 5m (3m + 2m) | (b)(iii) 10m (2 @ 5m) |
| (d) 10m (2 @ 5m) | |
| (e) 15m (3 @ 5m) | |

Support Notes

PART 1 (120 Marks)

Answer 15 questions from 20. 8 marks per question.

PART 1		
1.	(i) Social (ii) Scarce (iii) Alternative	3 3 2
2.	(i) Inflation (ii) Rising	4 4
3.	(i) Cattle rearing / cattle drystock / dairying / tillage / forestry / goats (ii) Award all candidates 4 marks for this part.*	4 4
4.	(i) Elastic (ii) Luxury	4 4
5.	(i) Assets (ii) Liabilities	4 4
6.	A/B Purchased inputs / Own resources [can be in either order] C Milk output	3 + 3 2
7.	(i) Increase (ii) No change	4 4
8.	Any two of the following: <ul style="list-style-type: none">• Land purchase / sales• Long-term leasing• Inheritance• Family farm partnerships• Share farming	2 @ 4m
9.	(i) Basic (ii) Department of Agriculture [Food and the Marine]	4 4

* In respect of Part 1, Question 3(ii), the use of the term 'complementary good' in the question is invalid in this context. Accordingly, all candidates were awarded 4 marks for this element of the question. No candidate was disadvantaged as a result.

PART 1		
10.	(i) the total number of people at work (part or full time) plus the number of people unemployed. (ii) Quarterly National Household Survey (QNHS)	2 + 2 4
11.	(i) Solvency (ii) Balance sheet	4 4
12.	(i) Binding (ii) Non-binding	4 4
13.	(i) 5 units (ii) 9 units	4 4
14.	(i) Political lobbying occurs when interest groups like farmers' organisations attempt to influence government policy or decisions in their favour. Lobbying can be done through meetings, negotiations or other exchanges with government ministers, public representatives or officials (ii) <i>Any one of the following:</i> <ul style="list-style-type: none"> • Irish Farmers Association (IFA) • Irish Creamery Milk Suppliers Association (ICMSA) • Macra na Feirme • Irish Cattle and Sheep Farmers Association (ICSA) 	2 + 2 4
15.	<i>Any two of the following:</i> <ul style="list-style-type: none"> • Premium price for quality assured product • Greater certainty of a market for their produce • Support and training for maintaining quality standards on farm • Award schemes for the highest standards achieved 	2 @ 4m (2 + 2)
16.	(i) True (ii) False (iii) True	3 3 2
17.	(i) 8% (ii) 13%	4 4

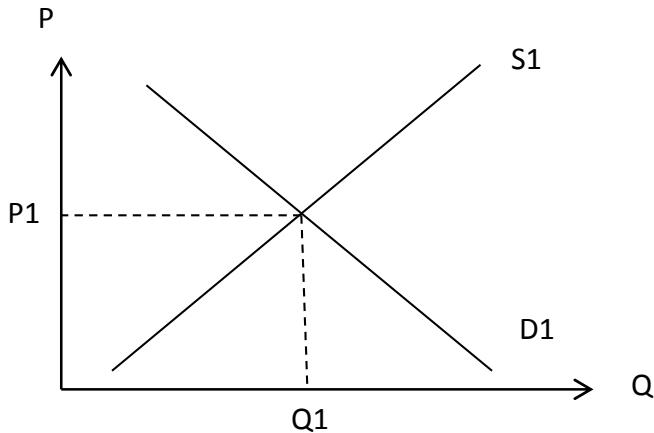
PART 1		
18.	(i) The opportunity cost of an activity is the value of the next best alternative that must be foregone in order to undertake that activity. (ii) If the next best alternative for a dairy farmer is to produce say winter wheat, the opportunity cost per hectare of dairy farming is the per hectare profit foregone by the farmer in not producing winter wheat.	2 + 2 2 + 2
19.	X. Pigs Y. Sheep Z. Cattle	3 3 2
20.	(i) Cash / debtors / pre-paid expenses / non-breeding livestock (ii) Creditors / accrued expenses / bank overdraft (iii) Land / farm buildings / farm machinery / breeding livestock (iv) Bank loan / other forms of long term debt and non-recurring payments not due within one year of balance sheet date	2 2 2 2

PART 2 (200 Marks)

Answer 4 questions from 6. 50 marks per question.

PART 2: Question 1

(a)(i) & (ii)



P axis – 2m
Q axis – 2m
S1 - 2m
D1 - 2m

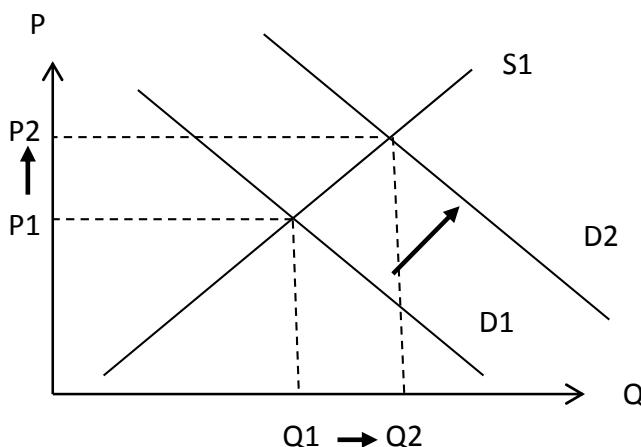
P1 - 4m
Q1 - 4m

(b)(i) Any one of the following:

- Increase in population
- Increase in incomes
- Increase in tastes / preference for milk
- Increased demand for complementary good [e.g. breakfast cereal]
- Reduced demand for substitute good [e.g. fruit juice]

5m (3 + 2)

(b)(ii) & (iii)



D2 - 5m
P2 - 4m
Q2 - 4m

(b)(iv) The increase in demand will lead to an increase in the quantity of milk produced in the EU and an increase in the market price of EU milk.

6m (3 + 3)

PART 2: Question 1

- | | |
|---|-------------|
| <p>(c) The abolition of milk quotas would be expected to encourage milk producers to produce more milk at any given price. Producers are no longer restricted to production limits set down by the EU.</p> <p>The market supply curve for EU milk would be expected to shift to the right, and, given unchanged demand conditions for EU milk, the quantity of milk produced would rise while the price of milk would fall.</p> | 10m (5 + 5) |
|---|-------------|

PART 2: Question 2

(a) A (Extra revenue)	Sale of milk / sale of calves	4
B (Costs saved)	Purchase of barley seed / purchase of fertilisers and crop protection products / contractor or harvesting costs	4
C (Extra costs)	Purchased feed / casual labour / veterinary costs / milking equipment	4
D (Revenue foregone)	Sale of barley / sale of barley straw.	4
(b) X (Total gains)	$20,000 + 5,000 = €25,000$	3
Y (Total losses)	$10,000 + 8,000 = €18,000$	3
Z (Net gain / loss)	$25,000 - 18,000 = €7,000$	3
(c) Should the farmer go ahead?	Yes. Explanation: There is a net gain of €7,000 in making the change, as the value of total gains exceeds total losses by that amount.	5m 10m (5 + 5)
(d) Any one of the following:	<ul style="list-style-type: none"> • Has the farmer the regular labour available to meet the requirements of working a larger dairy herd? • Has the farmer the time available to him for managing a larger dairy herd? • Is the farmer running a risk in becoming more specialised in one farm enterprise? • Are grazing fields for the larger herd close to the farmyard / milking parlour? • Are the farm roadways and water supply systems suitable for a larger herd? • Is there sufficient housing space so that all the cows in the larger herd can stay healthy? • Will there be a change in the farmer's carbon footprint? • Cash flow benefits of dairy production (as opposed to barley) • Bigger dependence on outside contractors for barley production (as opposed to dairy) 	10m (5 + 5)

PART 2: Question 3	
(a) A Total Fixed Costs. The same level of fixed costs applies regardless of the level of output.	5m (3 + 2)
B Total Variable Costs Variable costs increase as the level of output increases	5m (3 + 2)
(b) <i>Variable:</i> Purchased feed / causal labour / veterinary expenses / transport / fertilisers. <i>Fixed:</i> Insurances / accountancy fees / car and phone / regular labour / local authority charges / bank repayments / electricity.	5 5
(c) Total revenue is the money value of milk output sold off the farm to the market. It is the product of actual output (in litres) multiplied by the market price (in € per litre).	5m (3 + 2)
(d)(i) At zero output nothing is sold by the farmer and hence revenue is zero.	5
(d)(ii) Fixed costs arise even if there is no output from the farm.	5
(e)(i) Q2 is the profit-maximising level of output.	5
(e)(ii) Either of Q1 or Q3 are break-even levels of output.	5m (3 + 2)
(e)(iii) Any level of output below Q1 or any level of output greater than Q3.	5m (3 + 2)

PART 2: Question 4

<p>(a) Any three of the following:</p> <ul style="list-style-type: none"> • Land • Farm machinery • Farm animal buildings • Breeding livestock • Fodder storage facilities • Facilities for storage or treatment of farm wastes • Milking facilities • Grain storage • Drying facilities • Farm roads • Farm water supply 	15m (3 @ 5m)
<p>(b) Like any other business, commercial farming must continue to progress. The farmer who wishes to expand output will need more capital investment.</p> <p>Technology and knowledge continues to improve and farmers will see the benefits of investment in terms of efficiency and cost control.</p> <p>Farmers have demanding environmental responsibilities and ongoing investment is also required here.</p> <p>Further capital investment tends to reduce the pressure for more labour input on the farm including that of the farmer himself.</p> <p>Also, capital formation will be required to take advantage of the expiry of milk quotas and the emergence of new markets for Irish agricultural products.</p>	10m (5 + 5)

PART 2: Question 4

(c) Any one of the following sources:

Source	Advantage	Risk
Own finances	Autonomy / possible tax advantages / timing of investment as required / some bargaining power with supplier	Delay in building up funds / bad decisions if the farmer takes no advice with investment / other calls on own finances may be denied
Bank loan	Doesn't require full funds up front / predictability of future payments aids cash flow budgeting / farmer incentivised to make the investment work so as to meet payments	Delays and red tape in applying for loan / application for loan may be refused / expensive / farmer may not be able to terminate the loan if he wants to sell the asset
Leasing	Similar to bank loan / leasing company may be liable for upkeep of asset / lease agreement may allow for the term to be cut short to acquire more up-to-date capital	Asset not owned until final payment is made / application for lease may not be approved / expensive

(d) Any one of the following:

- Use of drones to monitor livestock and fencing (saves time and labour)
- Use of soil testing equipment (to correctly identify the soil nutrient needs of individual fields)
- Automated milking facilities (to save time and labour while managing more cows)
- Computer controlled fodder management (saves time and makes for efficient provision of feed to animals)
- Automated recording of animal performance (timely and accurate data to enable prompt decisions)
- Mobile apps (weather forecasts, data management / record-keeping and financial / technical analysis)
- Knowledge dissemination through the internet.

5m
+ 5m (3 + 2)
+ 5m (3 + 2)

10m (5 + 5)

PART 2: Question 5

<p>(a) The ‘Factor of Production Inputs’ are the land, labour, capital and enterprise/management employed in the farming sector, whether owned or purchased.</p> <p>‘Intermediate Inputs’ are products of other industries used in the farming sector. These are goods and services that are not produced as final goods for consumption, e.g. purchased feed and fertilisers.</p>	<p>8m (4 + 4)</p> <p>8m (4 + 4)</p>												
<p>(b)(i) A (Grain-based animal feed)</p> <p>(b)(ii) C (Diesel)</p> <p>(b)(iii) B (Fertilisers)</p> <p>(b)(iv) C (Accountancy services)</p> <p>(b)(v) B (Crop-protection products)</p>	<p>10m (5 @ 2m)</p>												
<p>(c)</p> <table border="1" data-bbox="223 871 1208 1738"> <thead> <tr> <th data-bbox="223 871 409 938">Series</th><th data-bbox="409 871 774 938">Overall price trends</th><th data-bbox="774 871 1208 938">Price volatility</th></tr> </thead> <tbody> <tr> <td data-bbox="223 938 409 1260">Electricity</td><td data-bbox="409 938 774 1260">Consistent increase in real prices with higher rate of increase in the second half of the period. By 2014 they were over 30% higher than in 2005.</td><td data-bbox="774 938 1208 1260">Real prices have increased steadily apart from modest declines in 2008 and 2010. In general, there has been little volatility.</td></tr> <tr> <td data-bbox="223 1260 409 1545">Fertilisers</td><td data-bbox="409 1260 774 1545">Highly erratic real price changes but in a generally upward direction. By 2014 real prices were nearly 50% higher than in 2005.</td><td data-bbox="774 1260 1208 1545">Highly volatile with a 70% increase in 2008. This surge in real prices was partially reversed by declines in 2009 and 2010. Real prices have been in decline since 2012.</td></tr> <tr> <td data-bbox="223 1545 409 1738">Veterinary expenses</td><td data-bbox="409 1545 774 1738">Real prices more or less unchanged between 2005 and 2014.</td><td data-bbox="774 1545 1208 1738">Real prices have remained pretty much the same from year to year i.e. very little volatility.</td></tr> </tbody> </table>	Series	Overall price trends	Price volatility	Electricity	Consistent increase in real prices with higher rate of increase in the second half of the period. By 2014 they were over 30% higher than in 2005.	Real prices have increased steadily apart from modest declines in 2008 and 2010. In general, there has been little volatility.	Fertilisers	Highly erratic real price changes but in a generally upward direction. By 2014 real prices were nearly 50% higher than in 2005.	Highly volatile with a 70% increase in 2008. This surge in real prices was partially reversed by declines in 2009 and 2010. Real prices have been in decline since 2012.	Veterinary expenses	Real prices more or less unchanged between 2005 and 2014.	Real prices have remained pretty much the same from year to year i.e. very little volatility.	<p>4m (2 + 2)</p> <p>+</p> <p>4m (2 + 2)</p> <p>4m (2 + 2)</p> <p>+</p> <p>4m (2 + 2)</p> <p>4m (2 + 2)</p> <p>+</p> <p>4m (2 + 2)</p>
Series	Overall price trends	Price volatility											
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PART 2: Question 6

<p>(a)(i) Teagasc is the agriculture and food development authority in Ireland. Its main aim is to provide science-based support and innovation in the agri-food sector so that the sector can be profitable and environmentally sustainable.</p>	5m (3 + 2)
<p>(a)(ii) <i>Any two of the following:</i></p> <ul style="list-style-type: none"> • Research into agricultural production, environmental protection, food processing, economics, and business development at various research centres • Provision of an advisory service to farmers • Education of would-be farmers at agricultural colleges • Training of farmers through offering courses, discussion groups, meetings, farm walks, etc. 	2 x 5m (3 + 2)
<p>(a)(iii) Farmers can make their farms more profitable and competitive as well as being environmentally aware by availing of Teagasc services. Farmers can receive a formal agricultural education as well as ongoing advice to support their business. Farmers can also learn about the latest developments in farming through the various ways in which Teagasc puts out information. Teagasc's food research programmes support the development of the Irish food industry with the prospect of increasing demand for Irish farm produce.</p>	2 x 5m

PART 2: Question 6

<p>(b)(i) Bord Bia is the Irish Food Board. It is a state agency with the main aim of promoting sales of Irish food and horticulture both abroad and in Ireland itself.</p>	<p>5m (3 + 2)</p>
<p>(b)(ii) <i>Any two of the following:</i></p> <ul style="list-style-type: none"> • Operation of the national food Quality Assurance Scheme • Supports environmentally friendly farm and food production through the <i>Origin Green</i> initiative • Supports new and existing food companies through various schemes • Carries out marketing of Irish food and horticulture abroad • Monitors food and commodity price movements as a service to farmers and food producers • Promotes Irish food through demonstrations and production of recipes • Supports amateur gardening through information and events such as <i>Bloom</i>. 	<p>2 x 5m (3 + 2)</p>
<p>(b)(iii) Farmers benefit from the premium prices and stable markets for their produce by participating in the Quality Assurance Scheme. Bord Bia keeps farmers informed of the latest commodity price trends. Bord Bia also provide specialist advice on setting up farmers' markets. The more successful Bord Bia is in promoting Irish food the greater should be the demand for the produce of Irish farmers and horticulturalists.</p>	<p>2 x 5m</p>

Marcanna Breise as ucht freagairt trí Ghaeilge

Léiríonn an tábla thíos an méid marcanna breise ba chóir a bhronnadh ar iarrthóirí a ghnóthaíonn níos mó ná 75% d'iomlán na marcanna.

N.B. Ba chóir marcanna de réir an ghnáthráta a bhronnadh ar iarrthóirí nach ghnóthaíonn níos mó ná 75% d'iomlán na marcanna don scrúdú. Ba chóir freisin an marc bónais sin a **shlánu síos**.

Tábla 320 @ 10%

Bain úsáid as an tábla seo i gcás na n-ábhar a bhfuil 320 marc san iomlán ag gabháil leo agus inarb é 10% gnáthráta an bhónais.

Bain úsáid as an ghnáthráta i gcás 240 marc agus faoina bhun sin. Os cionn an mharc sin, féach an tábla thíos.

Bunmharc	Marc Bónais
241 - 243	23
244 - 246	22
247 - 250	21
251 - 253	20
254 - 256	19
257 - 260	18
261 - 263	17
264 - 266	16
267 - 270	15
271 - 273	14
274 - 276	13
277 - 280	12

Bunmharc	Marc Bónais
281 - 283	11
284 - 286	10
287 - 290	9
291 - 293	8
294 - 296	7
297 - 300	6
301 - 303	5
304 - 306	4
307 - 310	3
311 - 313	2
314 - 316	1
317 - 320	0

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