



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2019

Marking Scheme

Agricultural Economics

Higher 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.

Note regarding the Marking Scheme

The support notes presented are neither exclusive nor complete. They are not model answers but a sample of possible responses.

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 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 Marks Allocations

PART 1 (120 Marks)

Answer 15 questions from 20. 8 marks per question.

Question	Marks	Question	Marks
1	3+3+2 marks	11	4 + 4 marks
2	2 x 4marks	12	3+3+2 marks
3	3+3+2 marks	13	4 + 4 marks
4	4 + 4 marks	14	2 x 4 marks
5	4+4 marks	15	2 x 4 marks
6	2 x 4 marks	16	2 x 4 marks
7	2 x 4 marks	17	3 + 5 marks
8	4 + 4 marks	18	4 + 4 marks
9	2 x 4 marks	19	2 x 3 marks + 2 marks
10	3+3+2 marks	20	4 + 4 marks

PART 2 (200 MARKS)

**6 QUESTIONS - 4 QUESTIONS TO ANSWER
ALL QUESTIONS CARRY EQUAL MARKS (50 marks).**

Question	Marks	Question	Marks
Question 1		Question 4	
A(i)	3 x 5 marks	a	3 x 5 marks
a(ii)	2 x 3 marks	b	2 x 10 marks
a(iii)	2 x 5 marks	c(i)	8 marks
b	6+5 marks	c(ii)	7 marks
c	4+4 marks		
Question 2		Question 5	
a	3 x 4 marks	a(i)	6 marks
b(i)	8 marks	a(ii)	6 marks
b(ii)	2 x 5 marks	a(iii)	6 marks
c(i)	6+4 marks	b(i)	2 x 5 marks
C(ii)	6+4 marks	b(ii)	2 x 5 marks
		c	2 x 6 marks
Question 3		Question 6	
a(i)	10 marks	a (i)	12 marks
a(ii)	12 marks	a(ii)	3 x 2 marks
a(iii)	6 marks	b(i)	4 marks
a(iv)	6 marks	b(ii)	4 marks
b(i)	4+4 marks	b(iii)	4 marks
b(ii)	4+4 marks	c	2 x 10 marks

Support Notes

PART 1 (120 Marks)

Answer 15 questions from 20. 8 marks per question.

PART 1		Marks
1.	<ul style="list-style-type: none"> (i) False (ii) True (iii) True 	3 + 3 + 2
2.	<p>Any two of, for example:</p> <ul style="list-style-type: none"> • Lower market prices for competing goods in production (e.g. wheat) • Decrease in cost of production of barley • Improved technology / plant breeding / crop protection • Improved weather conditions • Improved control of pests and disease • Less taxation on production • Less government environmental regulation on production methods • Increased demand for malting barley from brewers 	4 + 4
3.	<ul style="list-style-type: none"> (i) Dairy 23% (ii) Cattle Rearing 113% (iii) Tillage 65% 	3 + 3 + 2
4.	<p>This deals with the income volatility associated with the farming industry. If there is a high profit in one or two of the years, they are not taxed heavily on this. If there is a net loss over the total of the previous five years, no tax is payable.</p>	4 + 4
5.	<p>Correct value: – 2.5</p> <p>Reason: Low price cuts of beef are an example of an inferior good, thus it has a negative income elasticity of demand. As the good is not a necessary good, the income elasticity of demand has a value greater than 1 in absolute terms.</p>	4 + 4
6.	<p>Any two of, for example:</p> <ul style="list-style-type: none"> • Level of current earnings. • Expectations on future income/earnings. • Quality of pension schemes available. • Real interest rates on pension savings. • Expectations on state pension. • Tax implications of pension contributions. • Personal circumstances, e.g. age, number of children • Awareness of the need to have an income on retirement. 	4 + 4
7.	<p>Advantage: Any one of, for example:</p> <ul style="list-style-type: none"> • Increased aggregate demand for goods and services, leading to greater economic growth (production, investment). • Reduced dependency rates, if immigrant population is of working age and in employment. • Reduced labour shortages and labour costs in certain industries. • Increased immigrant population in areas experiencing economic decline (e.g. some rural areas and towns) can aid in redevelopment. • Introduction of new skills and/or entrepreneurship to the local workforce. 	4

	<p>Challenge: Any one of, for example:</p> <ul style="list-style-type: none"> • Increased pressure on local public services (e.g. health, education, social services). • Increased pressure on local infrastructure (e.g. housing, public transport, roads). • If immigrant population is elderly or not in work, an increase in dependency rates could be experienced. • Increased costs for housing in areas with a growing immigrant population, due to extra demand. 	4
8.	<p>Teagasc is a public authority that provides research, advice and training to the Irish agriculture and agri-food industries.</p> <p>The Irish Farmers Association (IFA) is a farmer representative organisation that campaigns and lobbies on behalf of member farmers at national and EU level.</p>	4 + 4
9.	<p>(i) Could be a rise or a fall.</p> <p>(ii) Definite rise.</p>	4 + 4
10.	<p>(i) Is included.</p> <p>(ii) Is not included.</p> <p>(iii) Is not included.</p>	3 + 3 + 2
11.	<p>Any one of, for example:</p> <ul style="list-style-type: none"> • Tax is regressive as it does not take into account the ability of property owners to pay. • Can be difficult for the government to forecast with any degree of accuracy the amount that will be earned in revenue as it is difficult to forecast the level of property sales. • Disincentives to sell land, which can impact on the productivity of the land. • A large proportion of the tax burden is placed on a relatively small proportion of the population (those selling). • Can encourage tax evasion or avoidance, thus negatively impacting on government revenue. • Increases the transaction cost associated with selling land. • Exemptions to farmers would reduce tax revenue for the government. 	4 + 4
12.	<p>(i) Real</p> <p>(ii) Fallen</p> <p>(iii) One</p>	3 + 3 + 2
13.	<p>A simple price index shows the percentage change in price for a single good from a base value.</p> <p>A composite price index is a weighted average of price changes from a base value across a number of goods or services, often based on the amount spent on each good or service (a weighted index).</p>	4 + 4

PART 2 (200 Marks)

Answer 4 questions from 6. 50 marks per question.

PART 2 – Question 1	Marks
<p>(a)(i)</p> <p>Any three of, for example:</p> <ul style="list-style-type: none">• The marginal revenue productivity of labour: the extra revenue that can be generated by hiring an extra unit of labour.• The wage rate: there is a negative relationship between the wage rate and a farmer’s willingness to hire more labour.• Demand for the farm’s output: if demand for output increases, the farmer will demand more labour to facilitate greater supply.• Government/institutional incentives to hire workers: e.g. farm placements as part of green certificate qualifications, PRSI exemptions.• State of technology: as improved technology becomes available and affordable, there will be less demand for the workers it may replace.• Expectations: where farmers expect changes that may affect the future profitability of their business, their demand for labour will be affected.• Price of alternative factors of production: where labour costs are greater than those associated with substitute factors (e.g. capital), the farmer may decide to take on more of the alternative factor as opposed to hiring more labour.• Seasonal peaks in farm tasks, e.g. lambing, harvesting – extra labour may be required at certain times of the year.	<p>15 marks</p> <p>(3 x 5m)</p>
<p>(a)(ii)</p> <p>Any two of, for example:</p> <ul style="list-style-type: none">• Proportion of total costs: as most Irish farms have few employees and will often hire them on temporary contracts, labour costs account for only a small proportion of total costs. As a result, labour tends to be more inelastic in demand.• Ease of substitution: where hired workers can be easily replaced by other factors of production (e.g. capital) as wages rise, there will be greater elasticity in demand.• Farmers are price takers. Thus, if labour costs rise, farmers have little opportunity to pass the increased cost on to consumers and as a result their demand for labour will be more elastic.• Skill level of workers: Where workers have specialised skills (e.g. veterinarian), it is unlikely that a farmer can replace their labour with family labour, capital or technology. Thus, the demand for such labour will be more inelastic.	<p>6 marks</p> <p>(2 x 3m)</p>

PART 2 – Question 1	Marks
<p>(a)(iii)</p> <p>Any two of, for example:</p> <ul style="list-style-type: none"> • By improving their own level of expertise in areas such as management and leadership, farmers are better placed to ensure they get the most from their workers. • By offering employees training and mentorship, farmers can help improve their level of efficiency and skill. • By selecting employees with prior training (e.g. green cert.) or work experience, farmers can ensure they hire only highly productive employees. • By interviewing or speaking with previous employers, farmers can ensure their employees have the necessary innate talents and experience necessary to perform a given task efficiently. • By providing employees with the capital and technology necessary to perform tasks efficiently. • By providing employees with a good work environment (e.g. protection from elements), workers will be able to perform more efficiently. • By allowing workers to specialise in a specific number of tasks, efficiency at those tasks can be improved. 	<p>10 marks</p> <p>(2 x 5m)</p>
<p>(b)</p> <p>A factor of production is a resource or input used to produce goods and services. The input is not used up in production. The 4 Factors of Production are land, labour, capital and entrepreneurship/management. After the production cycle is over, the factors are still available for the next production cycle.</p> <p>Example: labour in farming – the same labour is used in many different processes.</p> <p>An intermediate input is a product or service used up in the production process of other goods and services.</p> <p>Example: artificial fertilisers are used up in the agricultural production process. Extra supplies must be purchased for further production.</p>	<p>11 marks</p> <p>(3 + 3)</p> <p>(3 + 2)</p>
<p>(c)</p> <p>Answer: S2</p> <p>Where an intermediate input is sector-specific, then the demand for that intermediate input that arises within the sector will have an impact on the willingness of suppliers to supply more of it.</p> <p>For example, were the demand for artificial fertilizer to increase in the agricultural sector, this would put upwards pressure on the price that can be earned on sales of fertilizer and encourage producers to bring a greater quantity to market. The supply curve is therefore upward sloping.</p>	<p>8 marks</p> <p>(4 + 4)</p>

PART 2 – Question 2	Marks
<p>(a)</p> <p>Any three of, for example:</p> <ul style="list-style-type: none"> • Low incomes from farming: Agricultural productivity tends to increase at a faster rate than demand for agricultural produce. Hence agricultural output prices tend to fall in real terms over time, usually at a faster rate than non-agricultural prices. • Volatility of farming incomes: Agricultural supply is highly dependent on weather (and pests and disease). Prices and incomes can be highly volatile from one year to the next. • Food security: Governments are anxious to ensure that the nation has the capability of feeding itself and not be dependent on food imports. • Food safety: The government is obliged to ensure that the food we consume is safe and has been produced to high ethical and environmental standards • Rural way of life: Without government intervention to support farmers' incomes, it is likely that many farms would go out of business. This would contribute to population decline and lower economic activity in rural areas. • Environment and ecology: Farming tends to improve environmental diversity by using land in different ways. Large scale abandonment of farming activity would cause land to revert to scrub and wilderness. 	<p>12 marks (3 x 4m)</p>
<p>(b) (i)</p> <p>New way of working:</p> <p>Each member state will be required to create a strategic plan, setting out how they intend to meet the 9 EU-wide objectives using CAP instruments while responding to the specific needs of their farmers and rural communities.</p>	<p>4 + 4</p>
<p>(b) (ii)</p> <p>Proposed objectives. Any two of, for example:</p> <ul style="list-style-type: none"> • to ensure a fair income to farmers • to increase competitiveness • to rebalance the power in the food chain • climate change action • environmental care • to preserve landscapes and biodiversity • to support generational renewal • vibrant rural areas • to protect food and health quality. 	<p>5 + 5</p>

PART 2 – Question 2	Marks
<p>(c)(i)</p> <p>Economic benefits - two for example:</p> <ul style="list-style-type: none"> • Direct monetary benefit from the output (e.g. lumber) produced by forestry. • Enables the more productive use of land by encouraging forestry on land that is well suited to growing trees but may be less suited to other forms of farming. • Increased employment created by working in forestry and related industries. • Indirect benefits for other industries such as tourism that benefit from forestry amenities. <p>One Government policy, for example:</p> <ul style="list-style-type: none"> • Provision of grants and other financial support: at present, the Irish Government supports forestry through the Afforestation Grant and Premium Scheme. • Providing tax incentives: at present profits arising from woodland managed and used commercially are exempt from income and corporation taxes. • Provision of training and mentoring for farmers who wish to plant forestry. 	<p>Economic benefits: 6 marks (2 x 3m)</p> <p>Policy response: 4 marks</p>
<p>(c)(ii)</p> <p>Economic benefits, two for example:</p> <ul style="list-style-type: none"> • Reduction of earnings inequality between men and women in the sector. • Help improve economic incentives through better financial recognition for the economic contribution women make to the farming enterprise. • Help address areas of labour shortage in the industry by incentivising greater female participation. <p>One government policy, for example:</p> <ul style="list-style-type: none"> • Childcare cover: the provision of adequate local childcare at an affordable cost is an important issue in encouraging greater female participation. • Provision of financial incentives and support: at present the government offers ACORN funding for women in setting up businesses in rural areas. • Changes in the income tax regime that encourages joint farm ownership by spouses. • Changes in inheritance taxes that allow for easy transfer of farms to a spouse upon death. 	<p>Economic benefits: 6 marks (2 x 3m)</p> <p>Policy response: 4 marks</p>

PART 2 – Question 3					Marks
(a) (i)					10 marks (2 for copying table; 2 for each column)
Output	Total Fixed Costs	Total Variable Costs	Total Costs	Total Revenue	
0	€100	€0	€100	€0	
2	€100	€100	€200	€150	
4	€100	€200	€300	€300	
6	€100	€300	€400	€450	
(a)(ii)					12 marks (2 for axes; 2 for each function; 2 for labels)
<p style="text-align: center;">Cost and Revenue Graph</p>					
(a)(iii)					6 marks (3 + 3)
<p>Economic breakeven arises when total revenue and total costs are equal. There is no net loss or profit.</p> <p>Noreen's breakeven level of output is 4, where total revenue of €300 equals total costs of €300.</p>					
(a)(iv)					6 marks (3 + 3)
<p>At a level of output less than 4 (breakeven output), Noreen will be able to continue to produce in the short run, but not in the long run.</p> <p>In the short run, Noreen will only be expected to cover the day to day running costs of her farm, which is reflected in total variable costs. As total revenue is greater than variable costs at all levels of output less than 4, Noreen can continue to operate in the short run. However, in the long run, total revenue is less than total costs at all levels of output less than 4, which will result in the farm becoming insolvent.</p>					

PART 2 – Question 3	Marks
<p>(b)(i)</p> <p>Technical efficiency is achieved when the farmer is producing maximum output from the minimum quantity of inputs. As Methods A and B use alternative amounts of both capital (K) and labour (L) [10L + 15K or 20L + 10K] to produce a given level of output, it is not possible to identify which one is more technically efficient.</p>	<p>8 marks (4 + 4)</p>
<p>(b)(ii)</p> <p>Economic efficiency refers to the method that produces the given level of output at lowest cost. Because we have the unit cost of each input, it is possible to identify which one is economically efficient.</p> <p style="margin-left: 40px;"> [<i>Method B is economically efficient.</i>] </p> <p style="margin-left: 40px;"> [<i>Method A has a total cost of €5,500 [10 x €100 (Labour) + 15 x €300 (Capital)]</i>] </p> <p style="margin-left: 40px;"> [<i>Method B has a total cost of €5,000 [20 x €100 (Labour) + 10 x €300 (Capital)]</i>] </p>	<p>8 marks (4 + 4)</p>

PART 2 – Question 4	Marks
<p>(a)</p> <p>Any three of, for example:</p> <ul style="list-style-type: none"> • The green image of Irish dairy is well established. This gives Ireland an advantage in markets where consumers are becoming more health aware. • The suitability of Irish land and climate to grass production gives producers cost advantage over producers in other countries. • Irish dairy industry has become a major producer of some high value-added dairy outputs, such as infant formula, that has provided a competitive advantage in specific markets (e.g. emerging economies). • The food processing sector in Ireland is well established, with global reach and economies of scale (e.g. Kerry Group and Glanbia). • Irish dairy producers benefit from an extensive research and development sector, led by organisations such as Teagasc. 	<p>15 marks</p> <p>(3 x 5m)</p>
<p>(b)</p> <p>Economic Opportunities – any two of, for example:</p> <ul style="list-style-type: none"> • By increasing trade with countries outside the traditional markets of the UK and other EU countries, the Irish agri-food sector will benefit from greater diversification. • By reducing the sector’s reliance on any one market, the risk of loss resulting from adverse changes in that market are reduced. • By trading with a greater number of countries, the Irish agri-food sector has access to a greater overall market and provides opportunities for the agri-food sector to develop new higher-value outputs that may prove popular in these markets (e.g. infant milk powder for the China market). <p>Economic Challenges – any two of, for example:</p> <ul style="list-style-type: none"> • By trading more with markets that are more geographically distant from Ireland, agri-food producers may incur higher transportation and logistical costs. • Agri-food producers will incur higher costs in terms of regulatory compliance, as different regulations may apply across countries. • Agri-food producers may be exposed to greater exchange-rate risks. • Issues around language, cultural, legal or political norms and standards can impede the flow of trade. 	<p>Opportunities:</p> <p>10 marks (2 x 5m)</p> <p>Challenges:</p> <p>10 marks (2 x 5)</p>
<p>(c)(i)</p> <p>As the single largest export market for Irish agri-food output, a lower level of economic growth in the UK will have an adverse impact on Irish agri-food exports. Demand for Irish products would be lower in the UK. This would lead to a reduction in profits for Irish farmers and a possible rise in farming unemployment. It also would make Irish agri-food exporters look at other overseas markets.</p>	<p>8 marks (4 + 4)</p>
<p>(c)(ii)</p> <p>The rise in the value of the dollar relative to the euro will make exports to the US less expensive and more competitive in US markets. It will also make imports from the US more expensive and will therefore make US products less competitive in the Irish market.</p> <p>As oil prices are denominated in dollars, a rise in oil price would affect intermediate inputs for Irish agri-food producers (e.g. energy, fertilizer), thus reducing their profitability and/or competitiveness.</p>	<p>7 marks (4 + 3)</p>

PART 2 – Question 5	Marks
<p>(a)(i)</p> <p>This is a result of the ending of Farm Waste Management Scheme in 2008 (farm building investment fell from €244m in 2009 to €155m in 2010). The impact of the financial crisis on farm output prices and income was also a large contributing factor to this decrease in gross fixed capital formation.</p>	<p>6 marks (3 + 3)</p>
<p>(a)(ii)</p> <p>Much of this can be attributed to increased investment in agricultural machinery (increased from €156m to €386m between 2010 and 2015) and buildings (increased from €155m to €225m between 2010 and 2015). This may be attributed to the recovery in output prices following the financial crisis and the low borrowing costs that existed at the time.</p>	<p>6 marks (3 + 3)</p>
<p>(a)(iii)</p> <p>This can be attributed to a decline in output prices, an increase in uncertainty as a result of the Brexit referendum and a tapering off of the breeding stock investment that took place prior to the abolition of milk quotas (decline in breeding stock investment from €128m to €35m).</p>	<p>6 marks (3 + 3)</p>
<p>(b)(i)</p> <p>Any two of, for example:</p> <ul style="list-style-type: none"> • Farmers are inclined to take out lower value loans, but at a higher volume than others in the SME sector. As a result, the average interest rate is higher on agricultural borrowing. • Where farmers are deemed by lenders to be riskier as a result of market (e.g. price volatility) or personnel (e.g. accident) risks, the higher interest rate may reflect this. • Farmers may be more inclined than other SMEs to remain loyal to their existing bank and may not shop around as much to obtain the lowest interest rate on offer. • The security that farmers can offer as collateral on borrowing may not be perceived to be as good a quality as that offered by other SMEs. 	<p>10 marks (2 x 5m)</p>
<p>(b)(ii)</p> <p>Any two of, for example:</p> <ul style="list-style-type: none"> • Interest rates are higher where the risk of default is greater. • As Ireland has a relatively small number of banks and other lending providers, the lack of competition between institutions can result in higher interest rates. • Where banks find it more difficult to access funds, the lack of supply and increased cost of raising funds can be passed on in the form of higher interest. • Where uncertainty exists about the current or future macroeconomic performance of the economy (e.g. impact of Brexit), interest rates may reflect the increased level of risk. 	<p>10 marks (2 x 5)</p>

PART 2 – Question 5	Marks
<p>(c)</p> <p>The aim of the scheme was to ease cashflow pressures at farm level and to support farmers experiencing short-term financial pressure due to price and income volatility. The loan funds were made available due to the market uncertainty and drop in the value of the Pound Sterling following the Brexit referendum.</p> <p>Criteria:</p> <ul style="list-style-type: none"> • Available to all livestock farmers, tillage farmers, horticultural producers and others involved in primary agricultural production who meet certain criteria. • Not available in the forestry, aquaculture and equine sectors of farming. • Unsecured loans of up to €150,000 available to farmers on 1 to 6-year term. • Interest rates on the loans fixed at 2.95% for the term of the loan. • A maximum of €150m funding made available. • Loans can be used for future working capital requirements (e.g. feed, fertiliser, trading stock, tax). • Loans cannot be used for refinancing of existing debt or for new investment. • Applicants must be participating in a scheme involving a Rural Development Programme, Bord Bia Quality Assurance, DAFM Farm Partnership or DAFM Knowledge Transfer Programme. 	<p>12 marks</p> <p>(2 x 3m)</p> <p>(3 x 2m)</p>

PART 2 – Question 6				Marks
(a)(i) and (ii)				(i) (12 marks) (ii) (6 marks)
Balance Sheet as at 31 December 2018				
	€	€	€	
Fixed Assets				
Land & buildings	500,000			
Machinery	300,000			
Breeding livestock	100,000			
Total			900,000	4
Current Assets				
Cash	20,000			
Debtors	30,000			
Trading livestock	120,000			
Total		170,000		4
Current Liabilities				
Bank overdraft	40,000			
Creditors	60,000			
Total		100,000		3
Working Capital			70,000	2
Total Net Assets			970,000	
Financed by:				
Long-term Liabilities				
Long-term loans	100,000			
Total			100,000	1
Capital / Net Worth			870,000	2
Capital Employed			970,000	2
(b)(i)				
The working capital is the difference in value between current assets (i.e. assets which can be converted into cash reasonably quickly) and current liabilities (i.e. financial obligations of the farm which fall due for payment within the next year). It is important that it is a positive figure as this usually indicates short-term financial health as well as operational efficiency.				4 marks (2 + 2)
(b)(ii)				
The capital employed represents the net value of all the assets employed in the business for the purpose of producing a profit. Capital employed is often seen as measure of the resources available within the business, as it takes account of both current and fixed assets, while excluding current liabilities.				4 marks (2 + 2)

Blank Page

