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Markscheme

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Economics

Higher level

Paper 3

22 pages

International Baccalaureate
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Notes for examiners:

1. **Whenever relevant, carry over marks must be awarded. If a candidate makes an error in calculation, but then uses the incorrect figure appropriately and accurately in later question parts, then the candidate may be fully rewarded. This is the "own-figure rule" and you should put OFR on the script where you are rewarding this.**

2. **Alternative approaches may be taken in responses to the [4] questions that use A02 command terms. If this is the case and the alternative approaches are valid, then full credit should be given.**

1. (a)   State **two** characteristics of a perfectly competitive market.   **[2]**

*Award **[1]** for each valid characteristic.*

*Characteristics **may** include:*
- many small firms
- homogeneous product
- no barriers to entry (and exit)
- perfect information
- perfect factor mobility
- firms are price takers*.

(b)   Using a fully labelled diagram, outline the relationship between marginal product (*MP*) and average product (*AP*) of labour.   **[4]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The written response is limited.*	1–2
	For a fully labelled diagram showing an MP curve that peaks earlier and higher and that intersects AP at its maximum. **OR** For outlining that MP will fall (due to diminishing returns) [1] and will intersect AP at its maximum, because if MP>AP, AP will rise, and if MP<AP, AP will fall [1].	
2	*The written response is accurate.*	3–4
	For a fully labelled diagram showing an MP curve that peaks earlier and higher and which intersects AP at its maximum. **AND** For outlining that MP will fall (due to diminishing returns) [1] and will intersect AP at its maximum, because if MP>AP, AP will rise, and if MP<AP, AP will fall [1].	
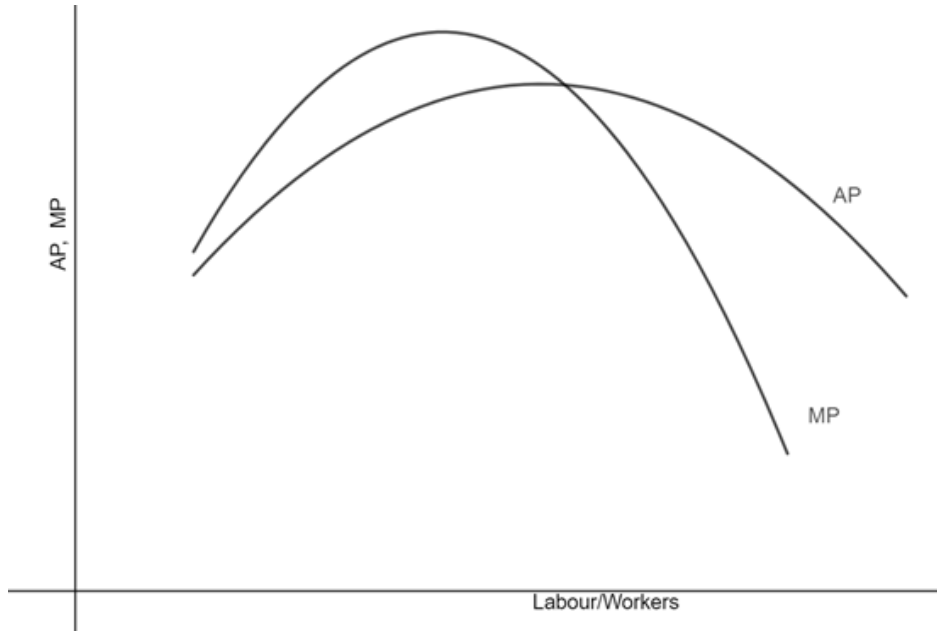
The vertical axis may be labelled Marginal/Average Product, Product, Output, (or abbreviations of these). The horizontal axis may be labelled (Quantity of) labour, workers, variable factor, input.

(c) (i)   Determine the slope of the market supply function for the corn farmers in Nissos.   [1]

(+) 1 is sufficient for [1].

(ii) Calculate the monthly equilibrium quantity of corn in Nissos.   [2]

$10 - 0.5P = P - 2$
$12 = 1.5P$
$P = 8$
$Q = -2 + 8 = 6$

Any valid working is sufficient for [1].

$Q = 6$ million kg

An answer of 6 million kg or 6 million or 6 without working is sufficient for [1].

For full marks to be awarded the response must provide some valid working and include correct units.

(d)   (i)   Plot and label in Figure 1 the market demand curve and the market supply curve for corn in Nissos.   [2]
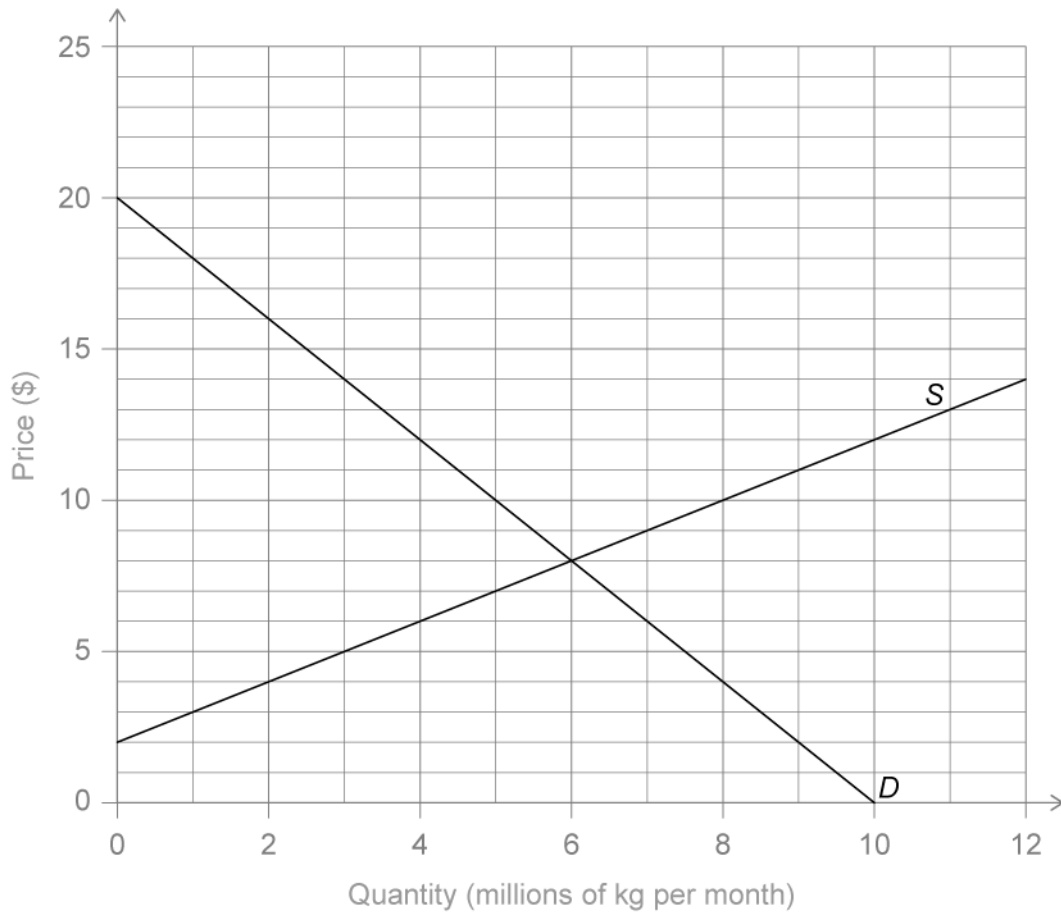
Level		Marks
0	The work does not meet a standard described by the descriptors below.	0
1	The response is limited.	1
	For an accurate, labelled demand curve **OR** supply curve **OR** for accurate demand and supply curves with incomplete labelling.	
2	*The response is accurate.*	2
	For an accurate, labelled demand curve **AND** supply curve.	

(ii)   Draw and label the marginal revenue (*MR*) curve for corn for an individual
        farmer in Nissos on the grid below.   **[1]**
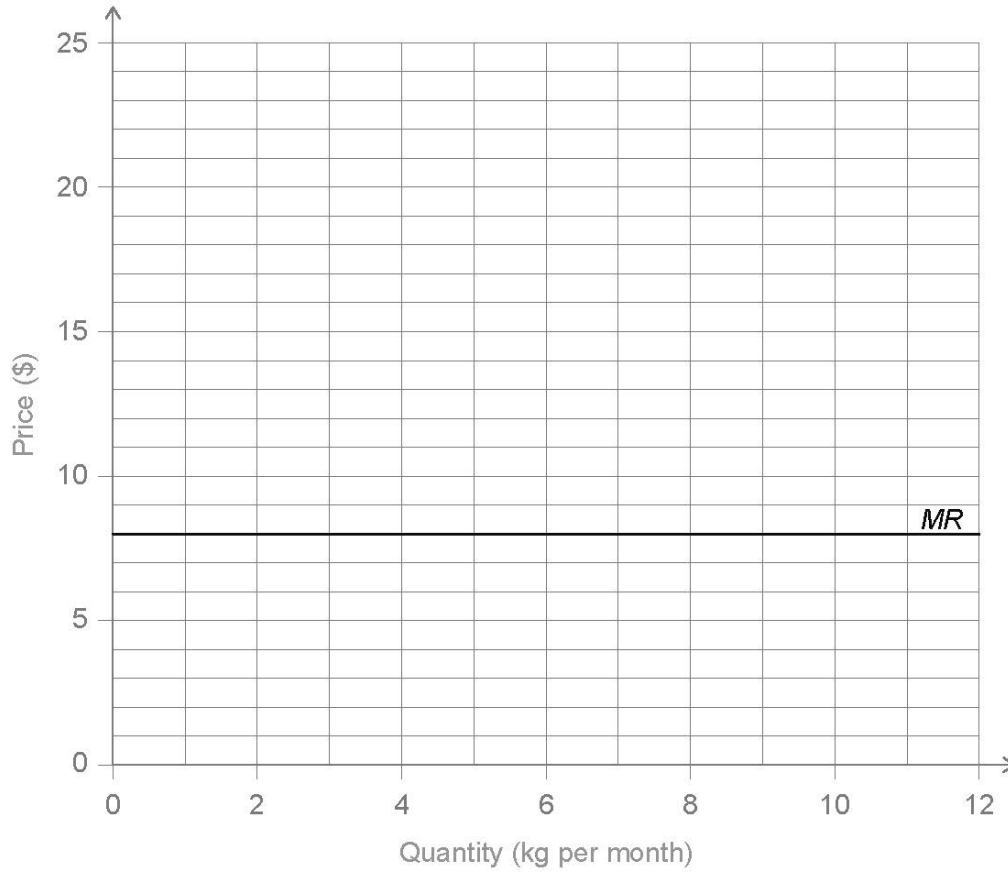
*Horizontal line at $8.00 with MR label on Figure 1 is sufficient for **[1]**.*

(iii)   Using Figure 1, calculate the consumer surplus in Nissos at the
        market equilibrium.   [1]

$$\frac{1}{2} \times 6 \,(20 - 8)$$

No workings are required.

*$36 million is sufficient for **[1]**.*

OFR applies.

(e) (i) Explain **one** possible advantage **and one** possible disadvantage
of governments setting a price floor in agricultural markets.   [4]

*For providing a limited explanation of **one** advantage **or one** disadvantage, award a
maximum of **[1]**.*

*For an accurate explanation of **one** advantage **or one** disadvantage **or** a limited
explanation of both, award a maximum of **[2]**.*

*For providing an accurate explanation of **one** advantage **or one** disadvantage **and** a
limited explanation of **one** disadvantage **or one** advantage, award a maximum of **[3]**.*

*For providing **two** accurate explanations, award a maximum of **[4]**.*

Level		Marks
0	The work does not meet a standard described by the descriptors below.	0
1	The written response is limited.	1–2
	*Advantages **may** include:* • supporting farmers' incomes/increasing producer surplus • decreasing income inequality • reducing rural-urban migration • decreasing price instability in agricultural markets. *Disadvantages **may** include:* • higher prices for consumers • overproduction of farm products (surplus) / misallocation of resources / allocative inefficiency • increased government expenditure • opportunity cost of financing the scheme *Any other valid response.*	
2	The written response is accurate.	3–4
	*Accurate explanations of advantages **may** include:* • supporting farmers' incomes, because farmers may have low and/or unstable incomes • decreasing income inequality, because rural areas have lower incomes than urban areas • reducing rural-urban migration, because urban areas have high unemployment and lower living standards due to population density • decreasing price instability in agricultural markets, which may occur because of weather and other random factors. *Accurate explanations of disadvantages **may** include:* • consumers will pay higher prices for food, which is a necessity • overproduction of farm products / misallocation of resources, because too much land is used for agriculture • increased government expenditure, which requires higher taxes or (increased) government borrowing • opportunity cost of financing the scheme, because spending on other needs will have to be foregone. *Any other valid and explained response.*	

(ii)   Draw and label on **Figure 1** a curve that illustrates the price floor in Nissos that leads to a monthly surplus of 3 million kg of corn. **[2]**
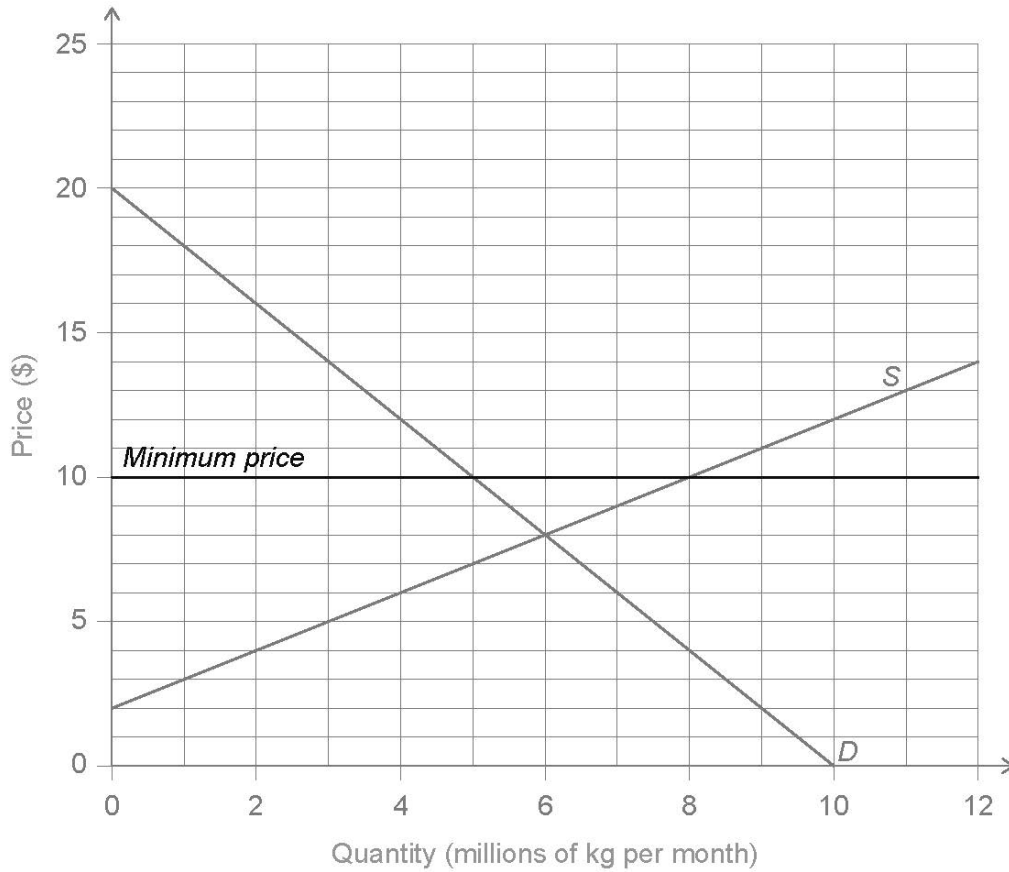
Award [1] for a horizontal line above the equilibrium price.

Award [1] for the line being drawn at $10.

If the line is not labelled a maximum of [1] may be awarded.

OFR applies.

(f)   (i)   State **one** measure that the government of Nissos might take to deal with this
              corn surplus, following the imposition of the price floor.   **[1]**

              Award [1] for one accurate possible measure.

              Measures may include:
              • destroying the surplus
              • storing for future use (possible future drought)
              • exporting abroad at a lower price
              • overseas food aid
              • purchasing the surplus
              • providing foodbanks or low-income families with (rationed) surplus
              • *any other valid measure.*

       (ii)   Outline why purchasing this surplus implies an opportunity cost for the
              government of Nissos.   **[2]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	*0*
1	*The response is limited.*	*1*
	For outlining that spending means sacrificing other alternatives.,	
2	*The response is accurate.*	*2*
	For outlining that the funds used on purchasing the surplus could have been used to finance education, health services *etc*, or that taxes would have to be higher or (the increased) borrowing penalizes (or burdens) future generations.	

       (iii) Using **Figure 1**, determine the size of the decrease in monthly corn consumption
              following the imposition of the price floor.   **[1]**

              1 million kg is sufficient for [1].

              No workings are required.

              OFR applies.

       (iv)   Using **Figure 1**, calculate the change in consumer expenditure on corn in Nissos.   **[2]**

              $8 \times 6 = \$48$ million
              $10 \times 5 = \$50$ million

              Any valid working is sufficient for [1].

              Change $= \$2$ million **OR** an increase of $2 million.

              An answer of 2 or 2 million or $2 million without working is sufficient for [1].

              OFR applies.

              *For full marks to be awarded the response must provide valid working and include
              correct units.*

2. (a) (i) Calculate the inflation rate for 2014 **and** for 2015. Enter your results in **Table 1**. **[2]**

2014: 1.95
2015: 4.89

Award [1] for each correct answer.

No workings are required.

***N.B.** Responses written either in **Table 1** or in the answer boxes provided should be fully rewarded*

(ii) Calculate the unemployment rate for 2012 **and** for 2013.
Enter your results in **Table 1**. **[2]**

2012: 7.34
2013: 5.33

Award [1] for each correct answer.

No workings are required.

***N.B.** Responses written either in **Table 1** or in the answer boxes provided should be fully rewarded.*

(b)   Explain **two** reasons why low and stable inflation is desirable.   **[4]**

*For a limited explanation of **one** reason, award a maximum of **[1]**.*

*For an accurate explanation of **one** reason **or** a limited explanation of **two** reasons, award a maximum of **[2]**.*

*For providing an accurate explanation of **one** reason **and** a limited explanation of a second reason, award a maximum of **[3]**.*

*For providing **two** accurate reasons, award a maximum of **[4]**.*

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The written response is limited.*	1–2
	*Reasons **may** include:* • higher level of investment spending is encouraged • export competitiveness is maintained • fixed money wage earners/recipients of transfer payments do not suffer a decrease in their purchasing power • efficiency of price mechanism is maintained • income is not redistributed from lenders to borrowers • income is not redistributed from consumers to other groups • to avoid currency depreciation. *Reasons why deflation is also undesirable are also valid, such as*: • deflationary spiral • avoidance of a deflationary gap. *Any other valid reason.*	
2	*The written response is accurate.*	3–4
	*Accurate explanations **may** include:* • higher level of investment spending is encouraged as companies can predict future revenues and costs with less uncertainty/more confidence • export competitiveness is maintained so trade deficits do not widen creating BOP problems / so export-driven growth is maintained • money wage earners and recipients of transfer payments do not suffer a decrease in their purchasing power as they usually cannot negotiate higher wages/payments (or, so income inequality does not widen) • efficiency of price mechanism is maintained permitting efficient allocation of resources • income is not redistributed from lenders to borrowers, so that lenders (banks) do not charge unnecessarily high interest rates / so that borrowing is not excessively encouraged • income is not redistributed from consumers to other groups such as shareholders/producers, who would have benefited from higher profits (or, so income inequality does not widen) • to avoid currency depreciation, which would lead to higher import prices and production costs. *Reasons why deflation is also undesirable are also valid, such as:*	

	• deflation may lead to a deflationary spiral, in which prices and profits keep falling • if prices are not maintained, a deflationary gap may occur with a decrease in economic activity and/or higher unemployment and/or bankruptcies. *Any other valid and explained reason.*	

(c)   State **two** functions of a country's central bank.   **[2]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	For stating any **one** of the following responsibilities: • regulator of commercial banks • banker to the government/managing government finances • conducting monetary policy/control of interest rates/control of money supply/maintenance of price stability • conducting exchange-rate policy • holder of foreign exchange reserves • issuer of notes and coins • promoting full employment • banker to the commercial banks • lender of last resort.	1
2	For stating any **two** of the following responsibilities: • regulator of commercial banks • banker to the government/managing government finances • conducting monetary policy/control of interest rates/control of money supply/ maintenance of price stability • conducting exchange-rate policy • holder of foreign exchange reserves • issuer of notes and coins • promoting full employment • banker to the commercial banks • lender of last resort.	2

(d) Using the data in **Table 1** to support your answer, identify **two** reasons why many economists would consider Country A's economy to be performing poorly in 2012. **[2]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	*0*
1	*The response is limited.*	*1*
	Either high unemployment **OR** deflation is identified with supporting evidence *OR* both are identified but with no reference to the data.	
2	*The response is accurate.*	*2*
	Both high unemployment *AND* deflation are identified accurately, with supporting evidence (*eg* numerical data or "negative inflation") from **Table 1** for **at least one** of the reasons.	

NB *A response which only states the correct data without specifying that there is high unemployment and deflation may be awarded a maximum of **[1]**.*

(e) State **one** reason why monetary policy is considered to have limited effectiveness in increasing aggregate demand if an economy is in a deep recession. **[1]**

*Answers **may** include:*
- Interest rates are already close to zero.
- Spending depends on confidence/indebtedness as well as interest rates.
- Money demand may be highly sensitive (elastic/flat) with respect to interest rates.
- Investment/consumption may not be sensitive to changes in interest rates.

Any other valid reason.

*Award **[1]** for **one** possible reason.*

(f)   Explain **two** reasons why fiscal policy may prove effective in lifting an economy out
        of a deep recession.   **[4]**

*For a limited explanation of **one** reason, award a maximum of **[1]**.*

*For an accurate explanation of **one** reason **or** a limited explanation of **two** reasons, award a
maximum of **[2]**.*

*For providing an accurate explanation of **one** reason **and** a limited explanation of a second
reason, award a maximum of **[3]**.*

*For providing **two** accurate reasons, award a maximum of **[4]**.*

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The written response is limited.*	1–2
	*Reasons **may** include:* • An increase in Government spending is direct or can target specific sectors. • Spending by the government will often increase confidence levels. • There may be a multiplier effect. • Lowering income taxes increases disposable incomes. *Any other valid reason.*	
2	*The written response is accurate.*	3–4
	*Accurate explanations **may** include:* • An increase in Government spending (G) is direct since G is a component of aggregate demand or since infrastructure or subsidies can be targeted towards key areas. • Spending by the government will often directly increase employment (or decrease unemployment) and thus confidence levels. • There may be a multiplier effect as a rise in income leads to a rise in consumption. • Lowering income taxes increases disposable incomes and thus may positively affect spending as well as confidence levels. *Any other valid and explained reason.*	

(g) Outline the meaning of the natural rate of unemployment, with reference to the long-run Phillips curve and types of unemployment. **[2]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*Vague outline.*	1
	For the idea that it is the unemployment level at which the long-run Phillips curve is vertical **OR** That it consists of structural, (seasonal) and frictional unemployment.	
2	*Accurate outline.*	2
	For the idea that it is the unemployment level at which the long-run Phillips curve is vertical **AND** That it consists of structural, (seasonal) and frictional unemployment.	

*NB A response that refers to the types of unemployment that are **not cyclical** may be rewarded.*

*NB Responses for (h) and (i) written either in **Table 2** or in the answer boxes provided should be fully rewarded.*

(h) Using the information in **Table 2** for Country B:

    (i) calculate nominal GDP in 2014. Enter your result in **Table 2**. **[1]**

    *351.70 is sufficient for **[1]**.*

    No workings are required.

    (ii) calculate nominal GNI in 2015. Enter your result in **Table 2**. **[1]**

    *292.56 is sufficient for **[1]**.*

    No workings are required.

(i) Using the information in **Table 2** for Country B, determine real GDP in 2014 **and** in 2015. Enter your results in **Table 2**. **[1]**

2014: 351.70
2015: 355.84

*Award **[1]** for **both** correct figures.*

No workings are required.

OFR applies for 2014 figure.

(j) Using the information in **Table 2** for Country B, calculate the rate of economic growth between 2014 and 2015. **[1]**

$$\frac{355.84 - 351.7}{351.7} \times 100 = 1.1771$$

No workings are required.

1.18% or 1.18 is sufficient for [1].

OFR applies.

(k) Outline **one** possible disadvantage of foreign direct investment (FDI) for economically less developed countries. **[2]**

*Award [1] for stating **one** possible disadvantage **without** any outline.*

*Award [2] for stating **one** possible disadvantage **with** a brief outline.*

*Disadvantages **may** include:*
- Repatriation of profits and royalties may lead to balance of payments problems.
- Importation of intermediate goods and capital goods may lead to balance of payments problems.
- Domestic firms may be hurt as they may be small and not able to compete.
- Technology employed may be inappropriate so that employment decreases.
- Income inequality may widen between rural and urban areas where most MNCs locate.
- The tax contributions may be less than expected because of tax concessions and/or transfer pricing.
- MNCs may use their economic power to adversely influence markets/government policies.
- Production by MNCs may result in negative externalities/exploitation of resources.

Any other valid disadvantage outlined.

3. (a) (i) If a visitor to Gardia from the US buys a towel that costs 23 gamma, calculate the cost in US$. **[1]**

$$\frac{23}{6.2} = 3.71$$

No workings are required.

*US$3.71 or 3.71 is sufficient for **[1]**.*

(ii) More foreign tourists are visiting Gardia. Outline the effect on the value of the gamma. You must give a reason for your answer. **[2]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The response is limited.*	1
	For a response that the gamma will appreciate **OR** the value of the gamma rises.	
2	*The response is accurate.*	2
	For a response that the gamma will appreciate **OR** the value of the gamma rises **AND** because the demand for gamma will have increased.	

(iii) State **two** factors that could cause Gardia's current account to be in deficit, even though its balance of trade in goods is in surplus. **[2]**

*Possible factors **may** include:*
- Gardia could have a (greater) deficit on its services account, *eg* in transport or insurance or tourism.
- Gardia could have a (greater) deficit on its income account, *eg* in profits, interest or dividends on its overseas assets or in salaries paid from overseas (remittances might be included here).
- Gardia could have a (greater) deficit on its current transfers/transfer payments, *eg* in overseas aid or income remittances or pensions paid overseas.

***NB** Using examples is sufficient (though not required) but for **[2]** the examples must be from different accounts (bullet points).*

***NB** A response that provides **at least one** account but does not refer to it having a (greater) deficit should be awarded **[1]**.*

*Award **[1]** for each valid factor.*

(iv) Determine the size of Gardia's current account surplus/deficit when the sum of the financial and capital accounts is US$2 billion. **[1]**

*A deficit of US$2 billion or − $2billion is sufficient for **[1]**.*

(b)   Gardia is aiming to increase its economic growth rate. Explain **two** sources of economic growth for economically less developed countries.   **[4]**

*For a limited explanation of **one** source, award a maximum of **[1]**.*

*For an accurate explanation of **one** source **or** a limited explanation of **two** sources, award a maximum of **[2]**.*

*For providing an accurate explanation of **one** source **and** a limited explanation of a second source, award a maximum of **[3]**.*

*For providing **two** accurate sources, award a maximum of **[4]**.*

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The written response is limited.*	1–2
	*Sources **may** include:* • increases in human capital • appropriate technologies • innovative technologies from overseas • institutional changes • foreign direct investment • an expansionary fiscal policy • export promotion • depreciation of exchange rate. *Any other valid response that leads to economic growth.*	
2	*The written response is accurate.*	3–4
	*Accurate explanations **may** include:* • increases in quantities of human capital, *eg* through education in skills • development and use of appropriate technologies, *eg* intermediate technologies that do not require high fixed costs, but which increase productivity • adopting (implementing) innovative technologies from overseas with market potential, *eg* manufacturing electric cars • institutional changes, *eg* improving the efficiency of the legal system or establishing and protecting property rights • inviting foreign direct investment*,* *eg* to process local materials so that there is more value added domestically or to provide appropriate technologies • an expansionary fiscal policy that will increase AD through raising G or lowering income taxes • export promotion that will increase AD or that furthers vertical integration in the export sector • depreciation of exchange rate that will lead to exports becoming more competitive/imports less competitive; so AD increases. *Any other valid and explained response that leads to economic growth.*	

(c)   Calculate the additional cost of paying back the loan in gamma in 2019, due to
       the interest and the change in the exchange rate.   **[2]**

       2018: $4 \times 5.3 = 21.2$
       2019: $4.2 \times 6.2 = 26.04$

       *Any valid working is sufficient for **[1]**.*

       $26.04 - 21.2$
       $= 4.84$ million gamma or 4.84 million

       *An answer of 4.84 million or 4.84 or 4.84 million gamma without workings is sufficient for **[1]**.*

(d)   Calculate the equilibrium exchange rate for the US$ in terms of the gamma.   **[2]**

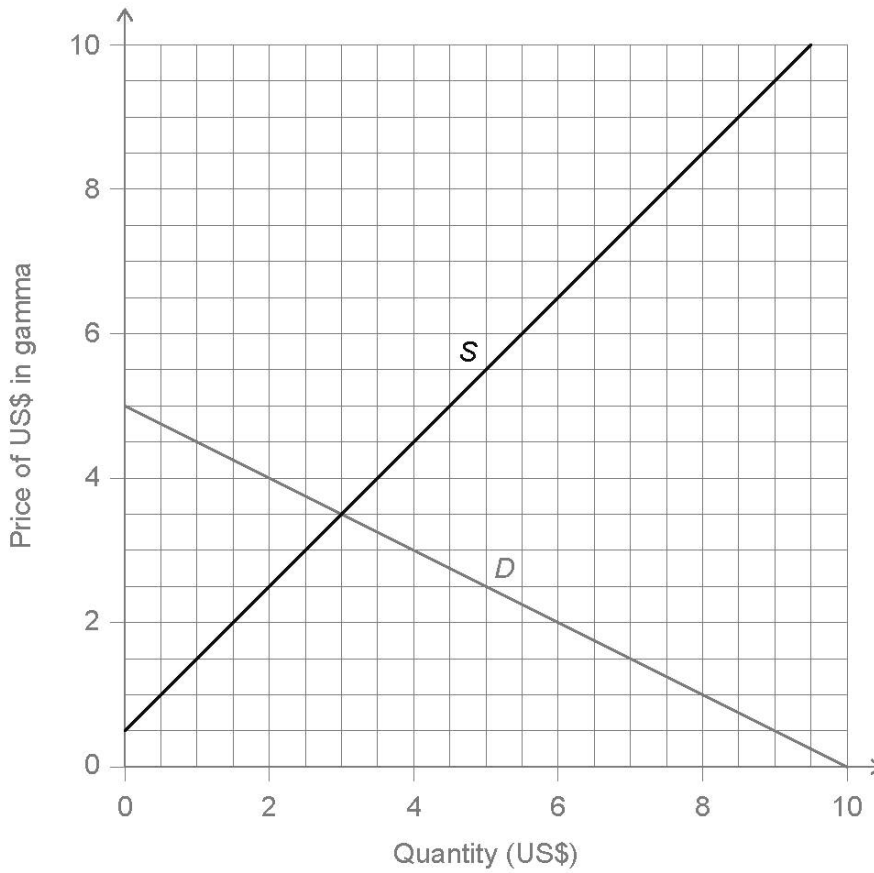 $g - 2 = 10 - 2g$
       $3g = 12$

       *Any valid working is sufficient for **[1]**.*

       $g = 4$ or $1 = 4 gamma$

       *An answer of 4g or 4 without workings is sufficient for **[1]**.*

(e)   Plot and label the new supply curve on **Figure 2**.   **[2]**

*Award **[1]** for a correctly plotted supply curve.*

*Award **[1]** for a correctly labelled supply curve.*

***NB** If the supply curve is incorrectly plotted with a label, then no marks should be awarded.*

(f)   (i)   Using **Figure 2**, calculate how many US$ are needed to buy one gamma at the
             new exchange rate.   **[1]**

       US$ $\dfrac{1}{3.5}$ = US$ 0.29   or 0.29 or 29 cents

       *Either of the above equivalent answers is sufficient for **[1]**.*

       OFR applies.

       *For OFR divide 1 by the equilibrium value that appears on the plot or whatever is
       indicated on the vertical axis that is given by the intersection of demand and supply.*

(ii)   State **two** reasons that could have caused an increase in the supply of US$.   **[2]**

*Reasons **may** include:*
- US increasing its imports **OR** Gardia increasing its exports of goods and services to the US
- Gardia's interest rates rising **OR** US rates falling
- Gardia's inflation rate falling **OR** the inflation rate in the US rising
- US incomes rising at a faster rate than incomes in Gardia
- more investment (financial and/or direct) flowing from the US to Gardia
- US government/central bank using dollars to buy gamma/foreign currencies
- speculative selling of dollars (because of expectation of depreciation)
- *any other valid reason.*

NB *Acceptable answers do not require an explicit reference to Gardia.*

*Award **[1]** for each valid reason.*

(g)   Calculate the maximum possible increase in real gross domestic product (GDP) in Gardia that could result from the changes in investment and government spending.   **[2]**

$$\frac{1}{1-0.75} \times (11-8) = 4 \times 3$$

*Any valid working (eg the multiplier being calculated correctly) is sufficient for **[1]**.*
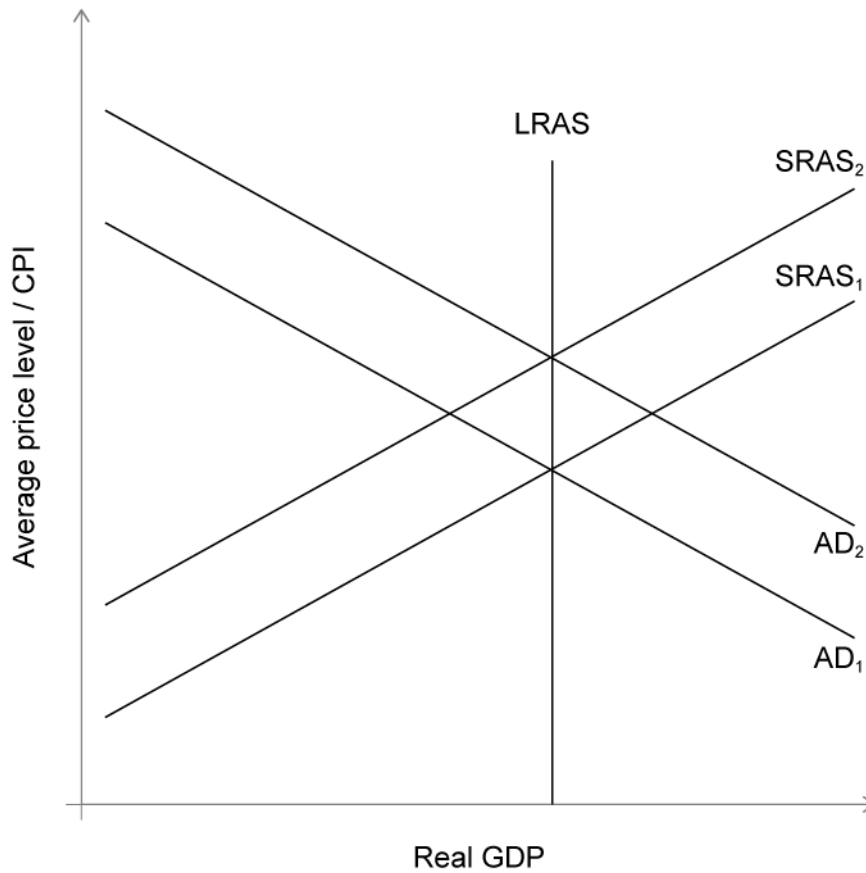
$= 12$ million gamma

*An answer of 12 million gamma or 12 without workings is sufficient for **[1]**.*

*If investment is ignored and so the answer provided is $11 \times 4 = 44$ then **[1]** may be awarded.*

For full marks to be awarded the response must provide valid working and include correct units.

(h) Using a fully labelled monetarist / new classical diagram, explain why, while there may be short-term fluctuations in output, the economy will always return to the full employment level of output in the long run. **[4]**

Level		Marks
0	*The work does not meet a standard described by the descriptors below.*	0
1	*The written response is limited.*	1–2
	For a fully labelled diagram showing AD shifting right and SRAS shifting left, with a new LR equilibrium at the intersection of LRAS and the new AD. **OR** For explaining that a higher price level (and lower unemployment) will lead to higher wages/input prices, so SRAS/production falls (to the left). The new long-run equilibrium is where the new AD intersects LRAS at a higher price level with no impact on real GDP (the full-employment level of output).	
2	*The written response is accurate.*	3–4
	For a fully labelled diagram showing AD shifting right and SRAS shifting left, with a new LR equilibrium at the intersection of LRAS and the new AD. **AND** For explaining that a higher price level (and lower unemployment) will lead to higher wages/input prices, so SRAS/production falls (to the left). The new long-run equilibrium is where the new AD intersects LRAS at a higher price level with no impact on real GDP (the full-employment level of output).	

NB *An alternative response which illustrates and explains how the economy would adjust to a* **decrease** *in aggregate demand should also be fully rewarded.*