

Markscheme

May 2025

Economics

Higher level

Paper 3

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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, 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.
3. A candidate may be penalized for not rounding correctly, failing to give answers correct to 2 dp or, in some cases, for not including the appropriate units. However, a candidate may only be penalized ONCE per script for each type of error.

1. (a) (i) Using **Figure 1**, calculate the change in consumer surplus resulting from the increased demand for gym memberships. **[2]**

$$(0.5 \times 150 \times 60) - (0.5 \times 100 \times 40) = 4500 - 2000$$

or $0.5 \times 20 (100 + 150)$

Any valid working is sufficient for [1], including if one consumer surplus is correct.

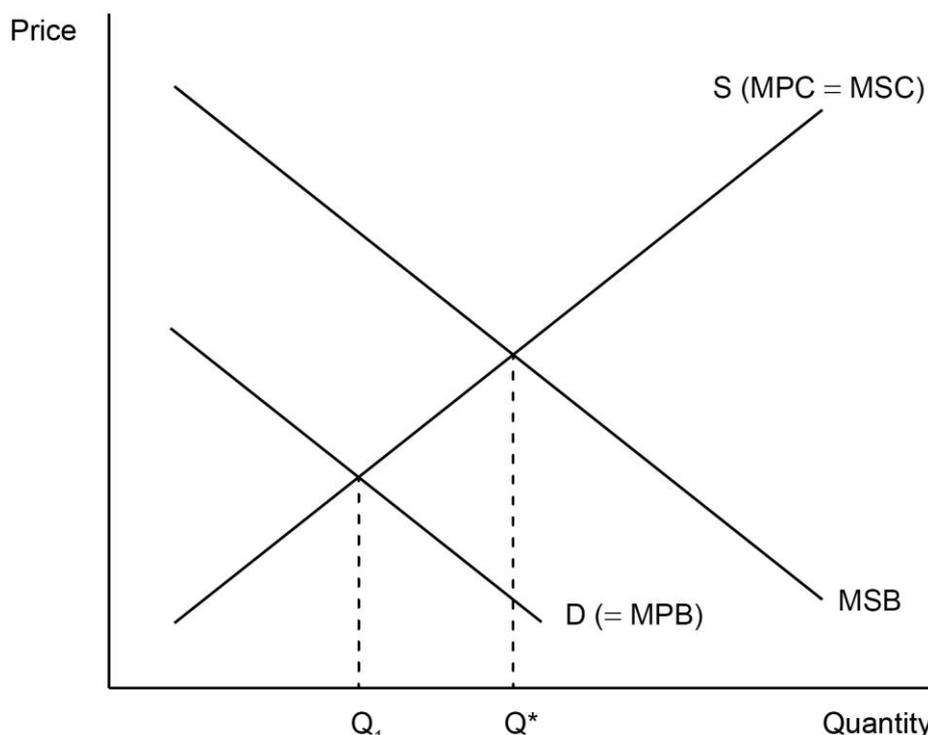
= \$2500 million or \$2.5 billion **[1]**

An answer of 2500, \$2500, 2500 million, \$2500 million, 2.5 billion or \$2.5 billion without any valid working is sufficient for [1].

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

(ii) Using a diagram, explain how market failure may exist in the market for gym memberships.

[4]



Level		Marks
0	<i>The work does not meet a standard described by the descriptors below.</i>	0
1	<i>The response is limited.</i>	1–2
	For a market diagram showing a positive externality of consumption, with $MPB < MSB$ and equilibrium output lower than the socially optimum level of consumption (or an accurate welfare loss/potential welfare gain) OR an explanation that use of gym memberships represents a positive externality / is a merit good and one of the following: <ul style="list-style-type: none"> • gym memberships are under-consumed • there is a welfare loss • there is a misallocation of resources. 	
2	<i>The written response is accurate.</i>	3–4
	For a market diagram showing a positive externality of consumption, with $MPB < MSB$ and equilibrium output lower than the socially optimum level of consumption (or an accurate welfare loss/ potential welfare gain) AND an explanation that use of gym memberships represents a positive externality / is a merit good and one of the following: <ul style="list-style-type: none"> • gym memberships are under-consumed • there is a welfare loss • there is a misallocation of resources. 	

Candidates who label the diagram incorrectly can be awarded a maximum of [3].

The y axis may be labelled price or P and/or costs and/or benefits, and the x axis may be labelled quantity or Q. A title is not necessary. S and D are not required to be part of the labelling.

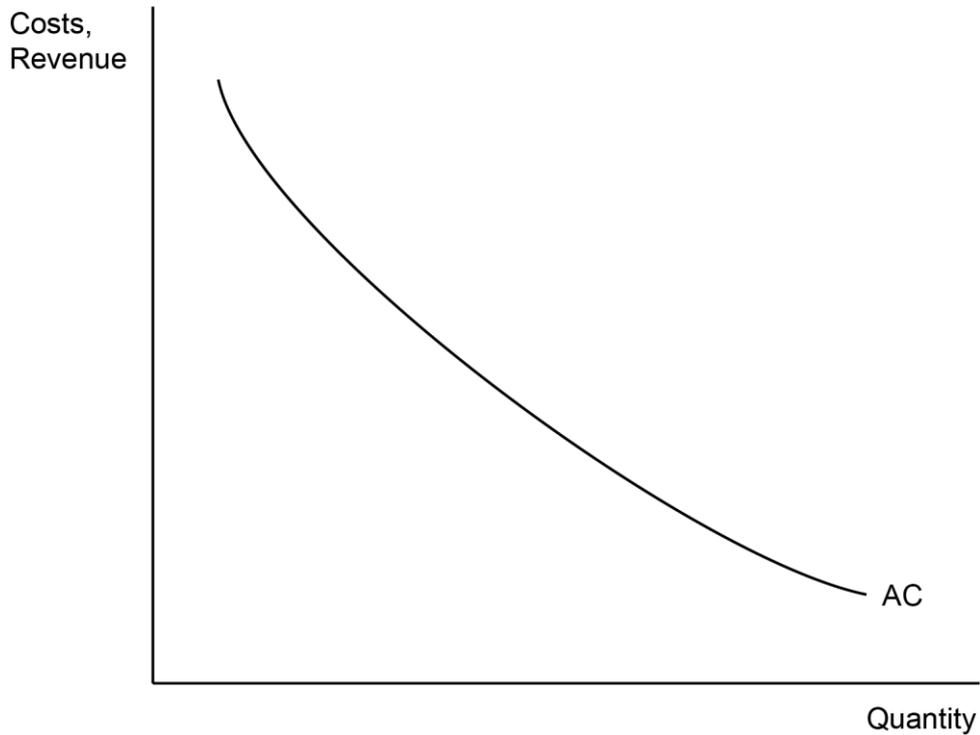
(iii) Define the term *bounded self-control*.

[2]

Level		Marks
0	<i>The work does not meet a standard described by the descriptors below.</i>	0
1	<i>Vague definition</i>	1
	For the idea that individuals may not act in their self-interest/may not act rationally OR For the idea that individuals lack self-control	
2	<i>Accurate definition</i>	2
	For a clear understanding that individuals may not exercise self-control, even if (they are aware that) such behaviour is not in their interests/not rational	

(iv) Sketch a diagram showing the average cost curve for a natural monopoly.

[2]



Level		Marks
0	<i>The work does not meet a standard described by the descriptors below.</i>	0
1	<i>The response is limited.</i>	1
	For a downward-sloping labelled average cost (AC) curve (over the relevant range of output; possibly with a “tail” sloping up) but without accurate labelling of axes.	
2	<i>The response is accurate.</i>	2
	For a downward sloping labelled average cost (AC) curve (over the relevant range of output; possibly with a “tail” sloping up) and with accurate labelling of axes and curve.	

N.B. It is not necessary to show MC, MR or AR curves.

The y axis may be labelled P or Price or Costs or AC or LRAC and/or Revenue. The x axis may be labelled Quantity or Q or Output. The curve may be labelled AC or LRAC.

- (v) Using **Table 1**, calculate marginal revenue if the number of members increases from 300 to 400 per month. [2]

$$MR = \Delta TR / \Delta Q = (36\,000 - 30\,000) / 100$$

Any valid working is sufficient for [1], including if the division by 100 is neglected or if one of TR figures is correct.

$$= \$60 \qquad \qquad \qquad [1]$$

An answer of \$60 OR 60 without any valid working is sufficient for [1].

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

- (vi) Using **Table 1**, calculate the increase in profit if the number of members increases from 400 to 500 per month. [2]

$$\text{Change in profit} = (40\,000 - 24\,700) - (36\,000 - 21\,600) = 15\,300 - 14\,400$$

Any valid working is sufficient for [1], including if one of the profit figures is correct,

$$= \$900 \qquad \qquad \qquad [1]$$

An answer of \$900 or 900 without any valid working is sufficient for [1].

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

- (vii) If the number of members increases from 500 to 600 per month, total costs per month will increase by USD 2800. Using **Table 1**, calculate the average cost per member for 600 members. [2]

$$AC = (24\,700 + 2\,800) / 600$$

Any valid working is sufficient for [1].

$$= \$45.83 \text{ or } \$45.8\bar{3} \qquad \qquad \qquad [1]$$

An answer of \$45.83 or 45.83 without any valid working is sufficient for [1].

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

(viii) Explain **two** alternative business objectives (other than profit maximization) which the owner of the gym might adopt. **[4]**

Level		Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	0
1	<i>The written response is limited.</i>	1–2
	<p><i>For a limited explanation of one objective, award a maximum of [1]. For an accurate explanation of one objective OR a limited explanation of two objectives, award a maximum of [2].</i></p> <p><i>Limited explanations may include identifying:</i></p> <ul style="list-style-type: none"> • Corporate social responsibility • Market share • Growth • Satisficing • Revenue maximization. 	
2	<i>The written response is accurate.</i>	3-4
	<p><i>For providing an accurate explanation of one objective AND a limited explanation of one other objective, award a maximum of [3]. For providing accurate explanations of two objectives, award a maximum of [4].</i></p> <p><i>Accurate explanations may include:</i></p> <ul style="list-style-type: none"> • Aiming to behave in an ethical/socially responsible manner/acting in a way which takes account of the interests of all stakeholders (corporate social responsibility) • Increasing or maintaining the percentage of market sales enjoyed by one firm (market share) • An increase in the firm’s size or scale (growth) • The firm seeks to make a satisfactory level of profit while pursuing other objectives (satisficing) • The firm seeks to maximize the value of sales (where MR = 0) (revenue maximization) • <i>Any other valid response.</i> 	

N.B. If a response contains more than two objectives, the best two should be assessed.

- (b) Using the text/data provided and your knowledge of economics, recommend a policy which could be introduced by the government of the USA to increase the number of people getting regular exercise.

[10]

*Possible policies **may** include (but are not restricted to):*

- Subsidies
- Maximum pricing
- Advertising/social marketing
- Government education policy
- Consumer nudges
- Government provision
- Policies to increase competition
- *Any other valid policy.*

N.B. If more than one policy is recommended, only the best policy should be rewarded, unless the policies are shown to be complementary or if they are compared/contrasted with the student's one chosen policy.

Assessment Criteria

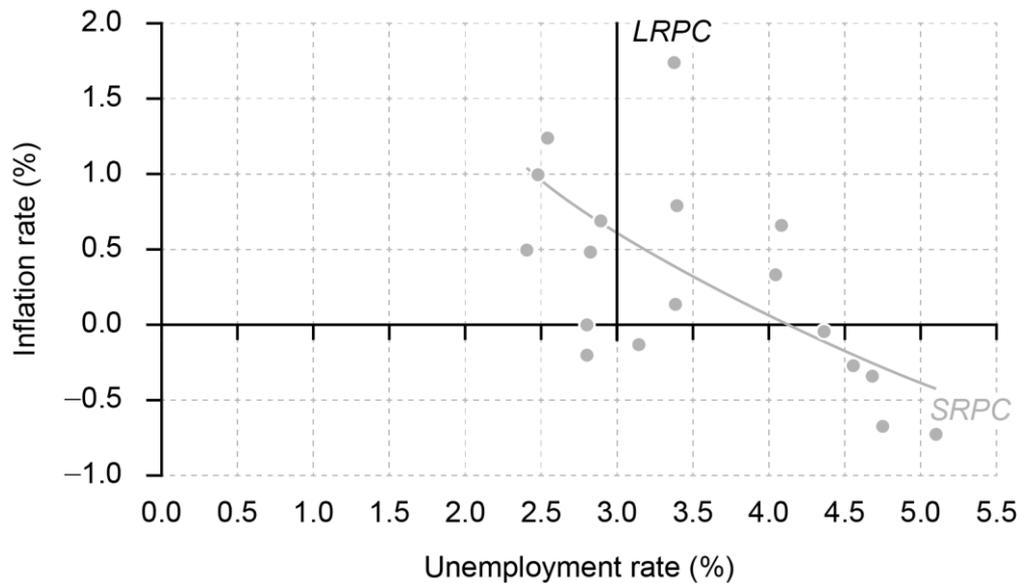
Recommend—present an advisable course of action with appropriate supporting evidence/reason in relation to a given situation, problem, or issue.

Marks	Level descriptor
0	<ul style="list-style-type: none"> • The work does not reach a standard described by the descriptors below.
1–2	<ul style="list-style-type: none"> • The response identifies a policy. • The response uses no economic theory to support the recommendation. • Economic terms are stated but are not relevant. • The response contains no use of text/data to support the recommendation. • The response contains no evidence of synthesis or evaluation.
3–4	<ul style="list-style-type: none"> • The response identifies an appropriate policy. • The response uses limited economic theory to support the recommendation in a superficial manner. • Some relevant economic terms are included. • The response contains no use of relevant text/data to support the recommendation. • The response contains evidence of superficial synthesis or evaluation.
5–6	<ul style="list-style-type: none"> • The response identifies and explains an appropriate policy. • The response uses relevant economic theory to partially support the recommendation. • Some relevant economic terms are used appropriately. • The response includes some relevant information from the text/data to support the recommendation. • The response contains evidence of appropriate synthesis or evaluation but lacks balance.
7–8	<ul style="list-style-type: none"> • The response identifies and fully explains an appropriate policy. • The response uses relevant economic theory to support the recommendation. • Relevant economic terms are used mostly appropriately. • The use of information from the text/data is generally appropriate, relevant and applied correctly to support the recommendation. • The response contains evidence of appropriate synthesis or evaluation that is mostly balanced.
9–10	<ul style="list-style-type: none"> • The response identifies and fully explains an appropriate policy. • The response uses relevant economic theory effectively to support the recommendation. • Relevant economic terms are used appropriately throughout the response. • The use of information from the text/data is appropriate, relevant and supports the analysis/evaluation effectively. • The response contains evidence of effective and balanced synthesis or evaluation.

2. (a) (i) Outline the relationship shown by the data in **Figure 2**. [2]

Level		Marks
0	The work does not meet a standard described by the descriptors below.	0
1	The written response is limited. A trade-off or inverse/negative.	1
2	The written response is accurate. When unemployment is high/increasing, the inflation rate is low/decreasing. OR there is a trade-off or inverse/negative relationship/correlation between unemployment and inflation.	2

(ii) On **Figure 2**, draw the long-run Phillips curve for Japan. [1]



A labelled vertical line at 3.0 may be awarded [1].
A line extending below the x axis is acceptable.
For [1] to be awarded the line must extend above the SRPC.

- (iii) Using **Table 2**, calculate the total cost of the basket of goods per week in JPY in 2023. Enter your result in **Table 3**. [2]

$$(2 \times 2304) + (3 \times 5500) + (1 \times 110)$$

Any valid working is sufficient for [1], including at least two correct elements.

$$= 21\,218 \quad [1]$$

An answer of 21 218, without any valid working is sufficient for [1].

For full marks to be awarded the response must provide valid working.

Table 3

	2020	2022	2023
Total cost of basket of goods per week (JPY)	21 168	21 002	21 218
Consumer price index (CPI)	100.00	99.22	100.24

An accurate figure which is in the text box but not inserted into the table may be rewarded.

- (iv) Using **Table 3**, calculate the CPI for Tokyo in 2023. Enter your result in **Table 3**. [1]

$$\frac{21\,218}{21\,168} \times 100$$

OFR applies from (iii).

Working not required.

Incorrect rounding should not be penalized.

$$= 100.24 \quad [1]$$

- (v) Using **Table 3**, calculate the rate of inflation for 2023. [2]

$$\frac{100.24 - 99.22}{99.22} \times 100$$

OFR applies from (iv).

Any valid working is sufficient for [1].

$$= 1.03\% \text{ or } 1.03 \quad [1]$$

An answer of 1.03 without any valid working is sufficient for [1].

N.B. *If the student has **evidently** retained 100.236 in their calculator, then the answer becomes 1.02% and may be awarded full marks.*

If expenditure figures from **Table 3** are used accurately, full marks may be awarded.

For full marks to be awarded the response must provide valid working.

(vi) Explain **two** limitations of using the CPI to estimate the inflation rate in Tokyo.

[4]

Level		Marks
0	The work does not meet a standard described by the descriptors below.	0
1	<i>The written response is limited.</i>	1–2
	<p><i>For stating one limitation, award a maximum of [1].</i> <i>For an accurate explanation of one limitation (refer to Level 2) OR for stating two limitations, award a maximum of [2].</i></p> <p><i>Stating limitations may include:</i></p> <ul style="list-style-type: none"> • Quality bias • Substitution bias • Outlet bias • New product bias • Different income or age groups or different regions of Tokyo. <p><i>N.B. See below for an outline of each bias.</i></p>	
2	<i>The written response is accurate.</i>	3–4
	<p><i>For an accurate explanation of one limitation AND stating one limitation, award a maximum of [3].</i> <i>For an accurate explanation of two limitations, award a maximum of [4].</i></p> <p><i>Explanations may include:</i></p> <ul style="list-style-type: none"> • Quality bias: even though the price of a good has risen since the base year, its quality has improved. • Substitution bias: consumers have substituted cheaper, similar items for a good whose price has risen. • Outlet bias: consumers have shifted their purchases to a cheaper retail outlet when prices have risen. • New product bias: Popular new (innovative) goods have appeared, but are not in the basket of goods because the base year was five years ago. • Different income or age groups or different regions of Tokyo will experience different rates of inflation, but the basket is assumed to be typical for every household/region in Tokyo. • <i>Any other valid limitation.</i> 	

N.B. The names of the biases need not be specified.

If a response contains more than two limitations, the best two should be assessed.

Now assume that the two banks decide to collude and come to an agreement that would maximize their joint profits.

- (vii) Using **Table 4**, identify a strategy for each bank that would maximize their combined total profits. **[1]**

Each bank should **raise the interest rate**
is sufficient for [1]
(because total profits would be JPY 6 million)

- (viii) Using profit figures from **Table 4**, show that Bank A has an incentive to cheat by not following the agreement. **[2]**

By **lowering** its interest rate
is sufficient for [1]

By **lowering** its interest rate **[1]** Bank A would earn **JPY 3.2 million** which is greater than **JPY 3 million [1]**

- (ix) Calculate the real interest rate. **[1]**

0.8 – 1.0 *working not required*

= **– 0.2 % or – 0.2**

*An answer of – 0.2 % **or** – 0.2 without working is sufficient for [1].*

- (x) Explain the money creation process by which a customer’s cash deposit of JPY 10 000 in Bank A eventually results in a much greater increase in Japan’s money supply. [4]

Level		Marks
0	<i>The work does not meet a standard described by the descriptors below.</i>	0
1	<i>The written response is limited.</i>	1–2
	A cash deposit (of JPY10 000) increases the reserves of bank A (by JPY10000), a portion of which (0.08%) must be retained [1] The remainder (JPY9920) can be lent to other customers [1]	
2	<i>The written response is accurate.</i>	3–4
	<p>A cash deposit (of JPY10 000) increases the reserves of bank A (by JPY10 000), a portion of which (0.08%) must be retained [1] The remainder (JPY9920) can be lent to other customer [1]</p> <p>These loans (via consumer spending/investment) will again be deposited in a bank [1] The process will continue/be repeated (as new deposits are converted into loans) leading to an (a greater) increase in the money supply [1]</p> <p>Alternative explanation: <i>A brief explanation of money creation with a calculation may be fully rewarded, as below [4]:</i></p> <p>The money supply is multiplied through the process of (excess) reserves from deposits being loaned out repeatedly. With a minimum reserve requirement of 0.8% (rrr = 0.008) the maximum increase in the money supply becomes:</p> $\frac{1}{0.008} \times 10\,000 - 10\,000 \quad \text{OR} \quad \frac{1}{0.008} \times 9920$ <p>= JPY 1 240 000 (or JPY 1 250 000)</p>	

- (b) Using the text/data provided and your knowledge of economics, recommend a policy that could be used in Japan to increase the rate of inflation to 2%. [10]

Possible policies may include (but are not restricted to):

- Expansionary monetary policy
- Expansionary fiscal policy
- Exchange rate policy
- Improving business and consumer confidence
- Any other valid policy.

If more than one policy is recommended, only the best policy should be rewarded, unless the policies are shown to be complementary or if they are compared/contrasted with the student’s one chosen policy.

Assessment Criteria

Recommend—present an advisable course of action with appropriate supporting evidence/reason in relation to a given situation, problem or issue.

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