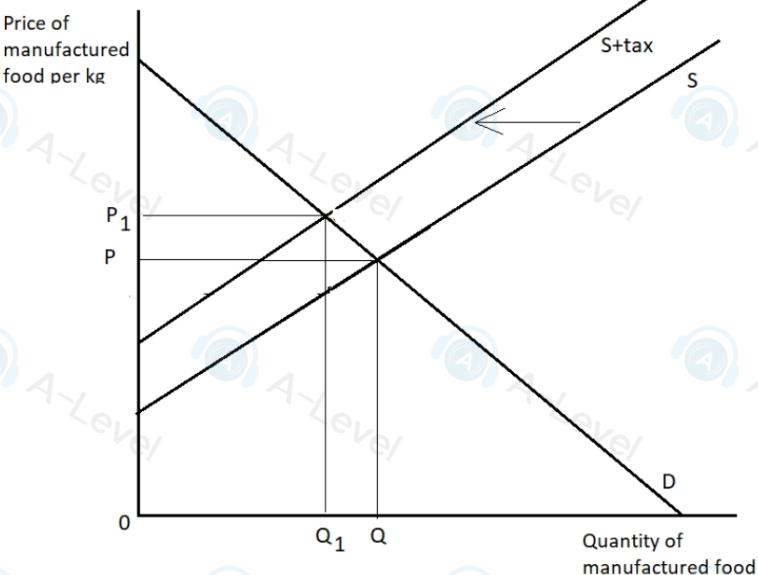


Question	Explain the impact of the introduction of this indirect tax on the market for food products containing salt added by manufacturers. Illustrate your answer with an appropriate diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of indirect tax e.g.: Indirect tax is an expenditure tax/consumption of goods and services (1)	
	Application 1 mark for the following diagram, showing a specific tax where the supply curve shifts to the left rather than pivots  Analysis 1 mark for showing the change in price - Price increases from P to P_1 (1) 1 mark for showing change in quantity - Quantity decreases from Q to Q_1 (1)	(4)
	1 mark for showing the government revenue/producer incidence/consumer incidence/change in consumer surplus/change in producer surplus	

Question	Evaluate the likely impact of imposing indirect taxes on aeroplane flights to reduce carbon emissions. Include at least one relevant diagram in your answer. Indicative content
14	Quantitative skills assessed QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Definition of indirect taxation- expenditure tax • Specific tax/Ad valorem tax- ○ Increase costs of production ○ Shifts/pivots supply to the left, S to S_1 ○ Increased equilibrium price charged to consumers P_e to P_1 ○ Decreases equilibrium quantity of flights for consumers, Q_e to Q_1 ○ Reduced quantity of aeroplane flights will result in a reduction in fuel use and in total global carbon emissions. Therefore there will be a reduction in external costs ○ Tax revenue received by the government $ABCP_1$ ○ Use tax revenue to fund research into technology to reduce emissions/ fund alternatives ○ Producer surplus decreases/ airline/ airport profits fall ○ Consumer surplus decreases FEP_e to FCP_1

Accept ad valorem diagrams to illustrate the effects of the indirect tax Accept externalities diagram to illustrate effects of indirect tax NB Award maximum of Level 3 if no diagram is included Level 4 requires at least two impacts Advantages may be presented as KAA and disadvantages as EV or vice versa		
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.

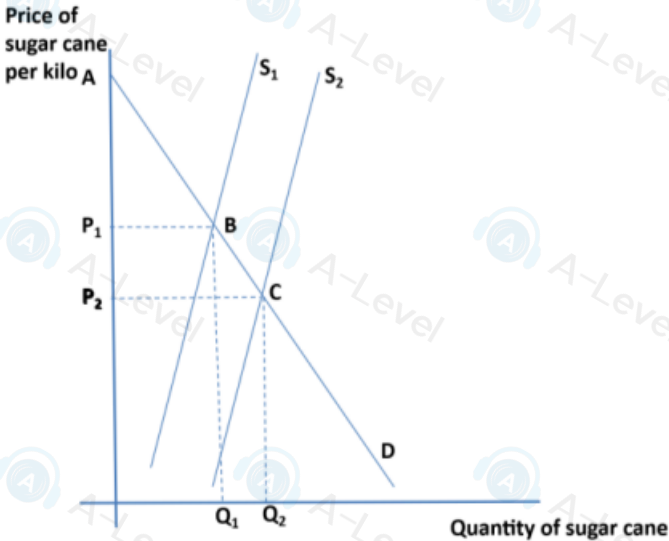
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
		Evaluation (8 marks) – indicative content • Depends on the size of the tax • Highly inelastic demand for flights means relatively small impact on quantity • Different effects on those travelling for business/leisure • Information failure- government may not know the ideal rate of taxation • Government failure- if it leads to net welfare loss • Any measures to reduce flights may be offset by increases in the number of people using cars or lorries. Therefore, there may be little reduction in external costs • Following the global health crisis, significant numbers have continued to work remotely-reduces the need to fly. Even without imposing indirect taxes the total number of aeroplane flights is likely to have fallen below 2019 levels. Therefore, global carbon emissions may already be below 2.5%
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

6	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A <i>B is not correct because this represents the total government spending</i> <i>C is not correct because this is the total revenue earned by firms from customers</i> <i>D is not correct because this is the total revenue earned by firms from both customers and the government subsidy</i>	(1)
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Question	Evaluate the microeconomic benefits of introducing a tax on plastic packaging. Illustrate your answer with a supply and demand diagram. Indicative content
14	Quantitative skills assessed QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content - Indirect tax- expenditure tax - Plastic packaging- causes environmental damage affecting wildlife, taking hundreds of years to decompose - Tax introduced on plastic packaging in Italy, Spain and UK - Plastic requires oil in its production, this results in more use of this non-renewable resource and is associated with environmental damage - Clearing up of plastics in the sea, on land, litter and in landfill uses resources - Ad valorem or specific tax diagrams should be rewarded - As the costs of production rise causing supply curve to shift left - The quantity consumed decreases from Q_e to Q_1. Less packaging will be used - The tax revenue earned by the government will be $FGHJ P_1$ - Producer incidence will be $GHJ P_e$ - Consumer incidence will be $FG P_e P_1$ - Manufacturers may adjust the contents of the packaging to increase the percentage that is recycled

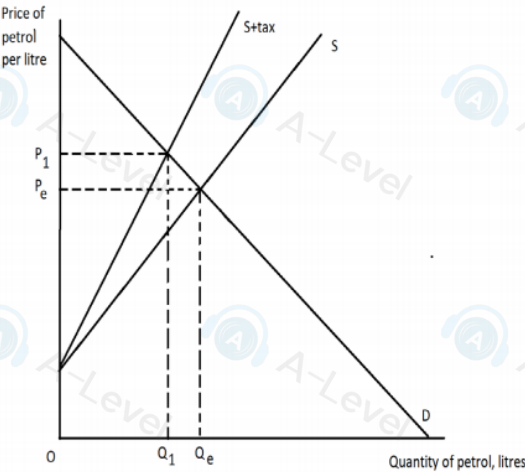
		Reduction in external costs Maximum of Level 3 with only 1 benefit Maximum of level 3 without a supply and demand diagram
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context, using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
		Evaluation (8 marks) – indicative content - Magnitude- depends on the level of the tax set- if too low then little impact on behaviour of manufacturers - Plastic packaging may have highly inelastic demand resulting in little impact on quantity demanded- this is because plastic may better preserve food - Packaging manufacturers produce external benefits in terms of employment opportunities which may be reduced - Difficult to measure the size/value of external costs - so difficult to decide the level of tax to charge - Indirect taxes might result in government failure e.g. if they are set too high, information gaps, unintended consequences Related to diagram - The price of packaging increases from P_e to P_1, so consumers may pay more for goods - Consumer surplus decreases from KIP_e to KFP_1 - Producer surplus decreases - As quantity of plastic packaging decreases, employment may fall
Level	Mark	Descriptor

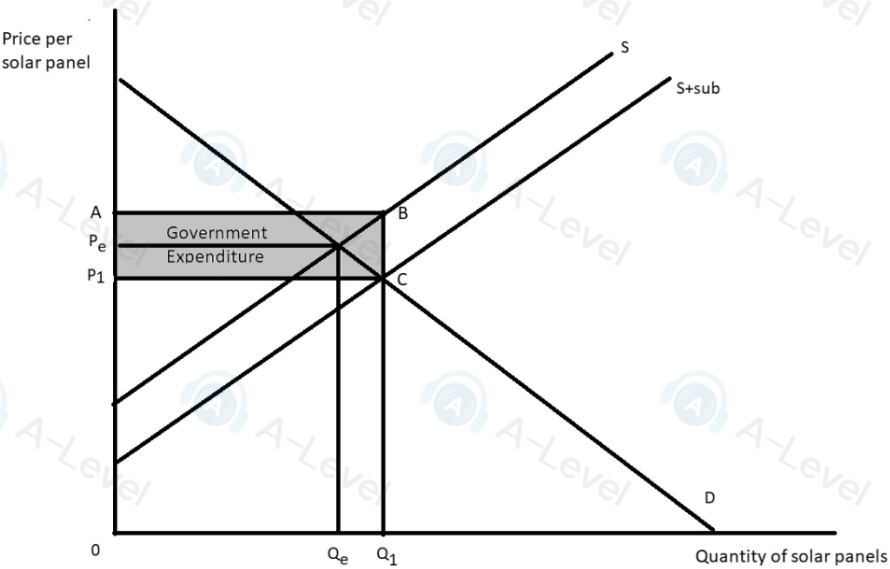
	0	No rewardable material.
Level 1	1-3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4-6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7-8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question	The Government of the Philippines provides subsidies to sugarcane farmers. Draw a diagram to illustrate the impact of this subsidy on the market for sugarcane. Identify the increase in consumer surplus on your diagram. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on the diagram - Original supply, demand and equilibrium price and quantity labelled (1) Application Up to 3 marks for the following information included on the diagram: - Correct shift of supply to the right (1) - New equilibrium price and quantity (1) - Area showing increase in consumer surplus P_1BCP_2 (1) OR correct identification of original and new consumer surplus ABP_1 to ACP_2 (1)  NB Also allow a pivot of the supply curve.	(4)

4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	B	(1)
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Question	With reference to Zimbabwe, explain the difference between a 'specific tax' and an 'ad valorem tax'.	Mark
Answer		
9	Knowledge 2, Application 2 QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of specific tax e.g.: - A fixed amount/set amount of tax added on a particular good/where there would be a parallel shift in supply (1K) Reward correctly drawn diagram clearly identified as specific 1 mark for definition of ad valorem tax - A percentage tax based on the price of the item/ where there would be a pivot of the supply curve (1K) Reward correctly drawn diagram clearly identified as ad valorem Application Up to 2 marks for applying to stem e.g.: - Tax on energy drinks of \$0.05 per litre/smartphones of \$50 per device are specific (1AP) - VAT (consumption tax) raised from 14.5% to 15% is ad valorem (1AP)	(4)

Question Number	Saudi Arabia introduced its first indirect tax on the sale of goods and services in 2018. The tax is charged at 5% of the price of goods and services. Draw a diagram to illustrate the impact of the introduction of the indirect tax on the equilibrium price and quantity of petrol in Saudi Arabia.	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for drawing original supply and demand (they do not have to include market equilibrium). OR 1 mark for definition of indirect tax e.g. tax on expenditure OR 1 mark for definition/identification of ad valorem Application Up to 3 marks for the following information included on diagram: 1 mark for drawing a supply curve to the left of original 1 mark for the new supply curve pivoting rather than parallel to old supply curve 1 mark for labelling the new higher price and lower quantity. 	(4)

Question	China aims to increase electricity generation from renewable resources. China's Government has introduced a subsidy for solar panel manufacturers. Draw a diagram to illustrate the impact of the introduction of a subsidy on the market for solar panels. Show the new equilibrium price and quantity and the area of government expenditure on the subsidy in your diagram. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge - Original supply and demand with equilibrium price and quantity (1) Application Up to 3 marks for the following information included on diagram: - Shifting supply to the right (1) - The new equilibrium quantity and price (1) - The area of government expenditure on the subsidy is P_1ABC (1)	
	 The supply curve may be pivoted or shifted	(4)

Question	In 2018 the Government of Uganda introduced an indirect tax on mobile internet usage. The aim was to raise tax revenue. Consumers had to pay 200 shillings per day to use services including Facebook, Twitter and Instagram. In the six months that followed the introduction of the tax, mobile internet usage decreased from 47.4% to 35% of the population. Evaluate the likely microeconomic effects of the introduction of this indirect tax.
	Indicative content
13	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Define indirect tax- expenditure tax • Specific tax as it is 200 shillings per day/supply shifts and does not pivot Possible impacts of indirect tax: • Increases costs to firms • Decreases supply/shifts left • Quantity consumed falls- significant fall in internet usage • Mobile internet usage decreased from 47.4% to 35% of the population • Price increases • Consumer surplus falls • Producer surplus falls/lower profits for Facebook/Twitter/Instagram • Consumer/producer incidence of the tax • Increases tax revenue for the government- 200 shillings per day per person • Tax revenue can be used to support/subsidise Ugandan companies • Reduce the willingness of firms to set up or operate in Uganda • Job losses likely within Facebook/Twitter/Instagram/mobile companies • Government can target the tax revenue to improve infrastructure • External benefits- may impact productivity positively • External costs- may reduce reward from advertising as fewer people will see advertising if consumption of mobile data falls
	Possible government failures: • Information gaps- where the government lacks perfect information and sets the wrong level of taxation • Lack of incentives- where the policy fails to create the incentives for firms and consumers to change their behaviour appropriately- tax may be too low • Unintended consequences- where a policy leads to an outcome that was not anticipated, this could include stopping people from accessing information/ communicating • Excessive administrative costs- where the costs to administer the tax is greater than any benefit of the government intervention

	When government failures is presented as microeconomic effects it should be rewarded as KAA but may alternatively be rewarded when offered as evaluation Positive effects may be offered as KAA and negative effects as Evaluation or vice versa Candidates should be rewarded for illustrating impacts using a diagram.	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context, using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

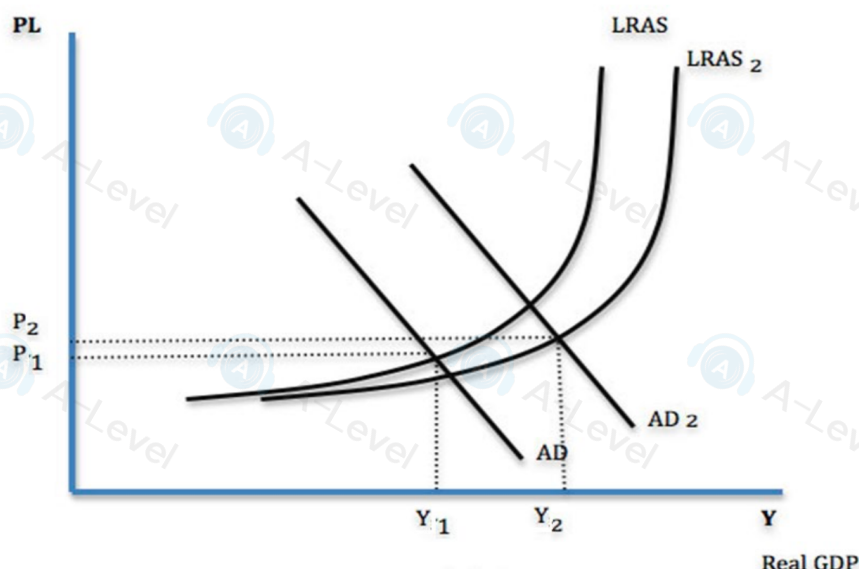
	Evaluation (8 marks) – indicative content Evaluation linked to stem • Measurement problem- difficult to measure the right level - 200 shillings may too high or low • Magnitude- sizeable tax so likely to have a large impact on reducing consumption- significant change • 200 shillings may not be a significant tax as a proportion of a persons income in Uganda • Might disadvantage certain groups with higher income groups finding it affordable but poorer groups struggling, some business people may have costs covered by employer
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		- Government revenue may be misused/misdirected - Impact on business costs reduces profits and tax paid to government - Impact on Facebook/Twitter/Instagram may not be significant if Ugandan market is relatively small - Impact depends on the elasticity of demand – if inelastic little change in mobile usage - No data provided on the minutes of mobile internet usage to see the true impact - Black market may emerge where people access mobile data illegally
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question	Evaluate the importance of productivity for the rate of economic growth in a country. Indicative content
13	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, Application and Analysis (12 marks) – indicative content - Productivity measures the efficiency of production. Usually measured as output per worker/output per hour worked - Economic growth is the increase in GDP of the economy - High productivity increases the productive potential of the economy, causing economic growth - High levels of productivity cause increased incentives for businesses to invest - An increase in productivity could lead to an increase in LRAS and to a rise in real output and to a fall in the price level A highly productive workforce may increase the demand for labour and real wages, increasing consumption and AD - Higher productivity is likely to increase company profits and increase tax revenue leading to more government spending and potential multiplier effect on GDP - High productivity may increase demand for exports improving the current account of the balance of payments

Students may take alternative perspective

Diagrammatic analysis may be rewarded.

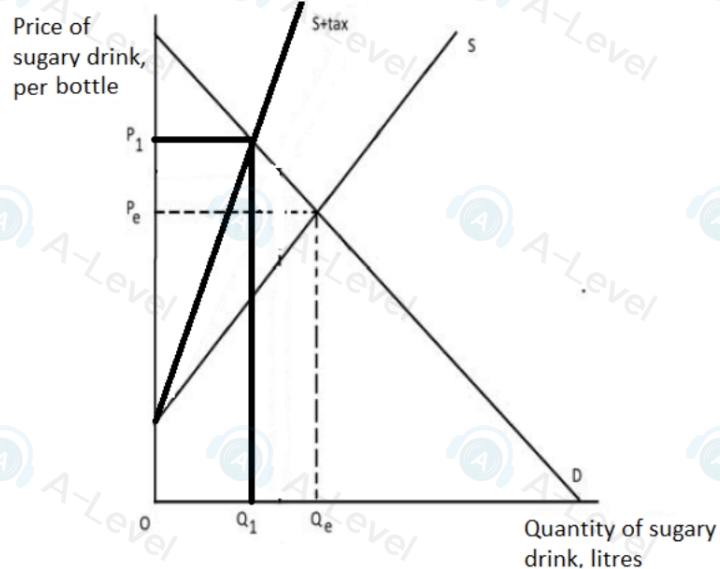


Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

Evaluation (8 marks) – indicative content		
- Investment by businesses is based upon confidence not productivity - Potential growth is influenced by productivity whereas actual growth occurs as a result of an increase in AD - Increased productivity may only occur in the long run - Magnitude of productivity/ depends on relative productivity - Other methods may be better in achieving economic growth - High consumption through demand-side policies - May conflict with sustainability objectives		
Level	Mark	Descriptor
	0	No rewardable material.

Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question Number	In October 2017 the United Arab Emirates (UAE) introduced an indirect tax on energy drinks. The tax is charged at 50% of the price of energy drinks. Draw a diagram to illustrate the impact of the introduction of the indirect tax on the equilibrium price and quantity of energy drinks in UAE. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge - Original supply and demand diagram with correct original equilibrium (1) Application Up to 3 marks for the following information included on diagram: - Shifting supply to the left (1) - Including the new equilibrium quantity and price (1) And for pivoting the supply curve (1)	

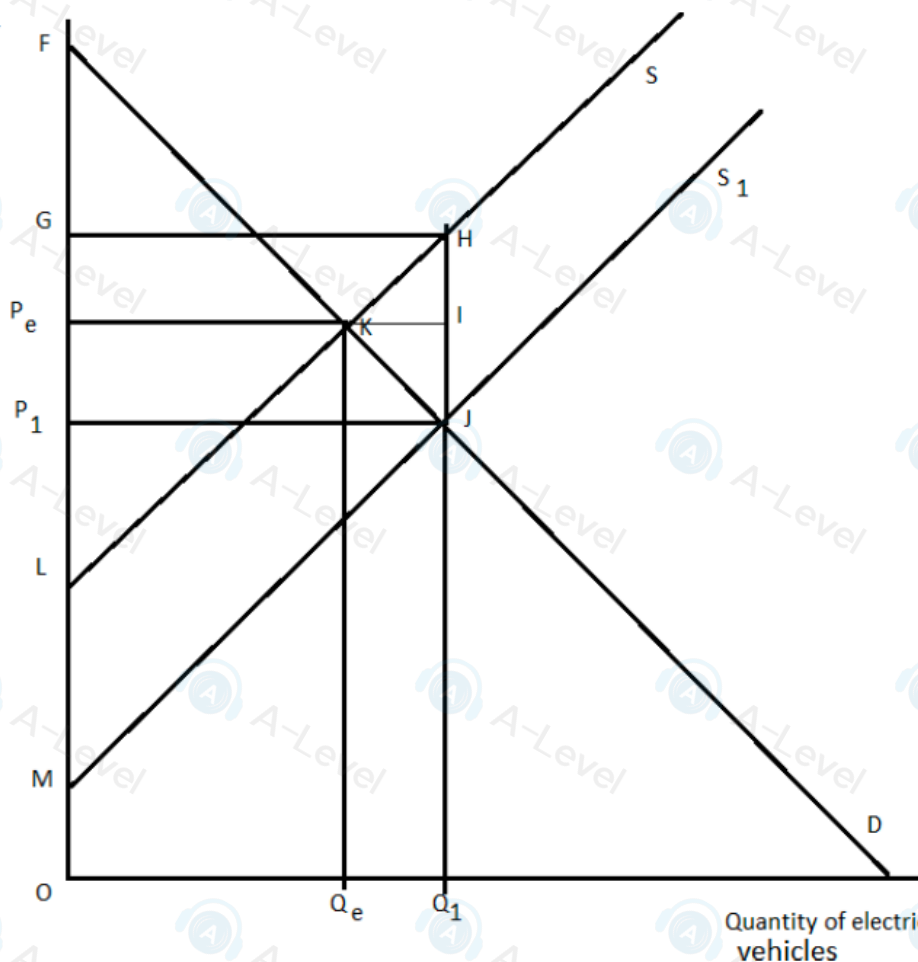


(4)

Question	Explain the impact of the introduction of this indirect tax on the market for paperback books sold online in Vietnam. Illustrate your answer with an appropriate diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of indirect tax e.g.: tax on expenditure/spending/goods and services (1) Application 1 mark for pivoting supply to the left (1) Analysis Up to 2 marks for explaining or showing diagrammatically an impact e.g.: - Price rises/ from P_e to P_1 (1) - Quantity falls/ from Q_e to Q_1 (1) - Government revenue is $BFGP_1$ (1) - Producer incidence is $HFGP_e$ (1) - Consumer incidence is BHP_eP_1 (1) - Producer surplus decreases (1) from CEP_e to BEP_1 (1) - Consumer surplus decreases (1) by BCP_eP_1 (1)/ ACP_e to ABP_1 (1) OR - Consumer surplus ACP_e to ABP_1 (1+1)	(4)

Question	In 2022 General Motors received a \$1 billion subsidy from the US Government to open two new electric vehicle factories in the USA. This was expected to generate 4 000 new jobs. Evaluate the microeconomic effects of subsidies paid to electric vehicle manufacturers. Include at least one appropriate diagram in your answer. Indicative content
14	Quantitative skills assessed QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Subsidy- cash grant paid to encourage production • Reduces electric vehicle manufacturers' costs of production • Generates 4 000 new jobs in the USA • The cost per job created is \$250 000

Price per
electric
vehicle



- Price of electric vehicles reduces P_e to P_1
- Quantity of electric vehicles increases Q_e to Q_1
- Subsidy costs the government $GHJP_1$
- Consumer subsidy P_eIJP_1
- Producer subsidy $GHIP_e$
- Consumer surplus increases FKP_e to FJP_1 / increases by P_eKJP_1
- Producer surplus increases
- With higher electric vehicle production- the diesel or petrol vehicle market may suffer/decline
- Employment in the diesel/petrol market may decrease
- General Motors experienced much lower costs, higher profit/producer surplus/invest more in USA
- More electric vehicles reduces environmental damage as compared with diesel/ petrol vehicles

NB Award maximum of Level 3 if no diagram included

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4-6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context.

		A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

Evaluation (8 marks) – indicative content

- Opportunity costs as the \$1 billion given to General Motors cannot be spent on improving healthcare for the poor or spending on education
- If subsidies are paid to other electric vehicle manufacturers then the costs would be substantially higher
- Electric vehicle manufacturers may become dependent on subsidies
- Electric vehicle manufacturers may become complacent and less focused on cutting costs
- Two new factories being built cause environmental damage
- Is it fair on other vehicle manufacturers outside the USA that do not receive subsidies?
- Magnitude of the subsidy is substantial- although General Motors still have to spend billions starting production at these factories
- Production may be capital intensive meaning few people are employed
- External benefits 4 000 additional employees spending in local businesses
- Other indirect employment from suppliers to General Motors so more than 4 000 new jobs are created
- Balance the job losses in petrol and diesel with the job creation at General Motors
- Electric vehicles still need electricity to be generated and if this is generated using fossil fuels then environmental costs are higher than first thought

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question Number	In 2016 the Nigerian Government removed the subsidy on petrol. Draw a diagram to illustrate the impact of the removal of the subsidy on the equilibrium price and quantity of petrol. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical and tabular forms. Knowledge 1 mark for drawing original supply and demand (they do not have to include market equilibrium). Application Up to 3 marks for the following information included on diagram: 1 mark for drawing a supply curve to the left of original 1 mark for labelling the new higher price 1 mark for labelling the new lower quantity.	(4)

6	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because this is the producer incidence C is not correct because this is the tax revenue earned by the government/includes both consumer and producer incidence D is not correct because this multiplies the Sol 0.60 by the wrong quantity (380 000)	(1)
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Question

The governments of many countries including Argentina, France and Singapore have implemented indirect taxes as a means of reducing greenhouse gas emissions.

Evaluate the advantages of indirect taxes as a means of reducing greenhouse gas emissions.

Illustrate your answer with a supply and demand diagram.

Indicative content**13**

Quantitative skills assessed

QS4: Construct and interpret a range of standard graphical forms

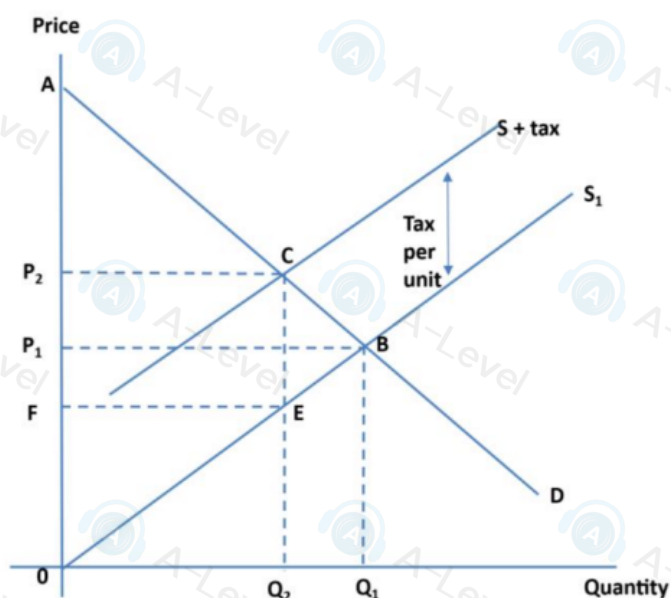
QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms.

Indicative content guidance

Answers must be credited by using the level descriptors (below) in line with the general marking guidance.

The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited.

Knowledge, application and analysis (12 marks) – indicative content



NB Accept a specific or an ad valorem tax.

- Indirect tax: aims to reduce external costs associated with production by internalising the negative externality
- The tax adds costs to polluting firms and creates an incentive for them to lower costs by reducing pollution so reducing external costs
- Producers may invest in greener forms of energy
- Quantity of fossil fuels consumed will fall from Q_1 to Q_2 so external costs fall and output moves closer to the social optimum level of output
- Low cost of administering the tax compared with e.g. legal requirements
- Government revenue earned from the tax = FP_2CE
- Tax revenues may be used to fund public services e.g. health and education
- Originally the price paid by consumers was P_1 but rises to P_2 and quantity falls from Q_1 to Q_2
- External costs reduced as a result of the tax
- Welfare loss from overconsumption will be reduced

N.B. Award a maximum of Level 3 if only one advantage is considered

N.B. Award a maximum of Level 3 if there is no appropriate diagram

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.

Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
Evaluation (8 marks) – indicative content • If the level of the tax is low, then the impact will be minimal • If demand is price inelastic then the tax will have limited effect on the amount of pollution produced • Tax increases the price of goods produced using carbon-generating energy from P_1 to P_2 • Consumer surplus falls from P_1AB to P_2AC. A change/reduction of P_1P_2CB • Lower consumer surplus results in lower real income for consumers, leading to lower living standards • Producer surplus falls from P_1B0 to FEO • Quantity of fossil fuels consumed will fall from Q_1 to Q_2 • Negative impact on profits and employment in carbon-producing industries • Reduced producer surplus for businesses using fossil fuels. Therefore, less profit to fund innovation/ investment • Government failure e.g. excessive administrative costs in measuring greenhouse gas emissions		

- Indirect tax: aims to reduce external costs associated with production by internalising the negative externality
- The tax adds costs to polluting firms and creates an incentive for them to lower costs by reducing pollution so reducing external costs
- Producers may invest in greener forms of energy
- Quantity of fossil fuels consumed will fall from Q_1 to Q_2 so external costs fall and output moves closer to the social optimum level of output
- Low cost of administering the tax compared with e.g. legal requirements
- Government revenue earned from the tax = FP_2CE
- Tax revenues may be used to fund public services e.g. health and education
- Originally the price paid by consumers was P_1 but rises to P_2 and quantity falls from Q_1 to Q_2
- External costs reduced as a result of the tax
- Welfare loss from overconsumption will be reduced

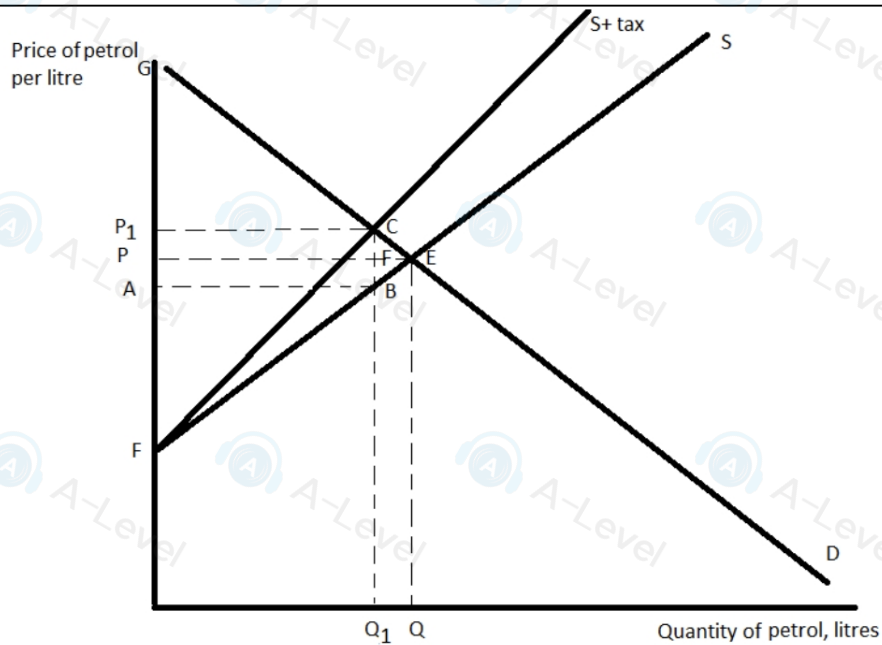
N.B. Award a maximum of Level 3 if only one advantage is considered

N.B. Award a maximum of Level 3 if there is no appropriate diagram

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Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4-6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7-8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question Number	Indicative content
13	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Indirect tax- expenditure tax • Ad valorem tax- defined • Specific tax- defined • Increases costs of production of firms selling petrol • Supply falls • Customers pay a higher price • The quantity consumed will be lower • Less external costs associated with petrol consumption/ production • People may buy in cheaper countries like Germany/ may lead to smuggling- Germany may benefit and the Netherlands lose out • Government failure if costs associated with intended consequences exceed benefits of reduced consumption • Incentive to substitute to hybrid/ electric/ hydrogen powered vehicles/ public transport/ bikes/ walking • Government revenue earned- can be used to fund improvements in public transport and roads • Increased demand for public transport • Impact on sectors reliant on road transport • Diagram may show ad valorem or specific tax



Impact on business

- Price received by the business is lower at A
- Quantity lower at Q_1
- Incidence of tax on producer per unit – AP / Producer incidence $ABFP$
- Reduced producer surplus

Impact on consumers

- Price paid higher at P_1
- Incidence of tax on consumer per unit - PP_1 / consumer incidence $CFPP_1$
- Reduced consumer surplus

Impact on government

- Government revenue $ABCP_1$
- Funds that can be used elsewhere- e.g. roads

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Evaluation (8 marks) – indicative content

- Magnitude- 68% of the price charged is indirect tax- significant impact
- Germany at just 59% may make it attractive to purchase in Germany but only for those close to border
- Changed in behaviour to alternative fuels may take a very long term
- Demand is likely to be highly inelastic so even if tax means higher price the quantity demanded will fall less than proportionately
- Tax evasion/ avoidance may reduce tax revenues
- Difficult to measure the correct indirect tax that should be charged
- Electric cars may still be significantly more expensive than petrol cars so there will be little impact on the demand for petrol
- Public transport is less convenient for the consumer leading to less consumer substituting
- Depends on how significant petrol taxes are as a proportion of total business costs e.g. significant issue for logistics/delivery companies
- Impact of the tax may affect those on different income levels differently

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