Assessment Schedule – 2023

Economics: Demonstrate understanding of the efficiency of market equilibrium (91399)

Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
*Demonstrating **understanding** of the efficiency of market equilibrium* involves:	*Demonstrating **in-depth understanding** of the efficiency of market equilibrium* involves:	*Demonstrating **comprehensive understanding** of the efficiency of market equilibrium* involves:
• providing an explanation of market equilibrium and / or changes in market equilibrium, and of efficiency in the market	• providing a detailed explanation of market equilibrium and / or changes in market equilibrium, and the impact of changes in markets on efficiency in the market	• analysing the impact of a change in a market on efficiency by comparing and / or contrasting the different impacts on participants (i.e. consumer, producer, and, where appropriate, government) in that market
• using an economic model(s) to illustrate concepts relating to the efficiency of market equilibrium.	• using an economic model(s) to illustrate complex concepts and / or support detailed explanations relating to the efficiency of market equilibrium.	• integrating an economic model(s) into explanations relating to the efficiency of market equilibrium that compare and / or contrast the different impacts.

Evidence

Q1	Sample evidence	Achievement	Achievement with Merit	Achievement with Excellence
(a)	Increase of $P_e bc P_2$ Increase of $P_e ba P_3$ $P_3 ac P_2$ abc	THREE correct labels.		
(b)(i)	A subsidy on public transport increases consumer surplus by $P_e bc P_2$. This is because consumers now pay a lower fare (price) of P_2,instead of P_e, and consume a higher quantity, Q_1, instead of Q_e, so they have more units from which to gain a surplus, and the difference between the price they actually pay and the price they are willing to pay increases. A subsidy on public transport also increases producer surplus. It increases by $P_e ba P_3$. This is because producers now receive a higher fare (price) of P_3, instead of P_e, and provide / sell a higher quantity, Q_1, instead of Q_e, so they have more units from which to gain a surplus, and the difference between the price they actually receive and the price they are willing to receive increases. While both CS and PS increase, the increase in CS is greater than the increase in PS, indicating that the benefit of the subsidy to consumers is more than to producers. This is shown by the fact that the decrease in the fare paid by the consumers is more than the increase in the fare received by the producers (i.e. $P_2P_e > P_3P_e$). This is because the demand for transport is generally inelastic, meaning the decrease in price results in a proportionally smaller increase in quantity demanded. A possible reason for the inelastic demand is that transport is a necessity. (Accept other valid reasons.) There is only so much that consumers need, thus a very large price fall would be required to incentivise an increase in quantity demanded, and even then, it is likely to be a small increase.	Explains: • CS increases due to the lower price OR the higher quantity • PS increases due to the higher price OR the higher quantity • the increase in CS is more than the increase in PS.	Explains in detail: • CS increases due to the lower price AND the higher quantity • PS increases due to the higher price AND the higher quantity • the increase in CS is more than the increase in PS due to ONE of: - the drop in price paid by consumers is greater than the rise in price received by producers - the demand for transport is inelastic OR the increase in QD is proportionally less than the decrease in price. OR Because transport is a necessity (accept other valid reasons).	Explains in detail: • CS increases due to the lower price AND the higher quantity. So more units from which to gain a surplus OR the difference between the price paid and the price consumers are willing to pay increases • PS increases due to the higher price AND the higher quantity. So, there are more units from which to gain a surplus OR the difference between the price received and the price producers are willing to accept increases • the increase in CS is more than the increase in PS due to TWO of: - the drop in price paid by consumers is greater than the rise in price received by producers - the demand for transport is inelastic AND the increase in QD is proportionally less than the decrease in price. AND A valid reason for inelastic demand explained.

(ii)	Providing a subsidy costs the Government P_3acP_2, which means that spending on another sector(s) of the economy may have to be reduced. However, committing to this subsidy would help the Government's goal of emissions reduction as more people using public transport (increase of Q_eQ_1 trips) means fewer cars (driving vs public transport substitutes idea) on the road, which means less pollution and less need for fossil fuel (cars and fuel complements idea).	Explains: • the subsidy will cost the Government but will help its emissions reduction plan.	Explains in detail: • the subsidy will cost the Government which means that spending in other sectors may have to be reduced OR the subsidy will help the Government's emissions reduction plan as more use of public transport = fewer cars on the road = less pollution / emission (substitute idea) OR fewer cars = less need for fuel (complement idea).	Explains in detail: • the subsidy will cost the Government, which means that spending in other sectors may have to be reduced AND the subsidy will help the Government's emissions reduction plan as more use of public transport = fewer cars on the road = less pollution / emission (substitute idea) OR fewer cars = less need for fuel (complement idea).
(iii)	A subsidy will lead to a loss of allocative efficiency as a deadweight loss of abc is created. This loss of efficiency occurs because the loss / cost in terms of the total cost of subsidy (P_3acP_2) is greater than the benefits to consumers and producers, i.e. the combined gain in producer surplus and consumer surplus (P_3abP_e plus P_ebcP_2) is more than offset by the larger area of P_3acP_2 therefore resulting in a deadweight loss of abc. This means that although both CS and PS have increased, the sum of consumer and producer surplus is no longer maximised.	Explains: • there will be a loss of allocative efficiency due to the DWL created OR as the sum of CS and PS is no longer maximised.	Explains in detail: • there will be a loss of allocative efficiency due to the DWL created as the combined gain in CS and PS is outweighed by the cost to the Government of funding the subsidy. (Must have offsetting idea.)	Explains in detail: • there will be a loss of allocative efficiency due to the DWL created as the combined gain in CS and PS is outweighed by the cost to the Government funding the subsidy (must have offsetting idea) AND the sum of consumer and producer surplus is no longer maximised.

N1	N2	A3	A4	M5	M6	E7	E8
Very little Achievement evidence.	Some Achievement evidence, partial explanations.	Most Achievement evidence.	Nearly all Achievement evidence.	Some Merit evidence.	Most Merit evidence.	Excellence evidence. One part may be weaker.	All points covered.
				Must refer to Graph.		Integrates relevant information from Graph One and resource material in context.	

N0 = No response; no relevant evidence.

<table>
<tr><th>Q2</th><th>Sample evidence</th><th>Achievement</th><th>Achievement with Merit</th><th>Achievement with Excellence</th></tr>
<tr><td>(a)(i)</td><td>See Appendix.</td><td>• TWO of:
- supply curve shifted left and labelled
- P1, Q1
- shortage correctly labelled.</td><td></td><td></td></tr>
<tr><td>(ii)</td><td>Restricting the number of retailers will decrease the quantity available for sale at each and every price, hence decreasing the supply of vaping products and shifting the supply curve to the left from S to S_1. At the original price of P_e, there will be a shortage of vaping products as the quantity demanded is greater than the quantity supplied. Consumers will bid the price up for fear of missing out on the limited quantity available. As the price increases, producers will increase their quantity supplied as supplying vaping products becomes more profitable. On the other hand, the higher price will discourage some consumers as vaping products become more unaffordable so their quantity demanded will fall. As the price continues to increase, QS will continue to rise while QD will continue to fall until QS = QD and equilibrium will be restored at a higher price of P_1, and a lower quantity of Q_1.</td><td>• THREE of:
- shortage created at original price
- consumers bid up the price
- QD decreases
- QS increases
- equilibrium restored where QS = QD.</td><td>• FOUR of:
- shortage created at original price as QD>QS
- consumers bid up the price so as not to miss out
- QD decreases
- QS increases
- explains equilibrium restored where QS = QD at a higher equilibrium price of P_1, and a lower equilibrium quantity of Q_1.</td><td>• ALL of:
- shortage created at original price as QD>QS
- consumers bid up the price so as not to miss out
- QD decreases
- QS increases
- explains equilibrium restored where QS = QD at a higher equilibrium price of P1, and a lower equilibrium quantity of Q_1.
AND
explanation is in context of the market for vaping products.</td></tr>
<tr><td>(b)(i)
(ii)</td><td>See Appendix.
<table>
<tr><th></th><th>Before indirect tax (labels)</th><th>After indirect tax (labels)</th></tr>
<tr><td>Consumer surplus</td><td>1, 2, 3, 4</td><td>1</td></tr>
<tr><td>Producer surplus</td><td>5, 6, 7, 8</td><td>8</td></tr>
<tr><td>Total tax revenue</td><td></td><td>2, 3, 5, 6</td></tr>
<tr><td>Deadweight loss</td><td></td><td>4, 7</td></tr>
</table></td><td>• P_2 and Q_2 labelled.
AND
• FOUR of SIX table labels correct.</td><td>• SIX labels correct.</td><td></td></tr>
</table>

(c)	Restricting the number of retailers is allocatively efficient as the market is operating at equilibrium where demand = supply, and the sum of consumer surplus and producer surplus is maximised, and there is no deadweight loss. With the indirect tax, the market is allocatively inefficient because there is a deadweight loss (area 4, 7) as the combined loss of consumer surplus and producer surplus (2, 3, 4, 5, 6, 7) outweighs the gain in tax revenue (2, 3, 5, 6) by the Government, which means the sum of consumer surplus and producer surplus is not maximised.	Explains: • restricting number of retailers is allocatively efficient due to ONE of: - D = S - no DWL - sum of CS and PS is maximised • indirect tax is not allocatively efficient due to ONE of: - there is DWL - sum of CS and PS is not maximised.	Explains in detail: • restricting number of retailers is allocatively efficient due to TWO of: - D = S - no DWL - sum of CS and PS is maximised OR Indirect tax is not allocatively efficient due to TWO of: - there is DWL - sum of CS and PS is not maximised. Refers to graphs or table or context.	Explains in detail: • restricting number of retailers is allocatively efficient due to TWO of: - D = S - no DWL - sum of CS and PS is maximised AND Indirect tax is not allocatively efficient due to TWO of: - there is DWL - sum of CS and PS is not maximised. Refers to graphs and table and context of vaping products.
	Restricting the number of retailers would help the Government's goal of discouraging consumption of vaping products as consumption decreases from Q_e to Q_1. This intervention does not generate any revenue for the Government – in fact it will incur more cost for policing or monitoring whether the restriction is being adhered to. Indirect tax would also reduce the quantity demanded of vaping products, from Q_e to Q_2. Additionally, it generates revenue for the Government, which is why it is more advantageous than the first intervention. The tax revenue may be used to fund education programmes or advertising campaigns to raise awareness of the potential harm caused by vaping. This could reduce demand, shifting the demand curve to the left, resulting in consumption decreasing more than Q_eQ_2 in Graph Three, or decreasing more than Q_eQ_1 in Graph Two if implemented in conjunction with restricting the number of retailers.	Explains: • both interventions help discourage vaping • indirect tax generates revenue OR the other intervention does not.	Explains in detail: • both interventions help discourage vaping, but indirect tax generates revenue OR the other intervention does not OR it incurs policing cost.	Explains in detail: • both interventions help discourage vaping, but indirect tax generates revenue, which may be used to fund programmes or campaigns to reduce demand AND the other intervention does not AND that it incurs policing cost.

N1	N2	A3	A4	M5	M6	E7	E8
Very little Achievement evidence.	Some Achievement evidence, partial explanations.	Most Achievement evidence.	Nearly all Achievement evidence.	Some Merit evidence.	Most Merit evidence.	Excellence evidence. One part may be weaker.	All points covered.
				Must refer to Graph Two or Graph Three or the table.		Integrates relevant information from Graph Two or Graph Three AND the table. Refers to context of vaping products.	

N0 = No response; no relevant evidence.

<table>
<tr><th>Q3</th><th>Sample evidence</th><th>Achievement</th><th>Achievement with Merit</th><th>Achievement with Excellence</th></tr>
<tr><td>(a)(i)</td><td>See appendix.</td><td>• TWO of:
- new CS shaded
- new PS shaded
- DWL shaded.</td><td></td><td></td></tr>
<tr><td>(ii)</td><td>See appendix.</td><td>• TWO of:
- new CS shaded
- new PS shaded
- DWL shaded.</td><td></td><td></td></tr>
<tr><td>(iii)</td><td><table><tr><th></th><th>Graph Four Quota ($ million)</th><th>Graph Five Minimum price ($ million)</th></tr><tr><td>Original consumer surplus</td><td>6</td><td>6</td></tr><tr><td>New consumer surplus</td><td>1.5</td><td>1.5</td></tr><tr><td>Original producer surplus</td><td>9</td><td>9</td></tr><tr><td>New producer surplus</td><td>9.75</td><td>9.75</td></tr><tr><td>Deadweight loss</td><td>3.75</td><td>3.75</td></tr></table></td><td>• FIVE correct.</td><td>• ALL correct.</td><td></td></tr>
<tr><td>(b)(i)</td><td>The quota and minimum price both impact consumers the same way, by decreasing consumer surplus from $6m to $1.5m – a decrease of $4.5m. This is because consumers are paying a higher price of $4.50 or P_q or P_{min} (rather than $3.50 or P_e), so the difference between the price they are willing to pay and the price they are actually paying decreases. Also, they are consuming a smaller quantity of 3 million cans or Q_q or Q_{min}, rather than 6 million cans or Q_e, giving them fewer units from which to generate a surplus.</td><td>Explains:
• CS decreases because of the higher price paid OR the lower quantity consumed for quota.
• CS decreases because of the higher price paid OR the lower quantity consumed for minimum price.</td><td>Explains in detail:
• CS decreases because of the higher price paid AND the lower quantity consumed for quota.
• CS decreases because of the higher price paid AND the lower quantity consumed for minimum price.</td><td>Explains in detail:
• both interventions have the same impact on consumer surplus AND CS decreases because of the higher price paid AND the lower quantity consumed, so fewer units from which to gain a surplus, OR the difference between the price paid and the price consumers are willing to pay has decreased.</td></tr>
</table>

(ii)	The quota and minimum price also both impact producers the same way, but they cause an increase in producer surplus from \$9m to \$9.75m, an increase of \$0.75m. Producer surplus increases because they are receiving a higher price of \$4.50 or P_q or P_{min}, (rather than \$3.50 or P_e) so the difference between the price they are willing to supply at and the price they actually receive increases. Although they are selling a lower quantity of 3 million cans or Q_q or Q_{min}, rather than 6 million cans or Q_e, giving them fewer units from which to generate a surplus, the increase in surplus due to the increase in price of \$1 per can outweighs the decrease in surplus due to the lower quantity sold. This results in an overall increase in producer surplus.	Explains: • PS increases because of the higher price received.	Explains in detail: • PS increases because the surplus gained from the higher price received outweighs the loss due to lower quantity sold. • both interventions have the same impact on consumer surplus AND both interventions have the same impact on producer surplus.	Explains in detail: • both interventions have the same impact on producer surplus AND PS increases because the surplus gained from the higher price received so the difference between the price received and the price producers are willing to receive has increased. This gain outweighs the loss due to lower quantity sold so fewer units from which to gain a surplus (must have offsetting idea).
(iii)	There is a loss of allocative efficiency, represented by the deadweight loss of \$3.75m; again, this is the same for both the quota and minimum price. The loss of allocative efficiency is because the loss of consumer surplus of \$4.5m is not fully offset by the gain in producer surplus of \$0.75m, the difference being the deadweight loss of \$3.75m. So, the sum of consumer and producer surpluses is not maximised.	Explains: • there will be a loss of allocative efficiency due to the DWL created OR as the sum of CS and PS is not maximised.	Explains in detail: • there is a loss in allocative efficiency as there is a DWL created due to the loss in CS being greater than the gain in PS OR the sum of CS and PS is not maximised.	Explains in detail: • there is a loss in allocative efficiency as there is a DWL created due to the loss in CS being greater than the gain in PS AND the sum of CS and PS is not maximised.

N1	N2	A3	A4	M5	M6	E7	E8
Very little Achievement evidence.	Some Achievement evidence, partial explanations.	Most Achievement evidence.	Nearly all Achievement evidence.	Some Merit evidence.	Most Merit evidence.	Excellence evidence. One part may be weaker.	All points covered.
				Must refer to Graph Four or Graph Five or the table.		Integrates relevant information from Graph Four and Graph Five AND the table. Refers to context of energy drinks.	

N0 = No response; no relevant evidence.

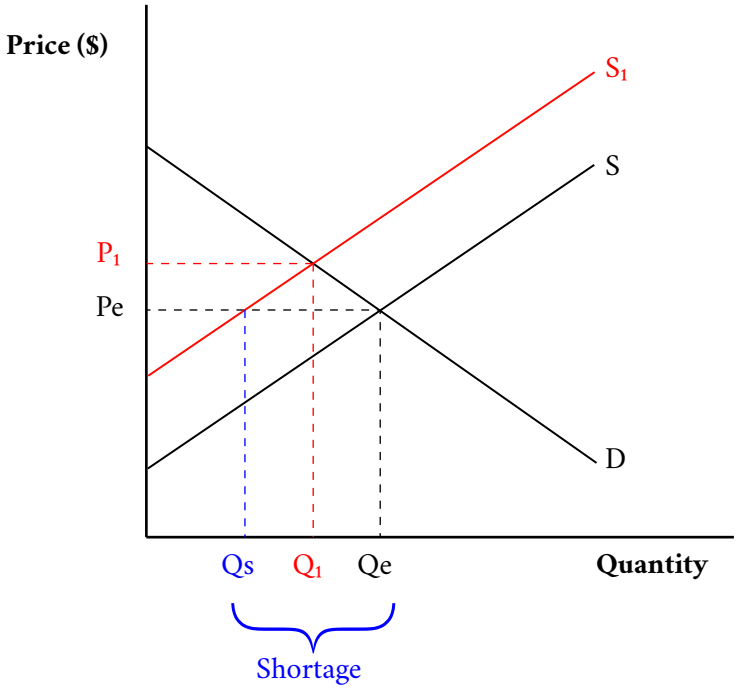
Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0 – 7	8 – 13	14 – 18	19 – 24

Appendix

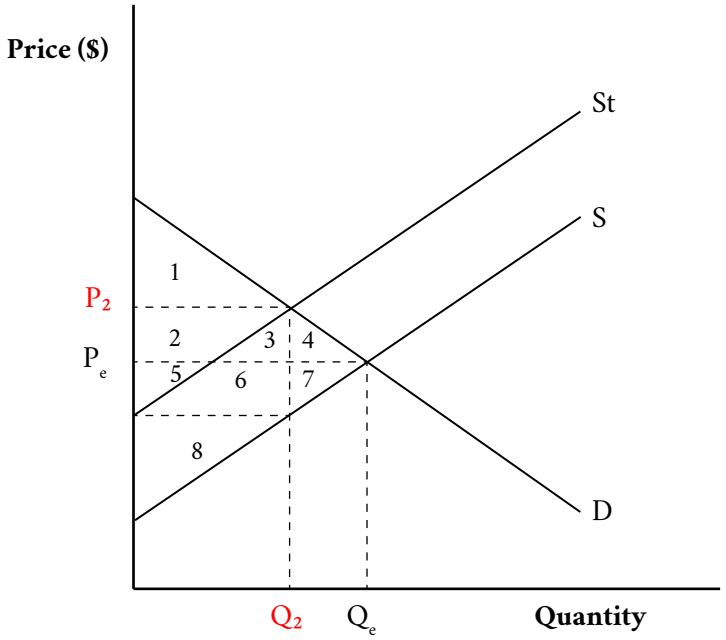
Question Two (a)(i)

Graph Two: The market for vaping products – impact of restricting the number of retailers



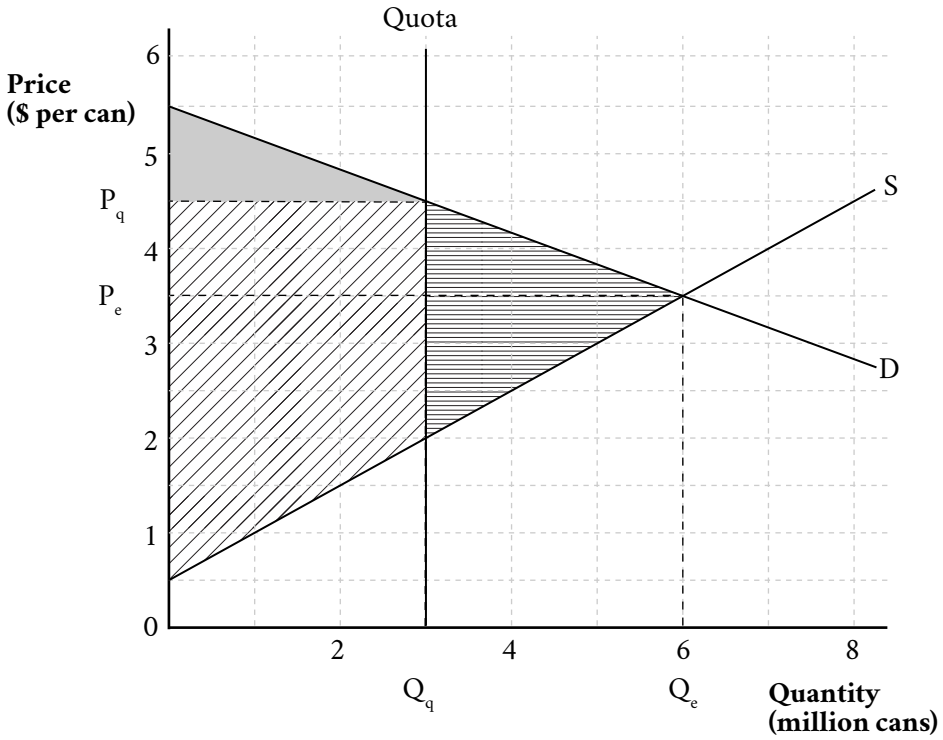
Question Two (b)(i)

Graph Three: The market for vaping products – impact of an indirect tax



Question Three (a)(i)

Graph Four: The market for energy drinks per year – impact of a quota



Question Three (a)(ii)

Graph Five: The market for energy drinks per year – impact of a minimum price control