Assessment Schedule – 2018

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

Assessment Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding involves: • providing an **explanation** of: - market equilibrium and / or changes in market equilibrium - efficiency in the market • using an economic model(s) to illustrate concepts relating to the efficiency of market equilibrium. *Explanation* involves giving a **reason** for the answer.	*Demonstrate in-depth understanding* involves: • providing a **detailed explanation** of: - market equilibrium and / or changes in market equilibrium - impact of changes in markets on efficiency in the market • using an economic model(s) to illustrate complex concepts and / or support detailed explanations relating to the efficiency of market equilibrium. *Detailed explanation* involves giving an **explanation with breadth** (more than one reason for the answer) **and / or depth** (e.g. using flow-on effects to link the main cause to the main result).	*Demonstrate comprehensive understanding* involves: • **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 • integrating an economic model(s) into explanations relating to the efficiency of market equilibrium that compare and / or contrast the different impacts.

Cut Scores

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

<table>
<tr><th>Question</th><th colspan="3">Sample answers / Evidence</th></tr>
<tr><td>ONE
(a)</td><td colspan="3">See Appendix One.
Evidence to support explanations in (c) only, but may be used for N1 or N2.</td></tr>
<tr><td>(b)</td><td colspan="3"><table>
<tr><td></td><td>$ value</td></tr>
<tr><td>Change in CS (specify increase or decrease)</td><td>$187.5 million increase</td></tr>
<tr><td>Change in PS (specify increase or decrease)</td><td>$187.5 million increase</td></tr>
<tr><td>Total cost of subsidy</td><td>$450 million</td></tr>
<tr><td>DWL</td><td>$75 million</td></tr>
</table></td></tr>
<tr><td>(c)</td><td colspan="3">Consumer surplus increases by $187.5 million because the price consumers pay decreases from $67 500 ($P_e$) to $62 500 ($P_1$), increasing the difference between the price consumers are willing to pay and the price they actually pay, thereby increasing CS. Also, consumers increase their quantity demanded of electric vehicles from 30 000 (Q_e) to 45 000 (Q_1) units, increasing the units from which they can gain surplus, thereby increasing CS.
Producer surplus also increases by $187.5 million because electric vehicle suppliers / importers / sellers receive a higher price than before (i.e. $72 500), increasing the difference between the price they are willing to accept per vehicle and the price they actually receive, thereby increasing PS. Their quantity supplied of electric vehicles increases from 30 000 (Q_e) to 45 000 (Q_1) units, increasing the units from which they can gain surplus, thereby increasing their PS.
The total cost of the subsidy to the government is $450 million. This amount used to reduce the price of electric vehicles means it cannot be spent in other areas of the economy or on other means of reducing carbon emissions such as replanting more trees.
There is a loss of allocative efficiency because the combined gain in CS and PS is not enough to offset the loss of welfare in terms of the cost of the subsidy to the government, so there is a net welfare loss to the value of $75 million, which is the deadweight loss. This means that the sum of CS and PS is not maximised.</td></tr>
<tr><th colspan="2">Achievement</th><th>Achievement with Merit</th><th>Achievement with Excellence</th></tr>
<tr><td colspan="2">(b) TWO of the calculations correct.

(c) Explains:
• CS increases as consumers pay a lower price OR consume a greater quantity
• PS increases as producers receive a higher price OR are now selling more
• Government spending to subsidise</td><td>(c) Explains in detail:
• CS increases as consumers pay a lower price AND increase their quantity demanded of electric vehicles OR definition of CS
• PS increases as producers receive a higher price AND are now selling more OR definition of PS</td><td>(c) Explains in detail:
• CS increases as consumers pay a lower price AND increase their quantity demanded of electric vehicles OR links the definition of CS, i.e. meaning that the difference between the price consumers are willing to pay and the price they actually pay, therefore increasing CS and</td></tr>
</table>

• There is a loss of allocative efficiency because there is a net welfare loss OR there is deadweight loss OR the sum of CS and PS is not maximised.	• Government spends tax dollars. Identifies correct amount • There is a loss of allocative efficiency as a result of subsidy because the combined gain in CS and PS is not enough to offset the cost to the government, so there is a net welfare loss represented by the deadweight loss of $75 million. This means that the sum of CS and PS is not maximised. Refers to Graph One, two or more correct figures from Table One in the explanation, and refers to electric vehicles context.	more units consumed, meaning more units from which to gain surplus • PS increases as producers receive a higher price AND now selling more units of electric vehicles OR links the definition of PS, i.e. meaning that the difference between the price they are willing to accept for their vehicles and the price they actually receive, therefore increasing PS and more vehicles sold, meaning more units from which to gain surplus • Government spends tax dollars (which might otherwise be spent in other areas of the economy or other equally effective ways of reducing emissions – opportunity cost idea) • There is a loss of allocative efficiency as a result of subsidy because the combined gain in CS and PS is not enough to offset the cost to the government, so there is a net welfare loss represented by the deadweight loss of $75 million. This means that the sum of CS and PS is not maximised. Refers to Graph One and Table One, all correct figures in the explanation, and refers to electric vehicles context.

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. Must refer to Graph One. Some figures correct.	Most Merit evidence. Must refer to Graph One. Some figures correct.	Excellence evidence. One part may be weaker AND integrates relevant information from Graph One and Table One into the explanation. All figures correct.	All points covered AND integrates relevant information from Graph One and Table One into the explanation. All figures correct.

N0 No response; no relevant evidence.

Question	Sample answers / Evidence
TWO (a)	See **Appendix Two**.
(b)	Consumer surplus decreases because New Zealand consumers now pay a higher price of $\mathbf{P_{w+tariff}}$ after the imposition of the tariff, compared to $\mathbf{P_w}$, and they consume fewer units i.e. $\mathbf{Q_3}$ units instead of $\mathbf{Q_4}$ units before. This means that the difference between what consumers are willing to pay and what they actually pay decreases and that they consume fewer units from which they can gain surplus, decreasing their consumer surplus by the area **ABCE** (or 3+4+5+6). As a result of the tariff, New Zealand producers (of similar goods) gain more producer surplus by the area shaded in lines (or 3) because of increased sale from $\mathbf{Q_1}$ to $\mathbf{Q_2}$, and producers receiving a higher price of $\mathbf{P_{w+tariff}}$ compared to $\mathbf{P_w}$ before the tariff was imposed, meaning the difference between the price producers are willing to accept and what they actually receive increases, increasing their producer surplus. Selling more units also gives them more units from which they can gain surplus. Allocative efficiency decreases as the combined gain in PS and tariff revenue gained by the government (3+5) is not enough to offset the loss of CS of area ABCE (or 3+4+5+6), resulting in a loss of welfare of area 4+6. Deadweight loss of 4+6 means that the sum of CS and PS is no longer maximised.
(c)	The decrease in CS is larger when the imported good is price elastic, as shown by the larger area labelled **ABCE** on Graph Two rather than **ABCE** on Graph Three (i.e. combined area of 3+4+5+6 is larger than 10+11+12+13). This is because an equal increase in price causes a proportionally greater decrease in quantity demanded when the imported good is price elastic (i.e. $\mathbf{Q_3Q_4}$ is greater than $\mathbf{Q_7Q_8}$). Although the increase in price is the same, i.e. it has gone up by the same amount of the tariff, the relatively bigger decrease in QD in Graph Two when the imported good is price elastic, means that consumers lose more units from which they could gain surplus, resulting in a larger decrease in CS. The decrease in allocative efficiency is greater when the imported good is price elastic, as the loss in welfare represented by the deadweight loss is larger in Graph Two compared to Graph Three (i.e. combined area of 4+6 is larger than 11+13). Again, this is due to the larger than proportional decrease in QD when the imported good is price elastic compared to when it is inelastic.

Achievement	Achievement with Merit	Achievement with Excellence
(a) TWO (of three) correct shadings or labels from EITHER Graph Two OR Three: - Change in CS - Change in PS - Tariff revenue Areas or points acceptable.		
(b) Explains: • CS decreases because consumers pay a higher price OR consume less OR definition • PS increases because producers receive a higher price OR sell more	(b) Explains in detail: • CS decreases because consumers pay a higher price AND consume less OR definition • PS increases because producers receive a higher price AND sell more	(b) Explains in detail: • CS decreases because consumers pay a higher price AND consume less (fewer units to gain surplus from AND / OR difference between what they are willing to pay and actually pay)

• allocative efficiency decreases as the combined increase in PS and government tariff revenue is less than loss in CS • OR there is now DWL • OR the sum of CS+PS is no longer maximised.	• allocative efficiency decreases as the loss in CS is not transferred, AND DWL is created OR the sum of CS+PS is no longer maximised. (c) Explains in detail that: • CS decreases more when imported good is price elastic OR CS decreases less when good is price inelastic • allocative efficiency decreases more when imported good is price elastic OR AE decreases less when price inelastic • the reason: an equal increase in price leads to a proportionally larger decrease in QD when imported good is price elastic, resulting in a larger decrease in CS. OR • The larger than proportional decrease in QD when imported good is price elastic means that a larger area of deadweight loss is also being created. Refers to Graph Two AND Three, and has some correct shadings or label in the explanation.	• PS increases because producers receive a higher price AND sell more (more units to gain surplus from AND / OR difference between what willing to receive and actually receive) • allocative efficiency decreases because the loss in CS is greater than the combined gain in PS and tariff revenue received by government, resulting in DWL OR the sum of CS+PS is not maximised. (c) Explains in detail that: • CS decreases more when imported good is price elastic • allocative efficiency decreases more when imported good is price elastic • the reason: an equal increase in price leads to a proportionally larger decrease in QD when imported good is price elastic, resulting in a larger decrease in CS OR the larger decrease in QD means it reduces more units from which consumers can gain surplus • The larger than proportional decrease in QD when the imported good is elastic means that a larger area of deadweight loss is also being created because of the bigger loss of CS. Refers to Graph Two AND Three, and correct shadings and label in the explanation.

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. Must refer to Graph Two and Three.	Most Merit evidence. Must refer to Graph Two and Three.	Excellence evidence. One part may be weaker AND integrates relevant information from Graphs Two and Three, and shadings or labels used in explanation mostly correct.	All points covered AND integrates relevant information from Graphs Two and Three, and shadings and labels used in explanation all correct.

N0 = No response; no relevant evidence.

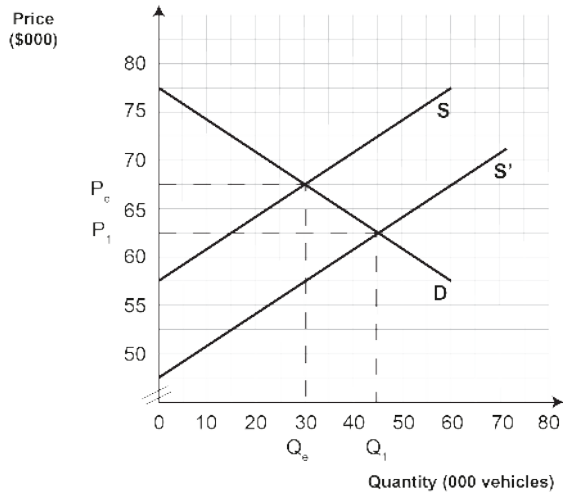
<table>
<tr><th>Question</th><th>Sample answers / Evidence</th></tr>
<tr><td>THREE
(a)(i)</td><td>See Appendix Three.</td></tr>
<tr><td>(a)(ii)</td><td>As a result of increased supply of wool, the amount supplied of wool increases at each and every price, shifting the supply curve to the right from S to S_1.
At the original price of P_e, there will now be a surplus of wool as QS>QD. Farmers (wool producers) will reduce their price to get rid of their unsold stock. As the price decreases, quantity supplied will decrease as wool farmers / producers respond to the relative low profitability of wool. Quantity demanded will increase as wool becomes more affordable. QS will continue to fall while QD will continue to rise until QD=QS and equilibrium is restored at the new lower price of wool P_1 and new higher quantity of Q_1.</td></tr>
<tr><td>(b)(i)</td><td><table>
<tr><td>Consumer surplus before minimum price</td><td>AP_eC</td></tr>
<tr><td>Consumer surplus after minimum price</td><td>$AP_{min}B$</td></tr>
<tr><td>Producer surplus before minimum price</td><td>P_eCG</td></tr>
<tr><td>Producer surplus after minimum price</td><td>$P_{min}BFG$</td></tr>
<tr><td>Deadweight loss</td><td>BCF</td></tr>
</table></td></tr>
<tr><td>(b)(ii)</td><td>The amount of wool demanded by wool buyers will decrease from Q_e to Q_1 as the price of wool increases to P_{min} as a result of the minimum price making wool less affordable (or reducing the profitability of buyers of wool such as carpet makers as their input cost increases). CS will decrease from AP_eC to $AP_{min}B$ because wool buyers will pay a higher price of P_{min} instead of P_e, decreasing the difference between what they are willing to pay and what they actually pay. Lower quantity demanded means there are fewer units from which wool buyers can gain CS. CS will decrease by $P_{min}BCP_e$.
PS will increase from P_eCG to $P_{min}BFG$. This is despite some loss of PS due to the lower quantity sold, i.e. Q_1 instead of Q_e. The increase in PS due to the higher price resulting from the minimum price is more than sufficient to offset the loss of PS due to lower sales so overall PS will increase. The wool farmers will receive a higher price for their wool (P_{min} instead of P_e) and this increases the difference between what they are willing to receive for their wool and what they actually receive, increasing their PS.
Overall, there will be a loss of allocative efficiency because the loss in CS of $P_{min}BCP_e$ outweighs the gain in PS, which results in a net welfare loss represented by the deadweight loss of BCF. This is because the sum of CS and PS is no longer maximised following the minimum price control.</td></tr>
</table>

Achievement	Achievement with Merit	Achievement with Excellence
(a)(i) BOTH of: – S curve shifted to the right and labelled – Decreased price and increased quantity, labelled. (a)(ii) Explains that the increase in supply will create a surplus which will result in price falling, including TWO of: – surplus as $Q_s>Q_d$ at $\mathbf{P_e}$ – Q_s decreases – Q_d increases – $Q_s=Q_d$ – equilibrium restored (at $\mathbf{P_1}$, $\mathbf{Q_1}$). (b)(i) 3/5 labels correct (b)(ii) Explains: • CS will decrease because of higher price OR lower quantity • PS will increase because of higher price • There is a loss of allocative efficiency because there is a net welfare loss OR deadweight loss OR the sum of CS and PS is no longer maximised.	(a)(ii) Explains in detail that the increase in supply will create a surplus which will result in price falling including FOUR of: – surplus as $Q_s>Q_d$ at P_e – Q_s decreases – Q_d increases – $Q_s=Q_d$ – equilibrium restored (at $\mathbf{P_1}$, $\mathbf{Q_1}$). Refers to Graph Four in the explanation. (b)(ii) Explains in detail: • QD of wool will decrease from $\mathbf{Q_e}$ to $\mathbf{Q_1}$ as price increases from $\mathbf{P_e}$ to $\mathbf{P_{min}}$, decreasing CS • PS will increase because despite some loss of PS due to lower quantity sold, the gain from increased price outweighs the loss because of lower sales • Overall, the loss in CS is greater than the gain in PS, resulting in a net welfare loss represented by the deadweight loss of BCF. This is because the sum of CS and PS is no longer maximised following the minimum price control. Refers to Graph Five or Table Two in the explanation.	(b)(ii) Explains in detail: • QD of wool will decrease from $\mathbf{Q_e}$ to $\mathbf{Q_1}$ as price increases from $\mathbf{P_e}$ to $\mathbf{P_{min}}$ decreasing CS • The higher price means that the difference between what consumers are willing to pay and what they actually pay will decrease. The lower quantity demanded means there are fewer units from which wool buyers can gain CS • PS will increase. This is despite some loss of PS due to the lower quantity sold, i.e. $\mathbf{Q_1}$ instead of $\mathbf{Q_e}$. The increase in PS due to the higher price resulting from the minimum price is more than sufficient to offset the loss of PS due to lower sales, so overall PS will increase. The wool farmers will receive a higher price for their wool ($\mathbf{P_{min}}$ instead of $\mathbf{P_e}$), and this increases the difference between what they

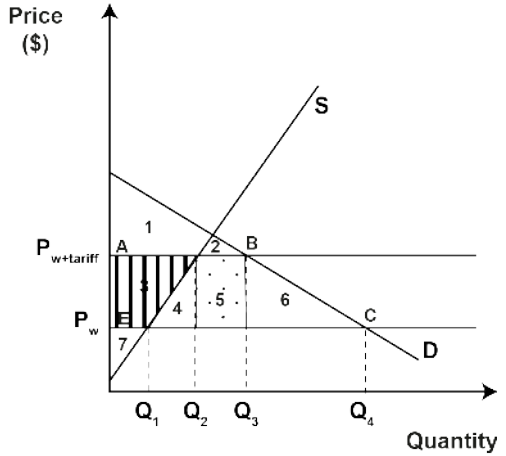
					are willing to receive for their wool and what they actually receive, increasing their PS. • Overall, there will be a loss of allocative efficiency because the loss in CS of $P_{min}BCP_e$ outweighs the gain in PS, which results in a net welfare loss represented by the deadweight loss of BCF. This is because the sum of CS and PS is no longer maximised following the minimum price control. Refers to Graph Five and Table Two in the explanation.		
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. Must refer to Graph Four and Five.	Most Merit evidence. Must refer to Graph Four and Five.	Excellence evidence. One part may be weaker AND integrates relevant information from Graph Five and Table Two into the explanation.	All points covered AND integrates relevant information from Graph Five and Table Two into the explanation.

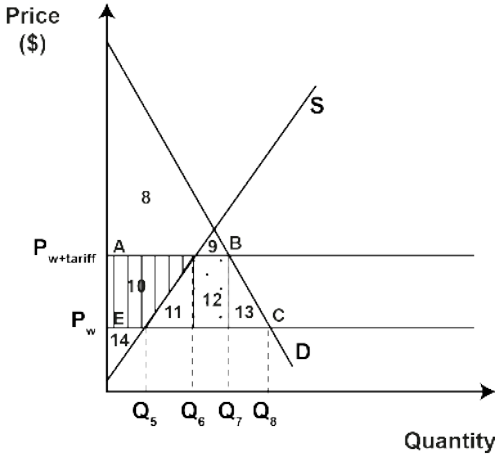
N0 = No response; no relevant evidence.

Appendix One – Question One (a)



Appendix Two – Question Two (a)





Appendix Three – Question Three (a) (i)