Assessment Schedule – 2022

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)	(i) (Increase of) P_2bcP_3 (ii) (Increase of) P_1abP_2 (iii) P_1acP_3 (iv) abc	THREE correct labels (increase / decrease not essential).		
(b)	(i) (Decrease of) P_2bcP_3 (ii) (Decrease of) P_3cdP_4 (iii) P_2bdP_4 (iv) bcd	THREE correct labels (increase / decrease not essential).		
(c)	Consumer Surplus A subsidy on electric vehicles will increase consumer surplus by P_2bcP_3. This is because consumers will be paying a lower price of P_3 (instead of P_2) and consuming a higher quantity (buying more electric vehicles) of Q_2 (instead of Q_1). This means they will have more units from which to gain a surplus and the difference between the price paid and the price they are willing to pay will increase. An indirect tax on petrol vehicles will decrease consumer surplus by P_2bcP_3. This is because consumers will be paying a higher price of P_2 (instead of P_3) and consuming a lower quantity (buying fewer petrol vehicles) of Q_1 (instead of Q_2).This means they will have fewer units from which to gain a surplus and the difference between the price paid and the price they are willing to pay will decrease. While the consumers of electric vehicles will have an increase in consumer surplus, consumers of petrol vehicles will have a decrease in consumer surplus. Allocative efficiency Both policies will lead to a loss of allocative efficiency as a deadweight loss is created in both instances. In the case of a subsidy on electric vehicles, the DWL area is abc. This is because the loss of welfare in terms of the subsidy cost (P_1acP_3) to the Government outweighs the combined gain in producer surplus and consumer surplus	Explains: • CS will increase for a subsidy due to the lower price OR the higher quantity • CS will decrease for an indirect tax due to the higher price OR the lower quantity • there will be a loss of allocative efficiency for the subsidy due to the DWL created OR as the sum of CS and PS is not maximised • there will be a loss of allocative efficiency for the indirect tax due to the DWL created OR as the sum of CS and PS is not maximised • the subsidy will cost the Government OR the indirect tax will earn the Government revenue.	Explains in detail: • CS will increase for a subsidy due to the lower price AND the higher quantity • CS will decrease for an indirect tax due to the higher price AND the lower quantity • there will be a loss of allocative efficiency for the subsidy due to the DWL created as the cost of subsidy outweighs the combined gain in CS and PS (must have outweighing idea) • there will be a loss of allocative efficiency for the indirect tax due to the DWL created as the combined loss of CS and PS is not fully offset by the gain in tax revenue for the Government (must have offsetting idea) • the subsidy will cost the Government AND the indirect tax will earn the Government revenue AND subsidy cost will mean spending in other sectors may have to be	Explains in detail: • CS will increase for a subsidy 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 has increased • CS will decrease for an indirect tax due to the higher price AND the lower quantity. 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 • there will be a loss of allocative efficiency for the subsidy due to the DWL created as the cost of subsidy outweighs the combined gain in CS and PS (must have outweighing idea) • there will be a loss of allocative efficiency for the indirect tax due to the DWL

	(P_2bcP_3 plus P_1abP_2) therefore the sum of consumer and producer surplus is no longer maximised. In the case of an indirect tax on petrol vehicles, the DWL area is bcd. This is because the gain in welfare in terms of the tax revenue collected by the Government (P_2bdP_4) is not enough to fully offset the combined loss in producer surplus and consumer surplus (P_2bcP_3 plus P_3cdP_4) therefore the sum of consumer and producer surplus is no longer maximised. Government Providing a subsidy would cost the Government P_1acP_3, which means that spending on some other sectors of the economy may have to be reduced. In contrast, an indirect tax would raise P_2bdP_4 tax revenue for the Government. This could be used to fund another area of the economy. Combination of the two policies A combination of the two policies might be better in helping the Government's goal of encouraging more consumers to buy electric vehicles instead of buying petrol vehicles. This is because the tax revenue raised from petrol vehicles could be used to subsidise the electric vehicles so that the policies, in combination, could be more financially sustainable (or cost neutral), meaning funding from other sectors would not need to be reduced.		reduced OR the revenue raised from the indirect tax could be used in other sectors of the economy.	created as the combined loss of CS and PS is not fully offset by the gain in tax revenue for the Government (must have offsetting idea) • the subsidy will cost the Government so spending in other sectors may have to be reduced AND the indirect tax will raise revenue for the Government AND implemented in combination, the tax revenue could be used to fund the subsidy so more financially sustainable.

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 One or Graph Two.		Integrates relevant information from both graphs into answer.	

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:
• P_e, Q_e
• P_1, Q_1
• shortage correctly labelled.</td><td></td><td></td></tr>
<tr><td>(ii)</td><td>The decrease in supply of rental homes, from S to S_1, will lead to a shortage of homes for rent at the original price (or rent) of P_e as the quantity demanded is greater than the quantity supplied. Consumers (tenants) looking to rent will bid the rent up for fear of missing out on the limited rental properties available. As the rent increases, producers (or landlords) will increase their quantity supplied as renting their property out becomes more profitable, while more tenants will find renting increasingly unaffordable so their quantity demanded will fall. As rent increases, QS will continue to rise while QD will continue to fall until QS = QD and equilibrium will be restored at a higher equilibrium price (weekly rent) of P_1 and a lower equilibrium 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>ALL of:
• shortage created at original price
• consumers bid up the price
• QD decreases
• QS increases
• equilibrium restored where QS=QD.</td><td></td></tr>
<tr><td>(b)(i)</td><td>A horizontal line, labelled P_{max}, drawn at $500.</td><td>$P_{max}$ correctly drawn and labelled.</td><td></td><td></td></tr>
<tr><td>(ii)</td><td><table><tr><th></th><th>Value before maximum price ($)</th><th>Value after maximum price ($)</th><th>Value of change ($) State increase or decrease</th></tr><tr><td>CS</td><td>1 875 000</td><td>3 075 000</td><td>1 200 000 inc.</td></tr><tr><td>PS</td><td>3 125 000</td><td>1 125 000</td><td>2 000 000 dec.</td></tr><tr><td>DWL</td><td>N / A</td><td>800 000</td><td>N / A</td></tr></table></td><td>THREE c
orrect calculations.</td><td>FIVE correct calculations.</td><td></td></tr>
<tr><td>(c)(i)</td><td>Consumer surplus will increase by $1.2 million, as the increase in surplus from the reduction in rent paid ($700 to $500 per week) is greater than the loss of surplus from the reduction in quantity (12 500 to 7 500 properties). This means the difference between the price / rent paid and the price / rent consumers are willing to pay has increased.</td><td>Explains:
• CS will increase due to the lower price / rent paid OR quantity decreases.</td><td>Explains in detail:
• CS will increase as the increase in surplus due to the lower price / rent paid is greater than the loss in surplus due to the lower quantity rented.</td><td>Explains in detail:
• CS will increase as the increase in surplus due to the lower price / rent paid is greater than the loss in surplus due to the lower quantity of properties rented. This means the difference between the price / rent paid and the price consumers are willing to pay has increased.</td></tr>
</table>

(ii)	Producer surplus will decrease by $2 million, as the landlords are receiving a lower rent ($700 to $500 per week) and are renting out fewer properties (12 500 to 7 500 properties). This means they have fewer units from which to gain a surplus and the difference between the price / rent they supply at and the price / rent they are willing to supply has decreased.	Explains: • PS will decrease due to the lower price / rent received OR the lower quantity rented	Explains in detail: • PS will decrease due to the lower price / rent received AND the lower quantity rented	Explains in detail: • PS will decrease due to the lower price / rent received AND the lower number of properties rented out. So fewer units from which to gain a surplus OR the difference between the price / rent received and the price / rent landlords are willing to receive has decreased
(iii)	There is a loss of allocative efficiency, represented by the deadweight loss of $0.8 million. This is because the loss of producer surplus of $2 million is not fully offset by the gain in consumer surplus of $1.2 million, the difference being the deadweight loss. This means the sum of consumer and producer surpluses is no longer maximised.	• 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.	• there will be a loss of allocative efficiency due to the DWL created as the loss of PS is not fully offset by the gain in CS.	• there will be a loss of allocative efficiency due to the DWL created as the loss of PS is not fully offset by the gain in CS. (Must have offsetting idea.)

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 Three OR Graph Four OR Table One.		Integrates relevant information from Graph Three, Graph Four, AND Table One into answer.	

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)</td><td>
<table>
<tr><th></th><th>Graph Five Elastic</th><th>Graph Six Inelastic</th></tr>
<tr><td>Increase in consumer surplus</td><td>3, 4, 5, 6</td><td>10, 11, 12, 13</td></tr>
<tr><td>Decrease in producer surplus</td><td>3</td><td>10</td></tr>
<tr><td>Loss of government tariff revenue</td><td>5</td><td>12</td></tr>
<tr><td>Gain in allocative efficiency</td><td>4, 6</td><td>11, 13</td></tr>
</table>
</td><td>SIX of eight correct.</td><td></td><td></td></tr>
<tr><td>(b)(i)

(ii)

(iii)</td><td>Consumer surplus increases by areas 3, 4, 5, 6 as consumers are paying a lower price, Pw’ (rather than Pw + tariff), so the difference between the price they are willing to pay and the price they are actually paying increases. Also, they are consuming a higher quantity, Q_4 (rather than Q_3) giving them more units from which to generate a surplus.

Producer surplus decreases by area 3 as producers are receiving a lower price, Pw’ (rather than Pw + tariff), so the difference between the price they are willing to supply at and the price they actually receive decreases. Also, they are selling a lower quantity, Q_1 (rather than Q_2) so they have fewer units from which to generate a surplus.

Government tariff revenue decreases by area 5 as the tariff applied to the amount imported (i.e. Q_2Q_3) will no longer be collected. The government may have to cut back on spending in some area of the economy.

Accept also: The government may gain more GST revenue as total consumer spending will increase to Pw’xQ4.</td><td>Explains:
• CS increases because of the lower price paid OR the higher quantity consumed
• PS decreases because of the lower price received OR the lower quantity sold
• the government loses tariff revenue.</td><td>Explains in detail:
• CS increases because of the lower price paid AND the higher quantity consumed
• PS decreases because of the lower price received AND the lower quantity sold
• the government loses tariff revenue as tariff no longer collected on imported goods and spending is cut elsewhere.</td><td>Explains in detail:
• CS increases because of the lower price paid AND the higher quantity consumed, so more units from which to gain a surplus OR the difference between the price paid and the price consumers are willing to pay has increased
• PS decreases because of the lower price received AND the lower quantity sold, so fewer units from which to gain a surplus OR the difference between the price received and the price producers are willing to receive has decreased
• the government loses tariff revenue as tariff no longer collected on imported goods.</td></tr>
<tr><td>(c)
(i)</td><td>Tariff removal leads to gains in allocative efficiency because the increase in consumer surplus more than offsets the combined loss of producer surplus and government tariff revenue (3, 4, 5, 6 > 3, 5 or 10, 11, 12, 13 > 10, 12) resulting in a net welfare gain (of 4, 6 or 11, 13). This means that the DWL that existed when there were tariffs is now eliminated. Allocative efficiency is achieved (or increases) as the sum of CS and PS is maximised.</td><td rowspan="2">Explains:
• there is an increase in allocative efficiency due to DWL being eliminated OR the sum of CS and PS is maximised
• gains in allocative efficiency are greater with elastic demand as the DWL areas eliminated are larger than the areas for inelastic demand.</td><td rowspan="2">Explains in detail:
• there is a gain in allocative efficiency due to DWL being eliminated. The increase in CS more than offsets the combined loss in PS and tariff revenue (must have offsetting idea)
• gains in allocative efficiency are greater with elastic demand as increase in QD is</td><td rowspan="2">Explains in detail:
• there is a gain in allocative efficiency due to DWL being eliminated AND the sum of CS and PS is maximised. The increase in CS more than offsets the combined loss in PS and tariff revenue (must have offsetting idea)
• gains in allocative efficiency are greater with elastic</td></tr>
<tr><td>(ii)</td><td>Tariff removal from imported goods that are more price elastic would lead to greater allocative efficiency gains as</td></tr>
</table>

	the DWL areas eliminated from the elastic demand graph are larger than the inelastic graph (4+6 > 11+13). This is because when demand is price elastic, the increase in the quantity demanded will be proportionally greater than the reduction in price resulting from the tariff removal. The greater increase in the quantity consumed gives consumers more units to gain a surplus, improving overall allocative efficiency. Also accept: The tariff created a larger deadweight loss for the price elastic goods (i.e. 4 + 6 > 11 + 13) as the decrease in quantity demanded is proportionally larger for price elastic good compared to price inelastic goods. Therefore, when the tariff was removed, there was a greater amount of deadweight loss removed for the price elastic goods.		proportionally greater than the reduction in price.	demand as increase in QD is proportionally greater than the reduction in price AND more units for consumers to gain a surplus so increasing overall allocative efficiency.

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 Five or Graph Six.		Integrates relevant information from Graph Five and Graph Six into answer.	

N0 = No response; no relevant evidence.

Cut Scores

Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
0 – 7	8 – 13	14 – 19	20 – 24

Appendix

Question Two (a)(i)

Graph Three: The New Zealand rental housing market with a decrease in supply