

Section A

- 1 Global wholesale gas and electricity prices were already rising in 2021 due to higher demand as economies reopened from Covid-19 lockdowns, and as competition for supplies between regions intensified. Russia's invasion of Ukraine led to sharp cuts in gas supplies to Europe, sending European natural gas prices to a record high, thus triggering a rise in electricity prices, since natural gas is required to produce electricity. To deal with the high prices, UK is imposing a price cap on energy prices.

Source: CNBC, 22 Aug 22

- (a) Explain how the above events may have led to the surge in [10]
electricity prices.
- (b) Discuss the policies that might be used by a government to mitigate [15]
the significant surge in electricity prices.

Question Analysis for (a):

Command word = 'explain' → explain the factors that lead to surge in electricity prices

Content → Demand, Supply, PED, PES

Context → Electricity market in UK

Requirement 1: Rise in demand with inelastic supply will lead to surge in price of electricity

Requirement 2: Fall in supply with inelastic demand will lead to surge in price of electricity

Requirement	Suggested answer
Intro:	As economies reopen and recover, there will be higher demand for electricity. Russia's invasion of Ukraine will lead to a fall in supply of electricity as the input – natural gas has fallen. All these factors coupled with the inelastic demand and supply will lead to a surge in price of electricity.
Requirement 1: Rise in demand with inelastic supply will lead to surge in price of electricity	As the economies reopen, the economies will recover. This will lead to an increase in income for many households. The increase in income results in an increase in purchasing power and increase in ability and willingness to consume normal goods. Normal goods are goods where a rise in income would lead to a rise in its demand. Electric appliances is an example of Normal goods. Electrical appliances and electricity are complement goods, as use of electricity is essential to ensure their

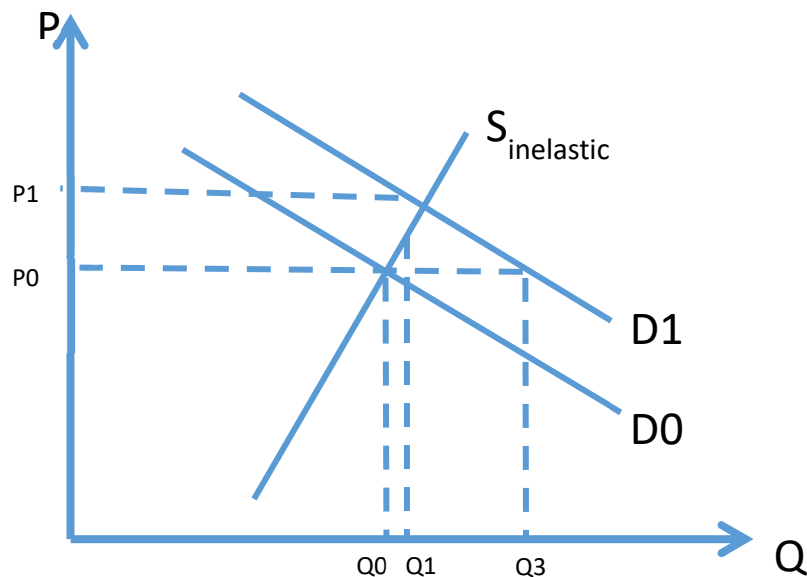
proper functioning of the electrical appliances. Hence the increase in income will lead to an increase in the demand for electricity by households. The increase in demand will lead to a shortage of electricity in the market and upward pressure on equilibrium price and increase in quantity.

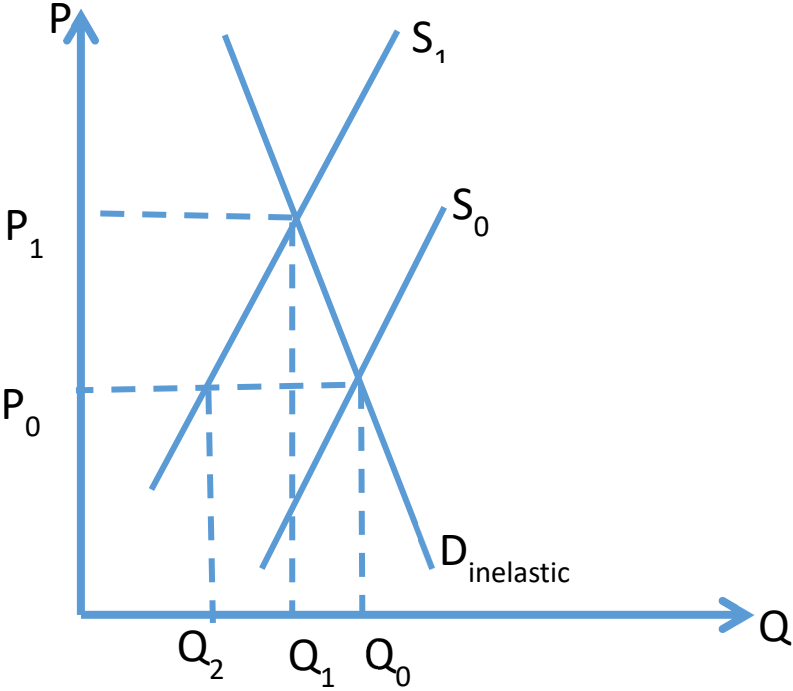
Firms will also tend to increase production of goods and sometimes the production of goods require the use of electricity as a factor of production.

The rise in demand for electricity from D_0 to D_1 will lead to a shortage of electricity Q_0Q_3 at the original price, P_0 . This will lead to upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rise. This continues until equilibrium price and quantity is reached.

Supply of electricity is likely to be price inelastic due to the length and complexity of production process and the availability of resources to produce electricity is limited, given shortages in natural gas, thus it is difficult for firms producing electricity to respond to the rise in demand. Thus, a rise in price in electricity is likely to lead to a less than proportionate rise in quantity supplied.

As supply of electricity is price inelastic, the rise in price leads to less than proportionate rise in quantity supplied. Thus, the overall rise in electricity prices has surged.



<p>Requirement 2:</p> <p>Fall in supply with inelastic demand will lead to surge in price of electricity</p>	<p>Russia's invasion of Ukraine led to sharp cuts in gas supplies to Europe, sending European natural gas prices to a record high, thus triggering a rise in electricity prices, since natural gas is required to produce electricity. The cost of production of electricity has increased, causing the supply of it to fall.</p> <p>The fall in supply for electricity from S_0 to S_1 will lead to a shortage of electricity Q_2Q_0 at the original price, P_0. This will lead to upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rise. This continues until equilibrium price and quantity is reached.</p> <p>Demand of electricity is price inelastic as it is a necessity. Thus, a rise in price in electricity is likely to lead to a less than proportionate fall in quantity demanded.</p> <p>Thus, this will further lead to a surge in the price electricity.</p> 
<p>Conclusion</p>	<p>Hence, the above factors have led to a surge in the price of electricity.</p>

Level	Knowledge, Application/Understanding and Analysis	Mark
L3	An answer that provides a clear and thorough explanation of both factors given in the preamble. A clear elaboration on the application of PES and PED (elasticity concept). Max 8 if there is only one elasticity	8 – 10
L2	An answer that provides a good explanation of both factors in the preamble. Some elaboration on the application of PES and PED (elasticity concept).	5 – 7
L1	An answer that demonstrates weak knowledge and application of the characteristics of market, possibly with multiple conceptual errors.	1

Markers' Comments

- Many candidates were able to provide the demand and supply factors that cause the price to increase. However, some of them did not bring in any elasticity concepts. A 10 mark question will require minimally 2 factors with the relevant elasticities. In addition, the key word **“surge”** should have given the students the hint to bring in the relevant elasticities.
- Good responses were also able to analyse clearly how the supply and demand factors as well as making good use of PED and PES to explain what leads to the sharp rise in the price of electricity. Students were also able to explain the price adjustment process, highlighting how shortages will lead to upward pressure on the price.
- Some students did not understand the relationship between natural gas and electricity. See preamble- “Natural gas is required to produce electricity.” Many incorrectly saw them as complements.
- For weaker students who are in the low L2 range, there were two main mistakes that were made.
 - Firstly, a minority of students in this range did not use any elasticity concept and only explained the demand and supply factors.
 - The second mistake was misconceptions of the elasticity concepts to be used. Weaker students used PES to explain the extent of change in price of electricity after talking about the shift in supply. This is a misconception. PES is relevant to explain the surge in the price when there is an increase in demand whereas PED is relevant to explain the surge in the price when there is a fall in supply.
- Some students were also confused with the cause-and-effect relationship between quantity demanded/quantity supplied and price. These students explained that, when $|PED| < 1$, the fall in quantity demanded led to a less than proportionate increase in price.

This is wrong. It should be, the increase in price led to a less than proportionate decrease in quantity demanded.

- In terms of diagrammatical analysis, students should label the diagrams properly indicating the market they are analyzing. Some students labelled the X-axis of the diagram as natural gas instead of electricity. Read the question properly! Students are reminded of the need to make reference to the diagrams.

b) Discuss the policies that might be used by a government to mitigate the significant surge in electricity prices. [15]

Question Analysis for (a):

Command word = 'discuss' → what the policies are and their limitations

Content → policies to deal with the surge in price of electricity

Context → Electricity market in UK

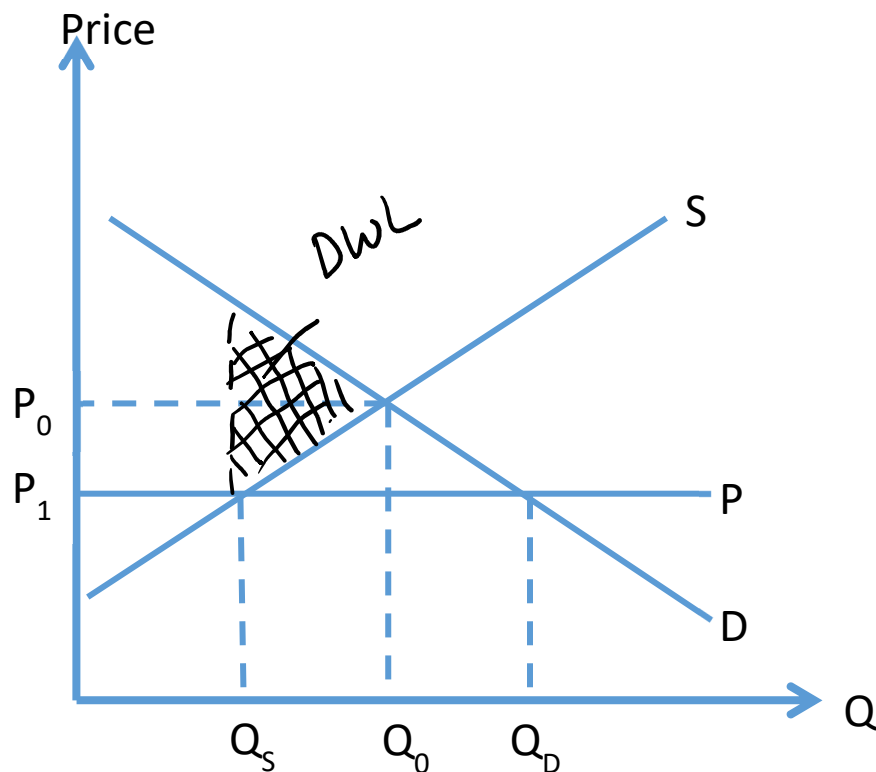
Requirement 1: Price ceiling and limitations.

Requirement 2: Subsidies to develop sustainable sources of energy and limitations.

Requirement 3: Campaign to educate consumers on reducing electricity wastage and limitations.

Other policies such as promotion the use of solar panels to generate own electricity are accepted.

Requirement	Suggested answer
Intro:	Given that electricity is used to operate many stuff like electrical appliances and also for industrial / commercial needs, the government can intervene through various policies to address the surge in electricity price.
Requirement 1: Price ceiling and limitations	To address the rising electricity prices, the government could intervene through imposing a price ceiling on electricity to keep the price of electricity affordable. A price ceiling is a legal maximum on the price at which the good can be sold. For it to be effective, it should be set below the market equilibrium price. As shown in Figure 5, the government could impose a price ceiling at P1, which is lower than the equilibrium price.



Evaluation of price ceiling

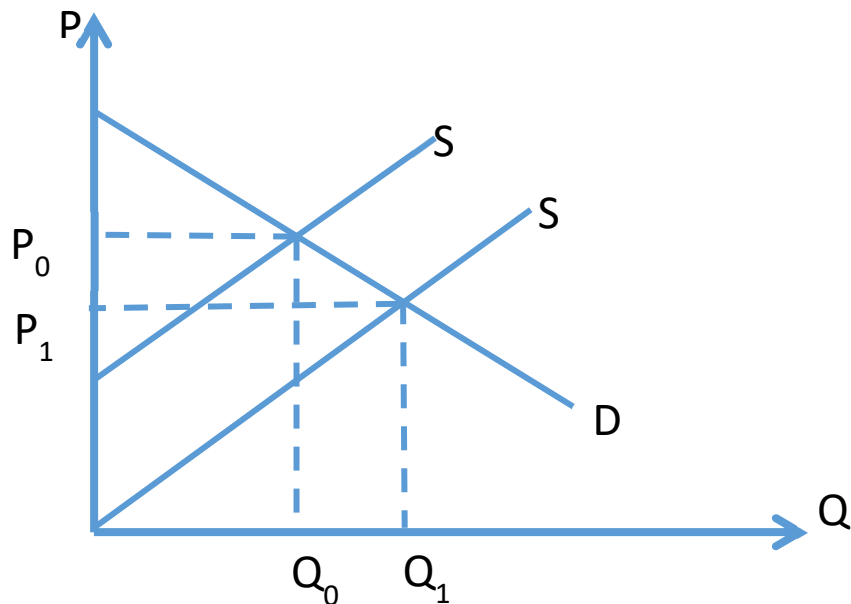
However at P_1 , there is a shortage of $Q_D - Q_S$ of the good as the quantity demanded is Q_D but the quantity supplied is only Q_S . This shortage will persist because the market is prevented from adjusting itself. The shortage will cause queues, waiting lists or the restriction of sales by firms to favoured customers. This prevents many from getting access to electricity. Thus, the policy may end up hurting the group of low-income people it was meant to help. This is dire since electricity is an essential good for survival given that almost everything one uses requires the use of electricity. Moreover, at Q_S , society values each additional unit of the good more than what it would cause society to produce it. More resources should have been allocated to the production of electricity for consumption by society. The shaded area (in the above Figure) illustrates the deadweight loss to society.

Requirement 2:

Subsidies to develop sustainable sources of energy and limitations

To address the rising electricity prices, the government can intervene by providing a subsidy to encourage technology and innovation to produce electricity using alternative sources of energy that are sustainable.

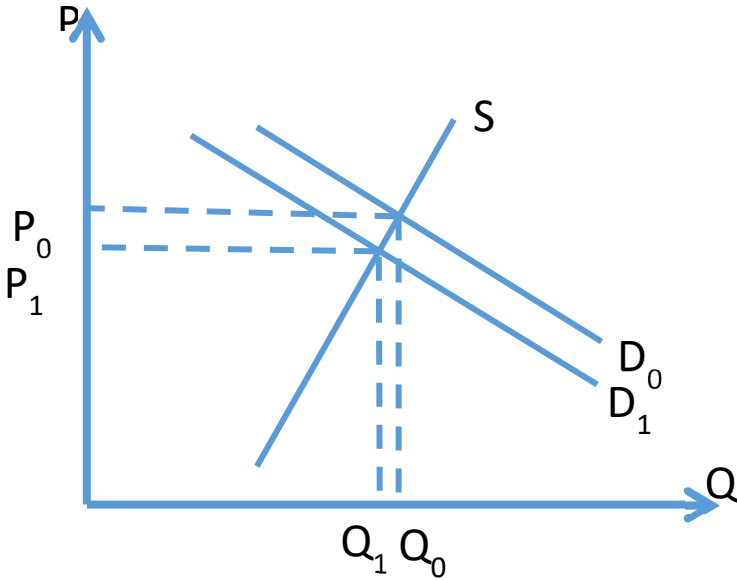
More countries are generating electricity from renewables such as hydropower, wind and solar energy instead of electricity generated from coal plants. Thus, governments can provide subsidies to encourage the production electricity using renewable energy. By providing a subsidy, it lowers the cost of production of producing electricity using renewable energy and hence more profitable for the producers, *ceteris paribus*. Producers are more willing and able to supply, leading to an increase in supply of electricity. Supply curve shifts to the right, from SS_0 to SS_1 , as shown in the figure below. The increase in supply leads to a surplus and hence downward pressure on price from P_0 to P_1 . Thus, equilibrium price falls from P_0 to P_1 .



Evaluation of subsidy

However, providing subsidies may put a strain on government's budget. This may incur opportunity costs as it results in resources being diverted from other areas such as education and healthcare to accommodate the provision of subsidies.

Furthermore, it takes time for this research and development of using alternative energy sources to generate electricity extensively. Hence this may not be able to address the current problem of rising electricity prices in the short run.

<p>Requirement 3:</p> <p>Campaign to educate consumers on reducing electricity wastage and limitations.</p>	<p>The government can also work on educating the consumers to reduce electricity wastage. Consumers can be educated on buying more energy efficiency appliances that will reduce the usage of electricity. They can also be educated on simple good habits to cut down on the demand for electricity such as maximising insulation at homes to reduce energy usage and to take shorter and fewer hot showers.</p>  <p>From the diagram above, the fall in demand from D_0 to D_1 will lead to a fall in the price from P_0 to P_1.</p> <p>Evaluation of education</p> <p>However, habits and mindset of consumers take time to change. As the consumers already own less efficient appliances, they might see the need to change to ones that are more efficient.</p>
<p>Conclusion</p>	<p>In the short run, providing a subsidy or introducing a price ceiling is an immediate solution to reduce the price of electricity especially in view of a rapid economic rebound and the invasion of Ukraine. However, such solutions are not sustainable. Therefore, a long term solution is required. By diversifying the energy sources of production and reducing our electricity usage, the energy prices can be kept more affordable. In particular, the investment in technology and infrastructure on renewable energy may bring more benefits to the countries in the long run in terms of lower electricity prices.</p>

Knowledge, Application, Understanding and Analysis		
L3	A balanced and well-developed answer on the policies used by the governments to address rising electricity prices, with use of examples.	8 – 10
L2	An under-developed, balanced answer on policies deal with rising electricity prices, with inconsistent use of examples and gaps in analyses.	5 – 7
L1	May have many and/or serious conceptual errors. May have relevant points that were made incidentally.	1 – 4
Evaluation		
E3	For an answer that arrives at an analytically well-reasoned judgement about government decisions to implement policies to address rising electricity prices. Might also question any unstated assumptions to arrive at this well-reasoned judgement.	4 – 5
E2	For an answer that makes some attempt at evaluation, but does not explain adequately their judgement or base it in analysis, about their judgement on government policies to deal with rising electricity prices.	2 – 3
E1	For an answer that gives an unexplained, unsupported evaluative statement on government policies to deal with rising electricity prices.	1

Marker's Comments

- The stronger students were able to provide the relevant strategies like price ceiling and subsidy to deal with the price increase with clear reference to DD/SS diagrams. They were also able to provide the limitations.
- For the weaker students, relevant strategies were brought in, but answers lacked economic analysis. They did not link the strategies to how the DD or SS will be impacted to bring down the price of electricity. Some did not even draw diagrams.
- Price adjustment process to explain how the strategies will lead to surplus, hence downward pressure on the price is missing in many of the answers.
- Evaluation was weak as it lacked contextualisation i.e. it did not link to the situation outlined in the preamble.

- 2 (a) Explain the relevance of different types of cost in the decision of a firm to close during an economic downturn. [10]
- (b) Discuss the extent to which firms faced by high levels of competition are more vulnerable to closure than firms in less competitive industries. [15]

Question Analysis for (a):

Command word = 'explain' → Define and give relevant details on how the different types of cost will cause the firm to close down

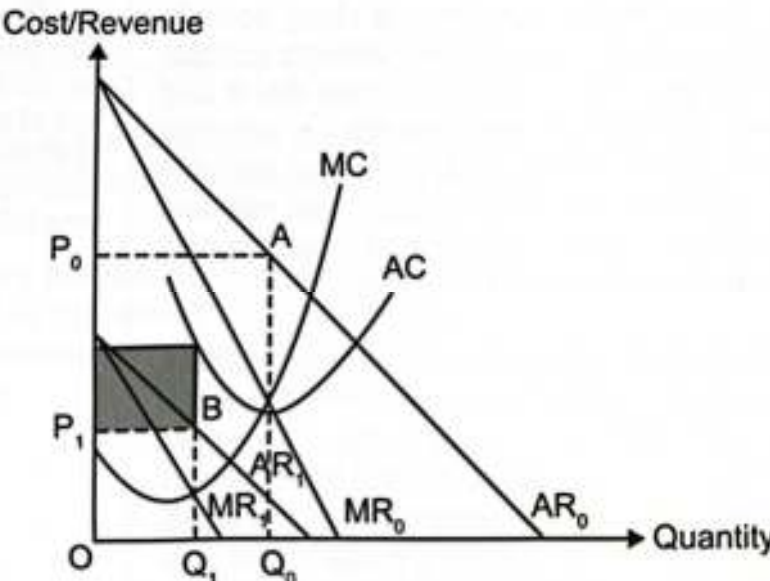
Content → Types of costs relevant to the shut-down condition in the SR and LR

Context → None, examples can be given

Requirement 1: Relevance of types of cost in the decision of a firm to close in the SR

Requirement 2: Relevance of types of cost in the decision of a firm to close in the LR

Requirement	Suggested answer
Intro:	<p>During an economic downturn, there will be a fall in real national income and hence, purchasing power of consumers will fall. This will lead to a fall in demand of goods and services.</p> <p>With a fall in demand for its products, a firm will close down in the short run if Total revenue (TR) cannot cover Total variable costs (TVC). However, in the long run, a firm will close down and exit the industry if it continues making subnormal profits, i.e. Total Cost (TC) exceeds Total Revenue (TR). (Note: All costs are variable in the long run.)</p> <p>Hence, costs arising from the use of variable factors of production such as labour and raw materials are relevant to a firm's shut-down decision in the short run; while all types of costs are relevant to the firm's shut-down decision in the long run.</p> <p>A firm is assumed to be profit motivated, hence produces where $MC = MR$. When $MR > MC$, producing an additional unit of output adds more revenue than cost, hence total profits will increase if more is produced. When $MC > MR$, producing one less unit of output will create more cost savings than foregone revenue. Total profits can be increased by decreasing production. Thus, profit is maximised when $MR = MC$.</p>
Requirement 1:	A fall in demand for the firm's products will lead to an leftward shift of the AR and MR curves. As shown in the fig below, this results in a fall in

<p>Relevance of types of cost in the decision of a firm to close in the SR</p>	<p>the revenue curves from AR, to AR, and MR, to MR, respectively. Assuming an unchanged MC curve, equilibrium price falls from P_0 to P_1, while equilibrium output falls from Q_0 to Q_1. As a result, total revenue earned by the firm falls from OP_0AQ_0, to OP_1BQ_1. The fall in total revenue results in the firm earning subnormal profits, as shown by the shaded area.</p>  <p>Variable costs refer to production costs, which vary positively with output, while fixed costs remain unchanged with output. For example, in the case of a hotel, variable costs include the cost of hiring staff and maintaining the hotel facilities. However, in the case of a textile factory, variable costs include the cost of raw materials as well as delivery costs.</p> <p>When a firm earning subnormal profits in the short run, the decision to shut down or not will depend on whether its total revenue can cover its total variable because its goal now is loss-minimisation.</p> <p>If $TR \geq TVC$ (or $AR \geq AVC$) \rightarrow the firm will continue production. This is because the remaining TR can be used to offset TFC. If it shuts down, it will incur the whole of TFC.</p> <p>If $TR \leq TVC$ ($AR \leq AVC$) \rightarrow the firm will shut down. This is because it will only incur the TFC if it shuts down. If it continues, it will incur TFC as well as the gap between TVC and TR.</p>
<p>Requirement 2:</p> <p>Relevance of types of cost in the decision of a firm to close in the SR</p>	<p>However, a firm will decide to close down and exit the industry in the long run as long as it continues to earn subnormal profits. This is because in the long run, all production costs are variables (e.g. land lease contract has expired too). Therefore, a producer making subnormal profits can exit the industry and divert his resources into producing more profitable goods instead. In the example of the hotel, the relevant costs affecting the decision to close down in the long run include the cost of leasing the land as well as other equipment costs</p>

	(previously regarded as fixed costs in the short run, but are now variable), on top of the other variable costs already identified earlier.
Conclusion	In conclusion, the firms will also choose an output level where $MC=MR$ to maximize profit. They will take into consideration variable costs in the short, but will shut down in the long run as long as they earn subnormal profits.

Level	Knowledge, Application/Understanding and Analysis	Marks
3	Well-developed explanation on how the different types of cost will affect shut down condition in the SR and LR	8-10
2	Compared to L3, lacks: -scope (only explained shut down condition in the SR or LR) -depth (insufficient use of economic analysis)	5-7
1	Descriptive answer	1-4

Markers' Comments

Students did not link economic downturn to a fall in demand of the goods and simply wrote about the shut down conditions. Even so, the analysis was weak with no diagram. A few students forgot the shut down conditions in the SR and even said to compare TR with TFC (Total Fixed costs) or worst still to compare TR with AR!!

Answers for this question also tend to be fairly short as students did not elaborate on the various types of costs in SR and LR and how they will affect the firms' decisions to shut down in the SR or to leave the industry in the LR.

2b) Discuss the extent to which firms faced by high levels of competition are more vulnerable to closure than firms in less competitive industries. [15]

Question Analysis for (b):

Command word = 'Discuss the extent' → Explain how much you agree and do not agree with the view

Content → Levels of competition, Types of market structure

Context → None, provide relevant examples

Requirement 1: Firms faced by high levels of competition (PC firm or MPC firm) are more vulnerable to closure in a recession than firms in less competitive industries (Monopoly or Oligopolist).

<p>Requirement 2: Firms faced by high levels of competition (PC firm <u>or</u> MPC firm) are less vulnerable to closure in a recession than firms in less competitive industries (Monopoly <u>or</u> Oligopolist).</p> <p>Requirement 3: There are other factors that will cause the firm to shut down other than the type of market structure.</p>	
Requirement	Suggested answer
Intro:	<p>Firms faced with high levels of competition are for example firms in a perfectly competitive industry or monopolistic competitive industry whereas firms in an industry with less competition is an oligopolist or monopoly.</p> <p>This essay will consider whether firms in high levels of competition are more vulnerable to closure than firms in less competitive industries, and if there are other factors that determine vulnerability to closure.</p>
Requirement 1: Firms faced by high levels of competition (PC firm or MPC firm) are more vulnerable to closure in a recession than firms in less competitive industries (Monopoly OR Oligopolist).	<p>PC/MPC firms make only normal profits in LR. There are low barriers to entry hence there is ease in the entry and exit of firms in this PC/ MPC industry. Hence, in the long-run, they are only able to earn normal profits. Thus, there is higher tendency to fall into subnormal profits when demand for the goods falls.</p> <p>As mentioned in Part (a), a fall in demand for a product during an economic downturn would lead to a fall in the price. For a MPC firm, they are making normal profit before the economic downturn. Any decline in the price of the good would push them into a subnormal profit position and close if $AR < AVC$ in the SR or if $AR < AC$ in LR.</p> <p>There are high barriers to entry for Monopolies/Oligopolistic firms. Hence, they are able to earn supernormal profits in the long run. Hence, any reduction in the price would not necessarily force them into a subnormal profit position. Even if they do earn subnormal profits, they could make use of their past profit to help them tide through the tough times.</p>
Requirement 1: Firms faced by high levels of competition (PC firm or MPC firm) are more vulnerable to closure in a recession than firms in less competitive industries (Monopoly OR Oligopolist).	<p>Firms that were previously cost-inefficient due to the lack of competitive pressures may also take the chance to eliminate redundancies to protect profits, hence bringing them to closer to productive efficiency and boosting their chances of surviving the economic downturn.</p> <p>Oli/Monos such as Large MNCs who may be less productive efficient would shed excess staff during an economic downturn. This improves their chances of surviving the recession and allow them to grow again during the recovery.</p> <p>For PC/MPC firms, the high level of competition forces them to be productive efficient and cut down wasteful spending. Hence, during</p>

	<p>economic downturn, more MPC firms like bubble tea shops will close down due to fall in their demand as they are not able to cut costs further since they are already making normal profits.</p>
<p>Requirement 2: Firms faced by high levels of competition (PC firm OR MPC firm) are less vulnerable to closure in a recession than firms in less competitive industries (Monopoly OR Oligopolist).</p>	<p>Firms faced by high levels of competition (PC firm OR MPC firm) are less vulnerable to closure in a recession than firms in less competitive industries (Monopoly OR Oligopolist). The sunk cost in MPC is much lower as compared to the sunk cost in an oligopolistic firm.</p> <p>MPC firms are small and does not use hi-tech capital goods. Hence, the costs are low. Thus, it is harder for them to reach the price level where they would need to shut down. However, oligopolistic firm which are more capital/ technologically intensive and will incur high costs. It is easier to reach shut down condition where $AR(P) < AC$.</p>
<p>Requirement 3: The nature of the good will determine if the firm will shut down regardless of the level of competition.</p>	<p>During a recession, firms producing normal goods experience a fall in demand, while producers of inferior goods will enjoy a rise in demand. Thus, firms that sell inferior goods like hawker stalls compared to restaurants may earn more revenue during a recession through increased price and quantity. YED measures how responsive demand is with regards to changes in income. YED is negative for an inferior good, thus demand for the good increases when income falls.</p> <p>However, for normal goods, especially for goods that are income-elastic in demand, such as luxury bags, the fall in income will result in a more than proportionate fall in demand. Price and quantity will fall by a large extent, leading to a large fall in revenue, hence increasing their chances of closing down.</p> <p>Thus, vulnerability to closure may not be due to whether a firm is more or less competitive, but may be because of what they are selling.</p>
<p>Evaluative conclusion</p>	<p>The extent to which a firm is likely to close down during an economic downturn depends to a large extent on the market in which the firm operates. While Oligopolies may be more resilient to closure due to the accumulation of past profits which can buffer the losses, MPC firms may also survive due to lower costs in general. Nevertheless, oligopolies are more able to reduce the cost of production through process innovation due to the accrued profits earned.</p> <p>However, level of competition is only one factor that determines the likelihood of a firm closure during a recession, the nature of their product and ability to adjust in changing the nature of their operations would also determine their vulnerability to closure.</p>

Knowledge, Application, Understanding and Analysis		
L3	<ul style="list-style-type: none"> • A well-developed, balanced answer that has good use of economic framework that provide analytical rigour • Answer is applied well to various contexts to demonstrate strong grasp of the content required. 	8 – 10
L2	<ul style="list-style-type: none"> • 1 sided answer that has adequate use of economic framework. • A 2-sided but undeveloped answer • Some application of content to different contexts. 	5 – 7
L1	<ul style="list-style-type: none"> • Smattering of points • Descriptive answer lacking in economic analysis 	1 – 4
Evaluation		
E3	<ul style="list-style-type: none"> • Judgement that is well supported and synthesizes all the arguments put forth 	4 – 5
E2	<ul style="list-style-type: none"> • Judgement that has some support and has some attempt to draw conclusions from the arguments raised. 	2 – 3
E1	<ul style="list-style-type: none"> • Unsupported judgement 	1

Markers' Comments

Students generally understood the requirements of the question. However, the answers were undeveloped or lack scope. They explained how the different levels of profits earned by the different market structures will affect their vulnerability but did not link to levels of BTEs. Students could see that firms with less level of competition were less vulnerable to closure due to the supernormal profits that they earned previously. However, the answers lacked scope or were one-sided. Many also did not bring in other factors that would determine a firm's vulnerability to closure.

3 The existing worldwide approaches concerning e-cigarettes, designed to deliver nicotine akin to smoking but without the detrimental tar effects of traditional cigarettes, span from complete prohibition as observed in Singapore, to relatively unrestricted market entry in Malaysia. Advocates of e-cigarettes contend that these alternatives are less harmful than conventional cigarettes and aid in smoking cessation.

(a) Explain why government intervention is required to correct the over- [10]
consumption of e-cigarette.

(b) Discuss the various factors contributing to the government's [15]
different approaches towards tackling the market for e-cigarette
market.

Question Analysis for (a):

Command word = 'explain' → cause and effects

Content → 2 sources of market failure: negative externalities and imperfect information

Context → E-cigarettes

Requirement 1: Government intervenes in the market for e-cigarettes due to negative externalities.

Requirement 2: Government intervenes in the market for e-cigarettes due to imperfect information.

Requirement	Suggested answer
Intro:	E-cigarettes are deemed a demerit good in Singapore, considered by the government to be socially undesirable and will be overconsumed if left to the free market. The two sources of market failure in e-cigarettes are negative externalities and imperfect information.
Requirement 1: Negative externalities	<u>Step 1: Explain the externality</u> There are negative externalities in consumption in the market for e-cigarettes. This is because in the consumption of e-cigarettes, it leads to lower productivity from health-related issues, affecting the productivity of the individual at work and thus the revenue of third parties not directly involved in the economic transaction.

The negative externalities cause **MSC to diverge from MPC** in the figure below as $MSC = MPC + MEC$. We assume that there are no positive externalities in the cigarette market, i.e., $MEB = 0$. Thus, $MSB = MPB$.

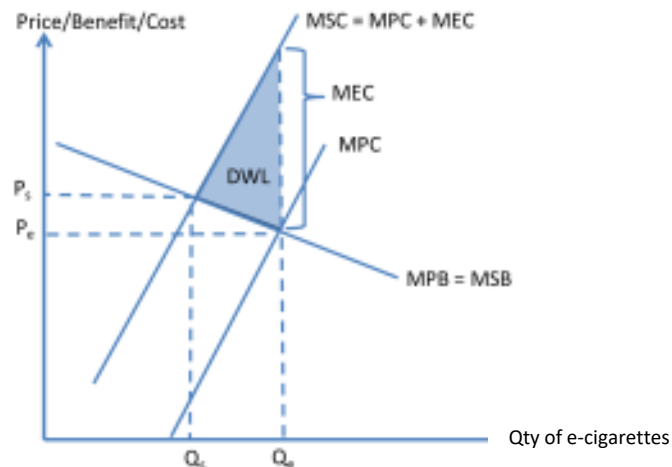


Figure 1: Market failure due to negative externalities

The market equilibrium quantity will be at Q_e where **$MPB = MPC$** . This is because **self-interested** consumers and producers will only consider their private benefits and costs in their consumption and production decisions.

However, the socially optimal output where social welfare is maximised is at Q_s where **$MSB = MSC$** . This is because if $MSB > MSC$, social welfare can be increased by consuming and producing more while if $MSB < MSC$, social welfare can be increased by consuming and producing less.

Since Q_e exceeds Q_s , there is **overconsumption** of e-cigarettes.

For the quantity in between Q_s and Q_e , MSC is more than MSB . This causes a deadweight loss of the shaded area as social welfare is not maximized. Hence, the market fails due to allocative inefficiency.

Requirement 2:
Imperfect information

Information failure results in myopic decision-making on the part of e-cigarette smokers, who tend to under-estimate the full private costs, including the long-term health risks such as developing lung cancer. As such, the $MPC_{perceived}$ is lower than the MPC_{actual} , which can be seen in the figure below.

	<p>The market equilibrium quantity will be at Q_e where $MPB = MPC_{PERCEIVED}$. However, the socially optimal output where social welfare is maximised is at Q_s where $MSB = MSC$. Since Q_e exceeds Q_s, there is overconsumption of e-cigarettes. For the quantity in between Q_s and Q_e, MSC is more than MSB. This causes a deadweight loss of the shaded area as social welfare is not maximised. Hence, the market fails due to allocative inefficiency.</p>
Conclusion	The above are the reasons why the government intervene in the market for e-cigarettes.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> provides a clear and developed explanation of how the market for e-cigarettes can fail (negative externalities and imperfect information) 	8 – 10
L2	For an under-developed explanation that: <ul style="list-style-type: none"> explains the market failure due to only either negative externalities or imperfect information contains multiple gaps in conceptual accuracy or rigour 	5 – 7
L1	For an undeveloped answer that is generally descriptive in nature, has serious misconceptions or with limited reference to any economic framework.	1 – 4

Markers' Comments

- Expected the students to do better in this question given that it was a straight forward question. Students are reminded to contextualise their answers. Many of the students only

provided one source of market failure. Students must memorise the steps needed to explain how market fails in order to have in-depth economic analysis.

- Diagrams were drawn but there were no explanation on how the market equilibrium output and socially optimal level of output were derived. There were some students who shaded the deadweight loss areas in their diagrams wrongly. Some of the diagram drawn had missing labels.

3b) Discuss the various factors contributing to the government's different approaches towards tackling the market for e-cigarette market. [15]

Question Analysis for (b):

Command word = 'Discuss' → to present arguments in details and come to a conclusion

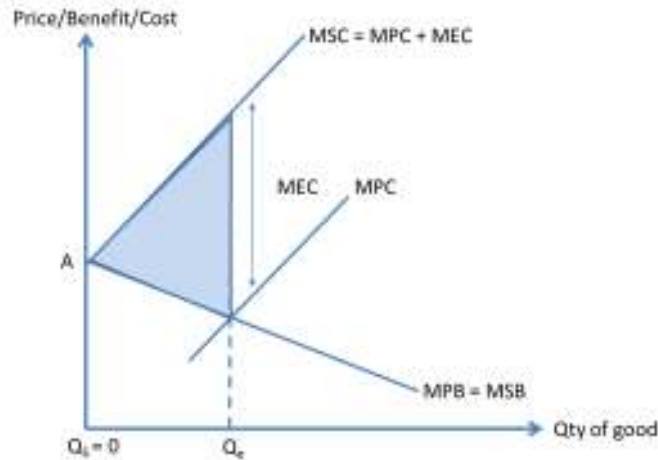
Content → Decision-making framework

Context → E-cigarettes

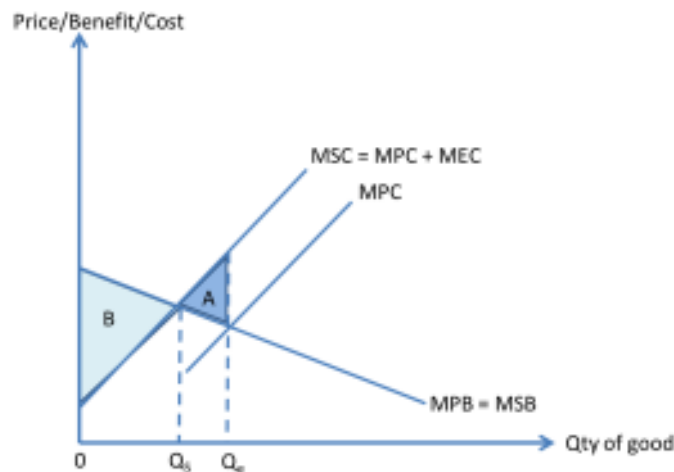
Requirement 1: Differing views on cost and benefits of cigarettes

Requirement 2: Differing views due to constraints

Requirement	Suggested answer
Intro:	<p>The Singapore government has chosen to ban e-cigarettes. On the other hand, the Malaysia government has left the market largely unregulated.</p> <p>This essay will seek to discuss why the 2 countries have differing approaches towards intervention in the market for e-cigarettes.</p>
Requirement 1: Differing views on costs	<p>E-cigarettes are deemed a demerit good in Singapore, considered by the government to be socially undesirable and will be overconsumed if left to the free market. The two sources of market failure in e-cigarettes are negative externalities and imperfect information. The Singapore government has deemed it necessary to ban the good due to the large extent of negative externalities and/or imperfect information.</p> <p>In Singapore, e-cigarettes are banned as Singapore government felt that the external cost is so much that the socially optimal level of output, Q_s, occurs at the quantity of zero where $MSB = MSC$. Hence, only a complete ban will lead to the complete elimination of deadweight loss, achieving allocative efficiency.</p>

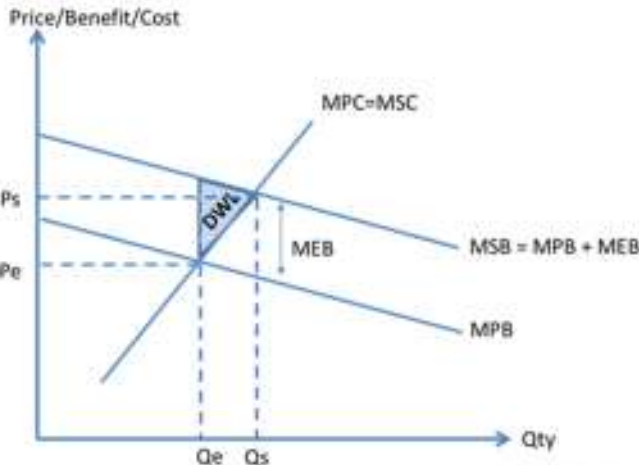


In countries where e-cigarettes are not banned, the government felt that the external cost is not sufficiently high i.e. MSC does not deviate from MPC to a large extent. The impact of second-hand smoking is reduced to a large extent for e-cigarettes. Thus, a complete ban would restrict output by too much. This could result in a deadweight loss that is greater than the original market failure as illustrated below.



In the figure above, the deadweight loss due to the negative externality is the triangle A (i.e. $MSC > MSB$ over output $Q_e - Q_s$). The deadweight loss from the ban is the triangle B, which is the welfare forgone compared to if the output had been at socially optimum (i.e. $MSB > MSC$ over output $0 - Q_s$). In this situation, the government should not have imposed a ban. The ban has resulted in an even greater welfare loss (i.e. government failure.)

Due to these different views on the level of external costs, Singapore and Malaysia have adopted different approaches on whether a ban should be used.

<p>Requirement 1:</p> <p>Differing views on benefits</p>	<p>Governments may also have different views on the benefits of e-cigarettes. Some governments may consider them to be useful in the fight against smoking. As the governments may be concerned about market failure in the traditional cigarette market, it may be encouraging e-cigarettes as an alternative to cigarettes. By making e-cigarettes an attractive alternative to cigarettes, there are actually some benefits to e-cigarettes as they help smokers to quit smoking who are harmful.</p> <p>From the diagram below, countries that view e-cigarettes to be beneficial as they help smokers to quit smoking. The productivity of the working force will improve. Hence MSB will diverge from MPB. These countries will not ban e-cigarettes then.</p> 
<p>Requirement 2:</p> <p>Differing views due to constraints</p>	<p>Singapore faces little constraints in implementing a ban as it has an effective regulatory and monitoring system to ensure compliance and to prevent black market activities. Singapore is also a small country, hence the enforcement checks do not need to be so extensive as compared to a larger country like Malaysia.</p> <p>Hence, bigger countries like Malaysia may find it harder to implement a ban even if they consider e-cigarettes to be harmful as the country is much bigger, increasing the likelihood of smuggling and black market activities. The number of people affected may be large and this move could be politically unpopular. Moreover, a ban involves high monitoring costs which will eat into the budget countries and will stretch countries with budget constraints.</p>
<p>Conclusion</p>	<p>In making the decision on e-cigarette market intervention, governments will weigh factors such as costs, benefits, constraints they face and information they would need. The most important factor leading to the government's differing approaches is likely to be the extent of external costs. Even if a government faces funding limitations that impede its ability to administer a ban, it is likely to do so if it deems e-cigarettes to be harmful.</p>

	Factors that government consider most important will change with time as more information becomes available. Medical research might find that e-cigarettes do not really help smoker to quit smoking and might even worsen their health. In this case, Malaysia might decide to implement a ban.
--	--

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> provides a rigorous and balanced analysis that demonstrate understanding of factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes, using the DM Framework; and includes relevant real-world examples of policies throughout the essay to effectively support the analysis. 	8 – 10
L2	For an under-developed answer that: <ul style="list-style-type: none"> lacks scope and/or rigour in discussing the factors that might have led to governments' differing approaches in the market for e-cigarettes; and/or lacks effective use of relevant real-world examples to support the analysis. 	5 – 7
L1	For an undeveloped answer that shows some knowledge of the factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes.	1 – 4
Evaluation		
E3	For an answer that substantiates the <i>relative</i> importance of the various factors using analysis. Real world knowledge, weighing criteria, and challenging the assumptions underlying economic theories are used consistently in the weighing of the factor.	4 – 5
E2	For an answer that makes some attempt at a judgement on the factors governments might have considered when deciding on the different approaches to the intervention in market for e-cigarettes.	2 – 3
E1	For an answer that gives an unsupported evaluative statement(s) that addresses the question.	1

Markers' Comments

This question is badly attempted by many students. They did not know the requirement of the question and ended up bringing in policies to solve market failure. This is essentially a decision-making framework question. Students who brought in the relevant factors in the decision making e.g differing views on the costs lacked thorough analysis as they did not draw the necessary policy diagrams.

Section B

4	(a)	Explain what is meant by inclusive and sustainable growth.	[10]
	(b)	Discuss the extent to which inclusive and sustainable growth are integral to a country achieving a high standard of living.	[15]

4(a) Explain what is meant by inclusive and sustainable growth.

Suggested Answer:

Question Analysis for (a):

Command word = 'Explain' → Define and give relevant details on how inclusive and sustainable growth is achieved

Content → Inclusive growth and sustainable growth

Context → None, examples can be given

Requirement 1: Explain how sustained growth i.e. actual and potential growth is achieved.

Requirement 2: Explain what is further required for inclusive and sustainable growth to be achieved.

Requirement	Suggested answer
Intro: -Define inclusive growth and sustainable growth	Inclusive growth is growth that is broad-based across economic sectors, and creates employment opportunities for the majority of the country's population. Sustainable growth is growth that can be maintained without creating significant problems for future generations. In order for growth to be inclusive and sustainable, growth must first be sustained over the long run. This means that there needs to be both actual and potential growth.
Body I: Explain how sustained economic growth is achieved	Actual growth refers to the increase in the national output. It can be caused by an increase in the aggregate demand (AD) or an increase in the short run aggregate supply (SRAS). The increase in AD is caused by an increase in any factor affecting the components of AD, consumption, investment, government expenditure and value of net exports. As seen in Figure 1 below, an increase in AD

from AD_0 to AD_1 would cause an increase in NY from Y_0 to Y_1 as firms produce more output in response to the higher AD. This illustrates actual economic growth.

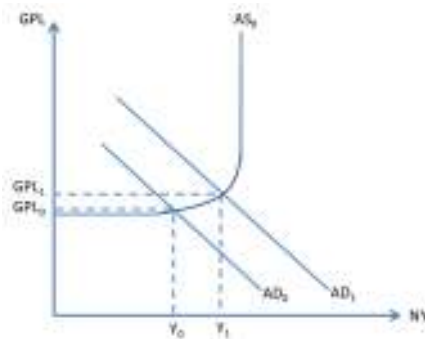


Figure 1: Actual Economic Growth due to increase in AD

The increase in SRAS is caused by a fall in costs of production. As seen in Figure 2 below, an increase in SRAS from $SRAS_0$ to $SRAS_1$ as illustrated by a downward shift of the SRAS curve would cause an increase in NY from Y_0 to Y_1 as firms produce more output in response to a lower cost of production. The increase in NY illustrates actual economic growth.

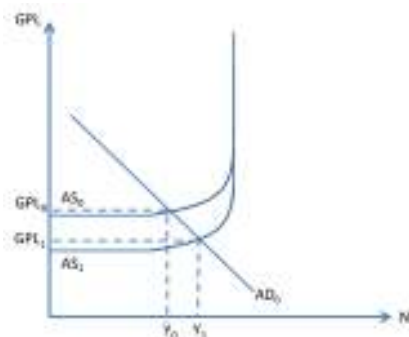
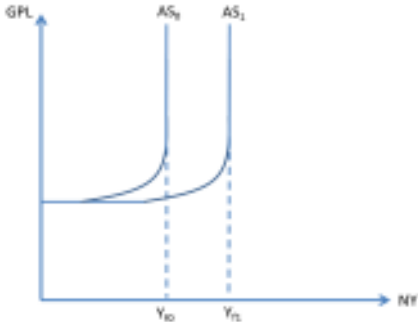
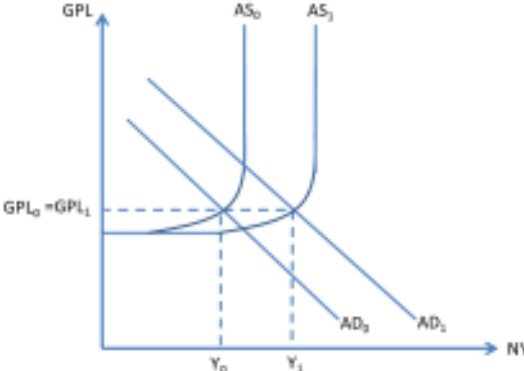


Figure 2: Actual economic growth due to increase in SRAS

Potential growth is the increase in the economy's productive capacity. The productive capacity is the maximum that an economy can produce. Potential growth is caused by an increase in the long run aggregate supply (LRAS) due to an increase in quantity and/or quality of factors of production and/or an improvement in technology. This is illustrated by a rightward shift in the LRAS from AS_0 to AS_1 as shown in Figure 3 below.

	 <p>Figure 3: Potential growth due to increase in LRAS</p> <p>When actual and potential growth are both achieved, sustained economic growth will be achieved as seen from the diagram below:</p>  <p>Figure 4: Sustained economic growth</p> <p>Both increases in AD and LRAS are needed for sustained growth. Increases in AD without increases in LRAS will eventually lead to high inflation and stagnation since NY is unable to increase beyond the economy's full employment level.</p>
<p>Body II: Explain sustainable growth</p>	<p>However, for growth to be sustainable, the sustained growth must be in a way that conserves the environment. Natural resource conservation and management plays a big part in achieving sustainable growth as future generations will also need to use natural resources to achieve economic growth too. For example, with higher growth rate and technological advancements, more renewable sources of energy are now more affordable. Hence, instead of using finite sources of energy such as fossil fuels, which are depleting, more renewable sources of energy such as solar energy should be used. Thus, growth is more sustainable.</p>
<p>Body III: Explain inclusive growth</p>	<p>Additionally, for growth to be inclusive, the sustained growth must be in a way that income inequality is not worsened. Growth could propagate inequality in income distribution. The increases in income associated with growth tends to benefit the rich more as it is the rich who possess the income-generating assets. In some countries, there will be</p>

	substantial differences between the urban and rural areas, with rural poverty rising. Hence, inclusive growth need to ensure that the benefits of the higher economic growth are distributed both to the rich and to the poor.
Conclusion	Both inclusive and sustainable growth are important to a country achieving a good standard of living.

Marking Scheme for (a)

Level	Knowledge, Application/Understanding and Analysis	Marks
3	Well-developed explanation on how sustained economic growth and hence sustainable and inclusive growth is achieved using AD/AS analysis	8-10
2	Compared to L3, lacks: -scope (only explained sustained economic growth and either inclusive or sustainable growth) -depth (insufficient use of economic analysis)	5-7
1	Only defined inclusive and sustainable growth or briefly described inclusive and sustainable growth	1-4

Markers' Comments

- This question was poorly attempted. Many students strangely seems did not realise that both inclusive and sustainable growth require sustained growth to be achieved first. Many incorrectly thought only sustainable growth require AEG and PEG to be in place first!
- Many essays have no diagrams. Diagrams should show how AEG can be achieved via increases in AD or SRAS. And PEG can be achieved via increase in LRAS.
- For inclusive growth, it requires equitable income distribution. Many students confused this with equal distribution. There is a difference. Equitable income distribution is about fairness in income distribution. Students can say 'achieve more equitable income distribution' or 'reduce income inequality' when explaining inclusive growth.
- For sustainable growth, it is not just about no pollution. It is about ensuring resource sustainability, so it is available for future generations.

4(b) Discuss the extent to which inclusive and sustainable growth are integral to a country achieving a high standard of living.

Suggested Answer:

Question Analysis for (b):

Command word = 'Discuss the extent' → Explain how much you agree and do not agree with the view

Content → Inclusive growth, sustainable growth, Standard of Living

Context → None, examples can be given

Requirement 1: Explain how (i) inclusive growth (ii) sustainable is integral to a country achieving a high SOL.

Requirement 2: Explain how (i) inclusive growth and (ii) sustainable growth may not help a country achieve high SOL (iii) Other aspects also need to be considered.

Requirement	Suggested answer
Intro: -Define Standard of Living	<p>Standard of living (SOL) refers to the well-being of the individuals in a country. There are two aspects of SOL:</p> <p>Material SOL which is determined by the quantity of goods and services enjoyed by the average individual;</p> <p>Non-Material SOL is qualitative aspect of SOL. It is determined by the quality of life and influenced by environmental factors such as externalities, crime rates, life expectancy, infant mortality rates, and leisure time etc.</p>
Body I: Explain why (i) inclusive and (ii) sustainable growth is integral to a country achieving a high SOL – Material and Non-material	<p>As explained in (a), achieving inclusive growth and sustainable growth implies that a country has first achieved sustained economic growth i.e. real national income as seen in Figure 4 from Y_0 to Y_1. If the growth in real income exceeds population growth, real income per capita increases. Hence, residents will have greater purchasing power and have the ability to consume more and better quality goods and services, increasing their material living standards.</p> <p>The increase in LRAS from AS_0 to AS_1 also reduces the risk of demand-pull inflation and therefore keeps the cost of living relatively lower, with GPL increasing to a small extent, there will be greater purchasing power and a higher material standard of living.</p> <p>Also, if residents were to spend their higher income on education and healthcare, this would help improve literacy rates and life expectancy, raising the standards of non-material SOL.</p>

	<p>Inclusive growth also implies that there is creation of employment opportunities for the majority of the country's population. If this were achieved, it would translate to higher income and higher purchasing power for all income groups. Hence, the increase in material standard of living is evenly distributed across all income groups.</p> <p>Furthermore, higher employment rates have been closely tied to the reduction of crime rates in a society, which would directly contribute to an improvement in non-material SOL. This is addition to the reduction in stress levels from receiving an income from employment.</p> <p>Thus, achieving inclusive growth is integral to a country achieving a high SOL.</p> <p>In the case sustainable growth, as it usually involves the adoption of cleaner energy such as wind or solar energy, this would reduce the negative externalities from pollution and cause an improvement in air quality. Thus, achieving sustainable growth is also integral to a country achieving a high SOL.</p>
<p>Body II: Explain why (i) inclusive and (ii) sustainable growth may <u>not</u> be integral to a country achieving a high SOL</p>	<p><u>Composition of output</u></p> <p>However, if sustained growth is achieved due to higher exports, or due to increase in government expenditure on national defence, material living standards do not increase significantly. This is because government expenditure on national defence do not directly contribute to the current material standard of living, and exported goods are for the consumption of foreigners. Instead, higher consumption expenditure and government expenditure on healthcare directly contribute to current material living standards.</p> <p>Hence, for growth to be integral to higher material living standards, it would depend on the composition of output.</p> <p><u>Disincentive to work and invest – Issue with how inclusive growth may be achieve</u></p> <p>To reduce income inequality, governments may employ a progressive tax structure that taxes the higher-income earners a greater proportion of their income compared to the lower-income earners.</p> <p>Assuming that working more generates higher incomes, a progressive tax structure may reduce an individual's incentive to work more as this may put him in a higher tax bracket where he has to pay a larger proportion of his increase in income as tax, thereby reducing his returns to work. This reduces the quantity of labour and productive capacity of the economy.</p> <p>Similarly, excessively progressive corporate income taxes reduce the returns to investment in both physical and human capital. This creates a disincentive for firms to invest in R&D and training of workers, which in turn has an adverse effect on the overall productivity of the country.</p>

	<p>Thus, while income distribution may have improved; it may hurt potential growth and slow down the rate of sustained growth. Progressive direct taxes may create disincentive to work and invest. The negative impact on potential growth will slow down the rate of sustained growth and limit the extent of rise in material living standards.</p> <p>Hence, for inclusive growth to be integral to higher material living standards, we need to consider how it is achieved.</p> <p><u>Burden on Govt– Issue with how sustainable growth may be achieved</u></p> <p>Sustainable growth is often achieved through the use of clean technology or campaigns. This usually involves large amounts of government spending. Hence, this could worsen budget deficits and in the case of developing countries with limited funds, it may need to be funded through high levels of public debt. The public debt may have to be paid for by future generations of taxpayers. Tax rates may have to be increased in the future, thereby limiting the amount of economic growth that can be enjoyed by future generations.</p>
Body III: Explain how other aspects also need to be considered for a country to achieve high SOL	<p>Apart from inclusive and sustainable growth, it would be important to also consider other aspects of a high standard of living, such as quantity of leisure time. If individuals are working harder as part of our bid to achieve inclusive and sustainable growth, then over time, the accumulated stress and fatigue could lead to health deterioration, hence worsening non-material living standards.</p>
Overall Evaluation	<p>Evaluative Conclusion</p> <ul style="list-style-type: none"> • [Stand]: In conclusion, whether inclusive and sustainable growth are integral to achieving higher living standards, depends on how such growth is achieved, as well as the state of the economy especially in terms of its fiscal health. <ul style="list-style-type: none"> ○ If growth is achieved through an increase in aggregate demand that does not directly impact current living standards or with inappropriate policies, the extent of increase in material standard of living would be limited. ○ For developing countries, it would also be crucial to consider if they have adequate funds to pursue inclusive and sustainable growth. If not, it may make more sense to park these aside and simply pursue sustained growth before looking at these aspects. • [Insight] Ultimately, it is undeniable that inclusive and sustainable growth do play an important role for a country to achieve high SOL. Nevertheless, it is also important for the country to consider, not only the above factors, but also other factors that make up SOL, in trying to achieve their goals.

Marking Scheme for (b)

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For an answer that <ul style="list-style-type: none"> • is developed and balanced –explains clearly how inclusive and sustainable growth may/ may not be integral to higher material and non-material living standards, and • supports analysis with relevant examples where appropriate. 	8-10
L2	For an answer that <ul style="list-style-type: none"> • lacks a depth in analysis explanation, and/or • lacks balance – only thoroughly explains how inclusive growth and sustainable growth may lead to higher living standards, and/or • lacks scope – answer focuses only on the sustained growth aspect <u>or</u> inclusive aspect of inclusive growth <ul style="list-style-type: none"> ◦ and/or only considers effects of inclusive growth on material <u>or</u> non-material living standards. 	5-7
L1	For an answer that <ul style="list-style-type: none"> • is descriptive, lacking in application of economic theory, and/or • contains serious and pervasive conceptual errors, and/or • is largely irrelevant. 	1-4
Level	Evaluation/Synthesis	Marks
E3	For an answer that uses economic analysis to arrive at a well-reasoned judgement on the view that inclusive and sustainable growth are integral to achieving higher living standards.	4 – 5
E2	For an answer that makes some attempt at a judgement on the view. However, there may be some logical flaws in the judgement.	2 – 3
E1	For largely unsubstantiated judgement(s).	1

Markers' Comments

- Many students were able to explain how an increase in sustained EG would increase MSOL and NMSOL. This was done well. They were also able to explain how inclusive and sustainable aspects could improve SOL.
- However, the anti-thesis was poorly done. Many students could not even think of one factor outside of inclusive and sustainable growth that was important to SOL or how the pursuit of inclusive and sustainable growth may compromise SOL.
- Some students even went on to compare whether inclusive or sustainable growth was more important to SOL. Although this can add towards evaluation marks, it did not serve to answer the question directly.

Section B

5	The Covid-19 pandemic resulted in unprecedented losses in employment in Singapore. Apart from the weak external demand, a plunge in international visitor arrivals and a fall in domestic consumption, the losses were also caused by the accelerated structural change away from some face-to-face services.		
	(a)	Explain the types of unemployment caused by the Covid-19 pandemic.	[10]
	(b)	Discuss the extent to which monetary policy alone will be effective in addressing unemployment caused by the COVID-19 pandemic in Singapore.	[15]

5(a) Explain the types of unemployment caused by the Covid-19 pandemic.

Suggested Answer:

Question Analysis for (a):

Command word = 'explain' → Define and give relevant details on how inclusive and sustainable growth is achieved

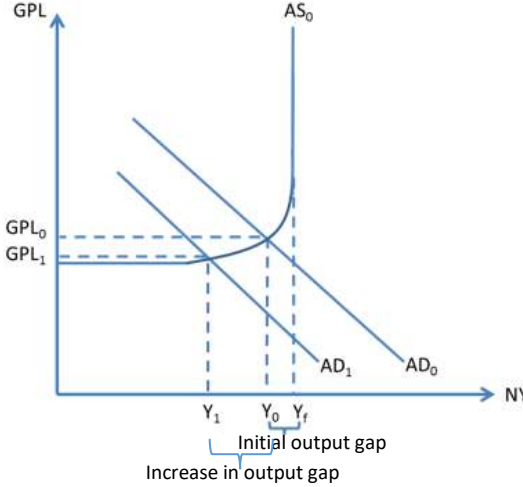
Content → Demand-Deficient and Structural Unemployment

Context → Covid-19 Pandemic

Requirement 1: Explain how the Covid-19 pandemic resulted in demand-deficient unemployment

Requirement 2: Explain how the Covid-19 pandemic resulted in structural unemployment

Requirement	Suggested answer
Intro: -Define Unemployment	Unemployment refers to a situation where people who are actively looking for work (willing and able to work) are unable to find suitable jobs. This occurs in an economy when there is only frictional and structural unemployment, but no demand-deficient unemployment.
Body I: Explain how the Covid-19 pandemic resulted in demand-	Due to the fall in domestic consumption likely due to the movement restrictions within the country. This would have caused a fall in (C). This fall in (C) would be further exacerbated by job losses due to many businesses not being able survive not being in business for an extended period, causing employees to suffer a fall in income levels, which would have further worsened (C). Local and foreign businesses are likely to

<p>deficient unemployment</p>	<p>cut back on investment spending due to pessimism over the economic outlook lowering (I). On top of this, tourism and exports (assuming imports fell to a lesser extent), have also been negatively impacted, this led to a fall in (X-M).</p> <p>As such, since all the components of aggregate demand (AD) would have been impacted, this would have led to a significant fall in AD.</p>  <p>Referring to Fig. 1, the fall in AD is represented as a leftward shift of the AD curve. With a fall in demand for goods and services, firms would experience an unplanned rise in inventory. As such, this would lead them to reduce production and also their demand for factors of production such as labour. With fewer factors such as labour hired, less factor income (e.g. wages) will be paid out. This induces a further fall in consumption expenditure and hence lower national income and thus output within the economy.</p> <p>Overall, through the initial fall in AD and the reverse multiplier effect, there is a substantial fall in output from Y_0 to Y_1 (increase in output gap). Since less output is being produced, firms will lay off workers. Hence, the Covid-19 pandemic would lead to a rise in demand-deficient unemployment.</p>
<p>Body II:</p> <p>Explain how the Covid-19 pandemic resulted in structural unemployment</p>	<p>As a result of Covid-19, many face-to-face jobs especially in the service sector were lost as businesses quicken the pace towards automation. This included jobs in the retail sector as consumers shifted a greater proportion of their shopping online since they were unable to head out to do their shopping.</p> <p>Furthermore, the Covid pandemic has accelerated job automation as employers invest in innovative technologies to improve the resiliency of their businesses. For example, Changi Airport has experimented with</p>

	the use of cleaning robots and automated guided vehicles to ferry passengers between terminals. The adoption of autonomous technology means that workers who are unable to upgrade themselves (especially elderly workers) may find their skills obsolete hence facing the risk of job losses.
Conclusion	As a result of rising unemployment, it was important for governments to come up with policies to tackle this.

Marking Scheme for (a)

Level	Knowledge, Application/Understanding and Analysis	Marks
3	Well-developed explanation on the types of unemployment that resulted due to Covid-19 using AD/AS analysis	8-10
2	Compared to L3, lacks: -scope (only explained cyclical or structural unemployment) -depth (insufficient use of economic analysis and preamble)	5-7
1	Only defined or briefly described the various types of unemployment	1-4

Markers' Comments

- This question was relatively well-done especially in terms of the demand-deficient unemployment. This only gap was that students could have used a relevant diagram (see above) to substantiate their point.
- For structural unemployment, most students did not seem to realise this point is only for declining industries. Many incorrectly said that people who used to work in SIA can't find jobs since tourism was affected by Covid and called this structural unemployment! □

5(b) Discuss the extent to which monetary policy alone will be effective in addressing unemployment caused by the COVID-19 pandemic in Singapore.

Suggested Answer:

<p>Question Analysis for (b):</p> <p>Command word = 'Discuss the extent' → Explain how much you agree and do not agree with the view</p> <p>Content → Monetary Policy, Supply Side Policy, Unemployment</p> <p>Context → Singapore</p>

Requirement 1: Monetary Policy alone will be effective in addressing unemployment caused by the COVID-19 pandemic.

Requirement 2: Monetary Policy alone will not be effective in addressing unemployment caused by the COVID-19 pandemic. Other policies will need to be adopted too.

Requirement	Suggested answer
Introduction	<p>The Singapore government aims to maintain a low rate of unemployment (2%-3%).</p> <p>In this essay, we will be discussing if monetary policy alone will be effective in addressing unemployment (both demand-deficient and structural) caused by the Covid-19 pandemic.</p>
<p>Body I:</p> <p>Explain how monetary policy would be effective in addressing unemployment caused by Covid-19 pandemic.</p>	<p>Singapore uses exchange rate policy as its monetary policy. This is due to its characteristics of being open and having limited resources. Thus, it is import-reliant and export dependent. It is also an interest-rate taker.</p> <p>Exchange rate policy would be effective in addressing unemployment caused by the Covid-19 pandemic, particularly demand-deficient unemployment.</p> <p>As explained in part (a), the pandemic would have caused a significant fall in AD resulting in a fall in output and rise in unemployment. As Singapore faces the threat of recession, it would make sense for her to depart from her usual policy stance of gradual appreciation of SGD, which is aimed at achieving price stability, and move towards depreciating the Singapore Dollar to stimulate economic growth.</p> <p>Assuming PED of Singapore's exports is greater than 1 (due to the large availability of substitutes), when the price of Singapore's exports fall in terms of foreign currency, this causes a more than proportionate increase in quantity demand of exports. Thus, export revenue increases.</p> <p>Assuming PED of Singapore's imports is less than 1 (due to Singapore's heavy reliance on imported goods), when the price of Singapore's imports rise in terms of domestic currency, this causes a less than proportionate decrease in quantity demand of imports. Thus, import expenditure increases.</p> <p>Assuming the rise in export revenue exceeds the rise in import expenditure, there would be an increase in net-exports from trade, and thus aggregate demand and national output. As firms increase production, this would cause a fall in demand-deficient unemployment.</p>

<p>Body 2: Explain the limitations monetary policy; including the limitations of using it alone.</p>	<p>As hinted at above, a depreciating exchange rate policy state might result in imported inflation. Domestic firms that rely on imported raw materials such as crude oil and sand will face a rise in their production costs forcing them to pass on the rise in costs to consumers in the form of higher prices. This could mitigate or even offset the fall in prices of exports due to the depreciation of the Singapore dollar. This is because most of Singapore's exports include high import content, thus resulting in this policy being ineffective.</p> <p>To counter this, Singapore could adopt a stance of zero appreciation (which she adopted to manage the effects of the recession during 2008), which could counter the drag on national output caused by an appreciation). At the same time, it would prevent the prices of imports from rising excessively, which would be caused by a depreciation.</p> <p>Another drawback is that exchange rate policy mainly helps to increase external aggregate demand, but the extent of this increase would likely be limited during Covid-19 since many borders are closed. Hence, Singapore should also consider fiscal policy.</p>
<p>Body 3: Explain how fiscal policy would be effective in addressing unemployment caused by Covid-19 pandemic.</p>	<p>For fiscal policy, the Singapore government provided subsidies and grants to provide temporary financial support to lower-middle-income employees and self-employed persons who experienced job losses.</p> <p>Businesses were also provided support grants such as rental relief and tax rebates. They also received additional support to uplift their digital capabilities and become more resilient through this tough period.</p> <p>These support measures helped to increase Government Expenditure (G), while preventing a fall in household income and thus domestic consumption (C). For firms who took on the challenge to innovate, there would also be an increase in (I).</p> <p>Overall, there would be an increase in Singapore's AD and real national output, thus alleviating demand-deficient unemployment caused by a fall in production.</p>
<p>Body 4: Explain the limitations of demand-management policies (including fiscal policy) alone</p>	<p>However, a similar drawback of both demand-management policies is that since Singapore has a heavy reliance on imports as well as a compulsory savings scheme, this makes her MPM and MPS large, thus making Singapore's size of multiplier small. Hence, this limits the effectiveness of both fiscal and monetary policy in tackling demand-deficient unemployment in Singapore, since the initial increase in AD would not cause a large increase in overall national output.</p> <p>In addition, both policies are only adept at addressing demand-deficient unemployment caused by Covid-19, but are unable to address the</p>

	structural unemployment that may have resulted from it. To do so, we would need to bring in supply-side policies.
Body 3: Explain how supply-side policy would be effective in addressing unemployment caused by Covid-19 pandemic.	<p>Singapore uses supply management measures by investing in its labour force through education and training. The government provides subsidies for retraining and education such as the Continuing Education and Training scheme and SkillsFuture. SkillsFuture is a government initiative that provides \$500 credit for all eligible Singapore citizens to acquire new skills or enhance existing ones. It aims to equip workers with the relevant skills, i.e., reduce the mismatch of skills to become employed in industries where labour is in demand. There are SkillsFuture courses such as training to adopt AI and machine learning to increase productivity and AI related skills.</p> <p>Hence, investing in education and training will raise workers' productivity as well as increase their job flexibility and occupational mobility. This would help Singapore emerge more strongly from global shocks such as from the Covid-19 pandemic as its workers are in a better position to move towards new sectors.</p> <p>Besides addressing structural unemployment, supply-side policies have the added benefit of addressing demand-deficient unemployment. This is so because of the increase in government expenditure that is involved when carrying out supply-side policies.</p>
Body 4: Explain the limitations of supply-side policies	<p>Nevertheless, the success of supply-side policies like education and training is dependent upon the attitude and aptitude of the Singapore labour force towards learning new skills and knowledge.</p> <p>Employers' buy-in towards skills upgrading and reskilling opportunities also matter, as some employers may be resistant to investing time to train their employees, or to let their employees use work hours to engage in training.</p> <p>Supply-side policies then to only work in the long run. This means that it may take several years before the workforce is equipped with the right skills, for them to be effectively employed in the growing industries.</p> <p>However, the Singapore government is aware of these issues. Thus, she has instilled a mind-set of lifelong learning in its population. This is because of her awareness of her vulnerabilities as a small nation.</p>
Overall Evaluation	<p>Evaluative Conclusion</p> <ul style="list-style-type: none"> • [Stand]: In conclusion, monetary policy alone is definitely not effective in addressing unemployment caused by the COVID-19 pandemic in Singapore. While it may go some way in addressing

	<p>demand-deficient unemployment, its effectiveness would be limited since it focused on external demand and most borders would be closed during the pandemic.</p> <ul style="list-style-type: none"> • To address this, the Singapore government would also need to use fiscal policy to boost domestic demand during this difficult time. • However, in terms of effectiveness, supply-side policies stand out as the most effective as a long-term policy to tackle both demand-deficient/cyclical and structural unemployment in Singapore as it ensures that Singapore's labour force remains resilient to handle any shocks. • [Insight] Ultimately, Singapore should continue to adopt a mix of policies as the problem of unemployment stems from different root causes, and thus requires different solutions to address. In addition, different policies have their advantages and limitations and thus can be used to complement each other.
--	---

Marking Scheme for (b)

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	<p>For an answer that</p> <ul style="list-style-type: none"> • is developed and balanced –explains clearly how monetary policy alone may/ may not be effective to address unemployment caused by Covid-19, and also brings in other policies and their limitations • supports analysis with relevant examples where appropriate. 	8-10
L2	<p>For an answer that</p> <ul style="list-style-type: none"> • lacks a depth in analysis explanation, and/or • lacks balance – only thoroughly explains how policies are effective to address unemployment caused by Covid-19, and/or • lacks scope – answer focuses only on demand-management policies. 	5-7
L1	<p>For an answer that</p> <ul style="list-style-type: none"> • is descriptive, lacking in application of economic theory, and/or • contains serious and pervasive conceptual errors, and/or • is largely irrelevant. 	1-4
Level	Evaluation/Synthesis	Marks
E3	For an answer that uses economic analysis to arrive at a well-reasoned judgement on the view that Monetary Policy alone will not be effective in	4 – 5

	addressing unemployment caused by the COVID-19 pandemic. Other policies will need to be adopted too.	
E2	For an answer that makes some attempt at a judgement on the view. However, there may be some logical flaws in the judgement.	2 – 3
E1	For largely unsubstantiated judgement(s).	1

Markers' Comments

- This question was relatively well-done. Students understood it needed the explanation of various policies and its limitation in the context on addressing unemployment.
- However, a handful of students worryingly did not seem to realise that monetary policy in the Singapore's context referred to exchange rate policy. Hence, they wasted time explaining interest rate policy.
- Those who did realise that monetary policy in the Singapore's context referred to exchange rate policy did not manage a good job in explaining how it worked. Many of them could explain how depreciation would increase X, but did not know what to do when it came to explaining M. Please refer to above.

6	(a)	Explain the impact of globalisation on Singapore's balance of payments position.	[10]
	(b)	Discuss whether it is advantageous for a nation to experience a growing surplus in its balance of payments.	[15]

6(a) Explain the impact of globalisation on Singapore's balance of payments position.

Suggested Answer:

Question Analysis for (a):

Command word = 'Explain' → Define and give relevant details on globalisation impacts Singapore's BOP

Content → Globalisation i.e. Trade, Labour and Capital Flows; Balance of Payments i.e. Current account & Capital and Financial account

Context → Singapore

Requirement 1: Explain how increasing trade, labour and capital flows could affect Singapore's Current account.

Requirement 2: Explain how increasing trade, labour and capital flows could affect Singapore's Capital and Financial account.

Requirement	Suggested answer
Introduction	<p>Globalisation refers to the development of an increasingly integrated global economy marked by increased flow of goods and services, capital, and labour between countries.</p> <p>This essay will explain how globalization will affect Singapore's Balance of Payments i.e. her Current account and; Capital & Financial account (KFA).</p>
<p>Body I:</p> <p>Explain how increasing trade flows could affect Singapore's current account.</p>	<p>Due to the reduction of trade barriers, this allows countries to specialise according to their area of comparative advantage. The theory states that if a country has a comparative advantage over another in the production of a good i.e. if it can produce it at a lower opportunity cost, they should specialize and trade in that good as it will allow them and their trading partners to benefit.</p> <p>If Singapore is able to produce a good at lower opportunity cost, this enables her to charge lower prices. Thus, if we assume that PED of their</p>

	<p>exports is greater than 1 (since there are many substitutes to her exports), the lower prices will result in a more than proportionate increase in quantity demanded of exports, and hence a higher export revenue (X). This would result in an improvement in the trade balance of the current account.</p> <p>In addition, competition from imports forces firms to reduce wasteful spending and become more efficient. It also stimulates greater research and development and promotes innovation. This would help Singapore produce cheaper and better products. As explained earlier, the lower prices could result in an improvement in the trade balance of the current account. Similarly, the increase in demand for exports provides an engine of growth for Singapore and likewise improve the trade balance of the current account.</p> <p>On the imports front, increasing trade provide Singapore with access to cheaper raw materials. This is important to Singapore since it has limited resources. This would allow it to improve the price competitiveness of its exports (and since SG's exports have a large import component), it would improve its trade balance.</p> <p>Nevertheless, increasing trade also increases a Singapore's vulnerability to external shocks. Due to the higher volume of trade, there is now <i>greater interdependence</i> among countries. Changes in aggregate demand in one country can send ripples throughout the global economy. For example, the fall in aggregate demand in the US due to the financial crisis led to a fall in US's national income. US residents hence reduced their purchase of domestically produced goods as well as imports from Singapore. Assuming Singapore's imports fell to a lesser extent; this would negatively affect her trade balance and thus, her current account.</p>
Body 2: Explain how increasing labour flows could affect Singapore's current account.	<p>Due to its aging population, Singapore relies heavily on a foreign workforce especially in its construction and F&B sector. With increasing labour inflows, there will also be increasing migrant remittances of earnings back to their home country. This results in a net outflow in the income flow balance, thus worsening of the current account.</p>
Body 3: Explain how increasing capital flows could affect Singapore's current account.	<p>Capital flows can be divided into 2 types, flows related to foreign direct investment (FDI) and flows related to foreign portfolio investments a.k.a. 'hot money'.</p> <p>Any repatriation of profits, interest and rent following capital outflow/inflow may cause a net outflow/ inflow of the income flow balance, thus worsening/improving the current account. In Singapore's case, given the large amount of multi-national corporations based here, as opposed to Singaporean firms based overseas, she would tend to see an outflow rather than an inflow.</p>

Body 4: Explain how increasing trade flows could affect Singapore's KFA	As explained earlier, increasing trade flows would provide an engine of growth for Singapore and along with this, result in a healthier economic prospect for Singapore. This attracts firms to invest in Singapore and thus cause an FDI (long-term capital) inflow to capitalize on the opportunities. This would lead to an improvement of BOP via the KFA account.
Body 5: Explain how increasing labour flows could affect Singapore's KFA	Another reason why Singapore is an attractive destination for foreign firms to invest in Singapore is due to its highly skilled labour force and openness to attracting foreign talent. As FDI (long-term capital) flow in to capitalize on this resource. This would lead also to an improvement of BOP via the KFA account.
Body 6: Explain how increasing capital flows could affect Singapore's KFA	<p>Apart from the reasons highlighted above which would attract entry of foreign firms (FDI) to Singapore, thus improving her KFA, Singapore's KFA is also impacted by 'hot money flows'.</p> <p>Singapore is an important financial centre. However, she is an interest rate taker. If there is an improvement in Singapore's interest rates, this would result in greater "hot money" inflows i.e. short-term capital inflows. This would improve BOP via the KFA account.</p>
Conclusion	In conclusion, globalisation could cause Singapore's BOP to improve or worsen. In the next part of the essay, we will discuss if a growing surplus is advantageous to a country.

	Knowledge, Application/Understanding and Analysis	
L3	For a <u>well-developed</u> answer with <u>at least three</u> impacts on <u>both</u> current and capital and financial accounts, and consideration of <u>all</u> features of globalisation (i.e., increased trade, labour and capital flows).	8 – 10
L2	For an <u>underdeveloped</u> answer that consider <u>at least two</u> impacts on <u>both</u> current and capital and financial accounts, and <u>some</u> consideration of the features of globalisation (i.e., increased trade, labour and capital flows).	5 – 7
L1	For an answer that lacks scope and depth, or is a mere listing of points. There may be multiple major conceptual errors.	1 – 4

Marking Scheme for (a)

Level	Knowledge, Application/Understanding and Analysis	Marks
3	For a <u>well-developed</u> answer with <u>at least three</u> impacts on <u>both</u> current and; capital and financial accounts, and consideration of <u>all</u> features of globalisation (i.e., increased trade, labour and capital flows). Context of Singapore must be used.	8-10
2	For an <u>underdeveloped</u> answer that consider <u>at least two</u> impacts on <u>both</u> current and capital and financial accounts, and <u>some</u> consideration of the features of globalisation (i.e., increased trade, labour and capital flows).	5-7

1	For an answer that lacks scope and depth, or is a mere listing of points. There may be multiple major conceptual errors.	1-4
---	---	-----

Markers' Comments

- Very few students picked this question, displaying their lack of confidence in the topic. Those who did, performed poorly.
- For those who did ok, they were better at explaining the impact of trade on current account, but were less confident for other components of current account and for capital and financial account. In general, student need to achieve greater familiarity with the account and its components.

Current Account	Current Account Status	Sign	BOP Status (BOP position = CA – KFA)
Inflow>Outflow	Surplus	(+)	Surplus Improvement
Outflow>Inflow	Deficit	(-)	Deficit Worsening
Capital and Financial Account (KFA)	KFA Status	Sign	BOP Status
Inflow>Outflow	Deficit	(-) because the assumption is that inflow assets belong to foreigners and they may eventually bring it home.	Surplus - Improvement
Outflow>Inflow	Surplus	(+) because the assumption is that outflow assets belong to us and will eventually come back to us.	Deficit- Worsening

6(b) Discuss whether it is advantageous for a nation to experience a growing surplus in its balance of payments.

Suggested Answer:

Question Analysis for (b):

Command word = 'Discuss whether' → Explain why you agree and do not agree with the view

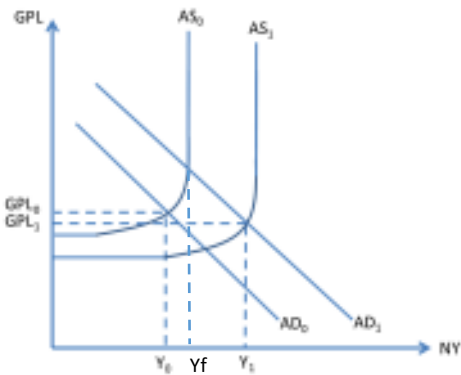
Content → Macroeconomic Goals, Balance of Payments i.e. Current account & Capital and Financial account

Context → Any, but Singapore can be used since part (a) is on Singapore

Requirement 1: A BOP surplus is advantageous for a nation in terms of its macroeconomic goals.

Requirement 2: A BOP surplus is disadvantageous for a nation in terms of its macroeconomic goals.

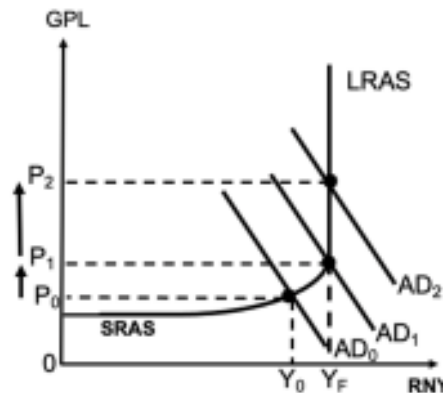
Requirement	Suggested answer
Introduction	<p>The Balance of Payments (BOP) of a country records the receipts and payments from all economic transactions between a country and the rest of world in a certain time period (usually a year). It consists of the current account (CA) and the capital & financial account (KFA).</p> <p>A positive BOP position means that there is more money flowing into than out of the country. We call this a BOP surplus.</p> <p>In this essay, we will analysis if it is advantageous for a nation to experience a growing surplus in terms of its impact on a country's macroeconomic goals.</p>
<p>Body I: A BOP surplus is advantageous for a nation in terms of its macroeconomic goals.</p> <p>Explain how a BOP surplus (CA) is advantageous to a nation –EG and employment</p> <p>Explain how a BOP surplus (KFA) is advantageous to a nation – EG and employment</p>	<p>If the nation experiences a BOP surplus due to an improvement in the balance of trade position such that it has a CA surplus, this increase in the country's net exports would lead to an increase in the level of aggregate demand. Assuming that the economy has spare capacity, the increase in AD at the original general price level creates a shortage of goods and services produced, causing an unplanned fall in inventories. This will create an upward pressure on prices, and prompt firms to increase production. The increase in production also results in a rise in income levels for factors of production which further induces an increase in consumption resulting in further expansion of output and hence a multiplied increase in national income via the multiplier process. Hence, the economy reaches a new equilibrium with higher real national income (from Y₀ to Y_f). A rise in households' purchasing power suggests that the material standard of living in the country has improved.</p> <p>Furthermore, since labour is a derived demand, firms hire more workers since more output is produced reducing demand-deficient unemployment.</p> <p>If the nation experiences a BOP surplus due to a net inflow of foreign direct investment (FDI) via the KFA account, this can lead to an increase in AD due to increase investment on machinery and equipment. This rise in quantity of capital stock would also led to a rise in the country's productive capacity causing a rise in LRAS.</p> <p>Due to the rise in actual growth from the increase in AD and the rise in potential growth from the increase in LRAS, sustained growth is achieved. This is represented by an increase in real GDP from Y₀ to Y₁, with only a slight increase in GPL.</p>

<p>Explain how a BOP surplus (KFA) is advantageous to a nation – Managing imported inflation</p> <p>Evaluation</p> <p>Explain how a BOP surplus (KFA) is advantageous to a nation – accumulating foreign reserves</p>	 <p>When a nation experiences BOP surplus, this also implies that there will be an appreciation of its currency. Since there is a BOT surplus and/or more investors seeking to invest in the nation, there will be a rising demand for the currency. A stronger currency means that the nation will find foreign imports lower in price. Hence, this can help to rein in imported cost-push inflation.</p> <p>Based on the above analysis, we can see that a BOP surplus is especially advantageous to a nation like Singapore that relies strongly on trade and FDI as an engine of growth, but is also reliant on foreign imports due to its lack of resources.</p> <p>As explain above, a BOP surplus implies there is a rise in demand for the nation's currency; this in turn implies that foreigners will be increasing supply of their currency in order to pay for/demand our currency.</p> <p>Hence, this allows the nation to accumulate foreign currency in its reserves. This is especially important if the nation is using a managed/ fixed exchange rate system. The accumulated foreign reserves would allow the country to intervene and manage its exchange rate where the need arises to ensure stability not only in the external sector but also create confidence in the strength of the country's currency.</p> <p>Thus, an increasing BOP surplus, allowing the accumulation of foreign exchange reserves, which can be used to achieve currency stability, is especially crucial for such nations.</p>
<p>Body 2: A growing BOP surplus is not advantageous for a nation in terms of its</p>	<p>However, despite the advantages of a BOP surplus as explained above, this does not mean a 'growing surplus' will be good.</p>

macroeconomic goals.

Explain how a BOP surplus is not advantageous to a nation – demand-pull inflation

As explained in the earlier part of my essay, a rise in net exports or FDI can lead to a BOP surplus, thus, rise in economic growth, and fall in unemployment. However, this is only true if there is spare capacity in the economy. As the economy approaches full employment at Y_0 as seen in the figure below, firms face intense competition for factors of production and this would increase the unit cost of production. General price level will increase from P_1 to P_2 , as a result of the increase from AD_1 to AD_2 .



Thus, if the nation is operating near full employment, a BOP surplus due to these reasons has the danger of causing the economy to experience a rise a demand-pull inflation.

Explain how a BOP surplus is not advantageous to a nation – Fall in Future SOL

Also, if the BOP surplus is due to excessive FDI, then this may result in a **deficit in the current account in the future. This is because investment income that is earned from FDI is an outflow via the CA when foreigners send the earnings back abroad.** Hence, this will lower the standard of living of future generations.

Explain how a BOP surplus is not advantageous to a nation – Retaliation

In addition, **since one country's surplus is another country's deficit, a growing BOP surplus experienced by one nation would imply a growing deficit incurred by its trading partners. This may to retaliation** by its trading partners in the form of protectionism measures, such as tariffs or import controls. This is especially so if the other countries feel the surplus is a result of unfair reasons such as an undervalued exchange rate which has caused foreign imports to be more competitive than its domestic goods. This was the case when the US threatened protectionism against China in 2019 when it accused China of having a strong BOT surplus due to an undervalued Yuan.

	Such measures reduce the exports of the country facing an increasing BOP surplus, which can lead to a contractionary effect on its economy.
Overall Evaluation	<p>Evaluative Conclusion</p> <ul style="list-style-type: none"> • [Stand]: In conclusion, although a BOP surplus has many advantages, whether a growing surplus is advantageous depends on the state of its economy, as well as the nature of its economy. <ul style="list-style-type: none"> ○ Nature of its economy – For economies like Singapore that rely strongly on exports and investment for growth, and are import-dependent, an increasing BOP surplus is important to drive the economy and to accumulate foreign reserves to manage its foreign exchange. ○ State of Economy – However, the growing surplus needs to match by a growing productive capacity in order to avoid over-heating. • [Insight] Ultimately, it is undeniable that a growing BOP surplus has its advantages. However, ultimately it is also important for the nation to also balance the achievement of its other macro goals with strong policies. For example, through the use of strong supply side policies to strengthen its labour and infrastructure, it can promote actual and potential growth, as well as BOP surplus due to FDI and BOT surplus.

Marking Scheme for (b)

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For an answer that <ul style="list-style-type: none"> • is developed and balanced –explains clearly how a growing BOP surplus may or may not be advantageous, and • supports analysis with linkage to ‘nation’ examples where appropriate. 	8-10
L2	For an answer that <ul style="list-style-type: none"> • lacks a depth in analysis explanation, and/or • lacks balance – only thoroughly explains how a growing BOP surplus may or may not be advantageous, and/or • lacks scope – answer focuses only on CA aspect <u>or</u> KFA aspect of BOP 	5-7
L1	For an answer that <ul style="list-style-type: none"> • is descriptive, lacking in application of economic theory, and/or • contains serious and pervasive conceptual errors, and/or • is largely irrelevant. 	1-4
Level	Evaluation/Synthesis	Marks
E3	For an answer that uses economic analysis to arrive at a well-reasoned judgement on the view that although a BOP surplus has many advantages, whether a growing surplus is advantageous depends on the state of its economy, as well as the nature of its economy.	4 – 5
E2	For an answer that makes some attempt at a judgement on the view. However, there may be some logical flaws in the judgement.	2 – 3
E1	For largely unsubstantiated judgement(s).	1

Markers' Comments

- The continuation of (b) was that it was also poorly done- due to unfamiliarity with BOP and lack of time. Students who did ok were able to explain the thesis points well, but displayed less familiarity with the anti-thesis points on why a growing surplus may not be good.

[End of Package]