Candidate Name:

Class

2022 Preliminary Exams

Pre-university 3

ECONOMICS

Paper 2 Essays

Additional Materials: Answer Booklet

READ THESE INSTRUCTIONS FIRST

Write your name and class on all the work you hand in. Write in dark blue or black pen on both sides of the paper. You may use a soft pencil for any diagrams or graphs. Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer three questions in total, of which one must be from Section A, one from Section B and one from either Section A or Section B.

You are reminded of the need for clear presentation in your answers.

An answer booklet will be provided with this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional paper, ask the invigilator for a continuation booklet.

The number of marks is given in brackets [] at the end of each question or part question.





9757/02

14 September 2022 2 hours 15 minutes

Adm No

Answer three questions in total.

Section A

One or two of your three chosen questions must be from this section.

1. When Malaysia announced it will ban exports of fresh chicken from June 1st given domestic shortages, Singapore felt a sense of unease given that chicken is a common ingredient in Singapore cuisine. Many people began to stock up on chicken. About 34 per cent of our chicken imports come from Malaysia.

Source: CNA, 12 June 2022

- (a) Explain how the export ban will lead to shortages and a sharp rise in prices of fresh chicken in Singapore. [10]
- (b) Assess the strategies that the Singapore government could adopt in response to Malaysia's export ban of fresh chicken. [15]

Suggested Answer

Part (a)

Question Requirements

Command words: Explain

Content/concept words: Sharp rise in prices due to Demand and Supply Factors / PED and PES

Context: Fresh chicken in Singapore

Requirement	Suggested Answer
Introduction	The ban exports of fresh chicken and the stocking up of chicken, coupled with the inelastic supply and demand will cause the price of chicken to rise sharply.
Body 1:	The supply of chicken refers to the various quantities of chicken producers are willing and able to offer for sale at various prices over a period of time, ceteris paribus/
Export ban fall in Supply with PED < 1	Since Malaysia supplies about 30% of Singapore's chicken, the implementation would decrease the supply of chicken, this will cause the price of chicken rise.
	The rise in price of chicken is also accentuated by the price inelastic demand for chicken in which price elasticity of demand (PED) measures the degree of responsiveness of quantity demanded of a good to a change in its own price, ceteris paribus.

	The demand for chicken is price inelastic, since there are few substitutes for chicken, and is also a necessity as it is a common ingredient in many dishes in Singapore cuisine.
	This fall in supply would lead to a rise in price and fall in qty traded. Due to the inelastic demand, the rise in price will lead to a less than proportionate decrease in quantity demanded. Hence, the price will rise to a large extent.
Body 2:	The demand for chicken represents the various quantities of a good or service that consumers are willing and able to buy at various prices over a given period of time, ceteris paribus.
Stocking up of chicken Rise in demand with PES < 1	With the announcement of the export ban, households and businesses may anticipate price increases in the future, and may increase their demand for chicken now.
	The extent of an increase in price can be further explained using the price elasticity of supply (PES) that measures the degree of responsiveness of quantity supplied of a good to a change in its own price, ceteris paribus.
	The supply for chicken is price inelastic, due to the time taken for the chicken to grow up to be of eating size.
	This rise in demand would lead to a rise in price and rise in qty traded. Due to the inelastic supply, the rise in price will lead to a less than proportionate rise in qty supplied. Hence, the price will rise by a large extent.
Body 3	
Body 3 Illustrate and explain with a DD/SS diagram	Price of chicken P_1 P_1 P_2 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_1 Q_2 Q_2 Q_2 Q_1 Q_2

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	With reference to Figure above, supply decreases from S_0 to S_1 , along a price inelastic demand, ceteris paribus, a rise in demand from D_0 to D_1 along a relative price inelastic supply curve. When supply decrease and demand increase, at the original price, quantity demanded is greater than quantity supplied, Q3 > Q2, leading to a shortage of chicken , denoted by Q3Q2. This shortage will lead to an upward pressure on the price. As price of chicken rises, qty demanded will fall and quantity supplied will rise. The price adjustment will stop until qty demanded = qty supplied. Thus, the price of chicken increases sharply from P_0 to P_1 .
Conclusion	The fall in supply and the rise in demand for chicken, with the inelastic demand and supply will cause the price of chicken to rise sharply.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	 For an answer that shows well-developed explanation Considers both demand and supply factors Addresses the sharp increase in price (by combined shifts and elasticity concepts) Consider shifts but only 1 elasticity (max 8) 	8-10
L2	 For an answer that shows under-developed explanation Lacking clarity and accuracy at times Does not address the sharp rise in price clearly Or, an answer that lacks scope Only considers DD or SS shift 	5-7
L1	 For an answer that shows limited knowledge with listing of points, or unexplained statements Many conceptual errors 	1-4

Part (b) Assess the strategies that the Singapore government could adopt in response to Malaysia's export ban of fresh chicken. [15]

Suggested Answer

Question Requirements		
Command words: Assess	2-sided with evaluation	
Content/concept words: strategies and the limitations		
Context: Singapore		

Requirement	Suggested Answer
Introduction	Singapore government is concerned about efficiency and equity, since chicken is widely used in many homes and food and beverage establishments. There are 3 possible strategies. They could implement a price ceiling, subsidize eggs, or to diversify chicken imports.
Thesis: Price	A price ceiling refers to government-imposed price above which firms
ceiling	are not legally allowed to charge. It is the maximum price set by the government below the market equilibrium price which is deemed too high. For it to be meaningful, it is set below the market equilibrium price. Singapore government may implement price ceilings when they want to prevent prices of chicken from rising beyond a certain level.
	Price of chicken
	O Qss Qe Qdd D Qty
	With reference to the fig above, before the implementation of the
	establishes the equilibrium price P and quantity Q With an
	effective price ceiling being set at Pmax, the quantity supplied falls to

	Qss and the quantity demanded rises to Qdd, resulting in a shortage of of QddQss. This will lead to a lower price of Pmax and is more affordable as compared to the initial equilibrium price of Pe.
Anti-Thesis: Limitation of price ceiling	However, the price ceiling will lead to shortages of Qdd-Qss. There is also welfare loss to the society as indicated by the area XEW. Where customers are unable to buy enough in the market, there will be emergence of black market. This happens as some firms may not want to sell all of their goods openly at the artificially low price. Hence, they might secretly sell to people who are willing to pay a higher price in order to earn higher revenue. Assuming that producers are able to sell Qs illegally, then based on the demand curve, consumers are willing and able to pay P1. Hence, the price may reach as high as P1 as shown in Figure 1. This price level, P1, is even much higher than the pre-price ceiling equilibrium price, Pe.
Thesis: Subsidy	The government may also give out subsidy. With reference to Figure below, the initial equilibrium price and output are OP1 and OQ1 respectively. When a subsidy is granted on chicken (assuming subsidy is given to producers), the supply curve will shift downwards by the full amount of the subsidy granted, as the subsidy can be used to compensate part of the production cost and the profit level from selling one unit of chicken increases. At OP1, there will be an excess supply of the good. This will cause the price to fall, and quantity exchanged to rise. These changes will occur until a new market equilibrium is attained at E2 with a lower equilibrium price, OP2 and a higher equilibrium quantity, OQ2.
Anti-Thesis: Limitation of price ceiling	Due to the loss of govt expenditure (Area P2P3CE2) and despite gain in consumer surplus (Area P2P1E1E2) and producer surplus (Area P3CE1P1), there is overall loss of welfare to the society (E1E2C).
	The provision of subsidy would mean that the government needs to forgo expenditure in other governmental projects (opportunity cost is incurred). In order to finance the subsidies, the government may have to impose high tax rates on citizens. This may in turn have

Thesis: Diversify chicken imports to increase SS	disincentive effects on work, investment and hence adverse effects on the economic growth of the country. The Singapore government started looking for other sources of chicken with the ban to make sure Malaysia is not our only source of imported chicken and went on to get chicken from Indonesia. This will cause supply of chicken to rise and price to fall, making it more affordable.
Anti-Thesis: Limitation of diversifying chicken imports	However, there will be higher transport costs due to the longer time taken for the chicken to arrive in Singapore from Indonesia. This will also lead to freshness issues.
Overall Evaluation	The choice of which strategy that the government can implement depends on whether the country is food-producing or food-importing. Imposition of price ceiling and production subsidies will be appropriate for countries that are food-producing, such as China, United States and Brazil as they are able to influence the price of the food that they are selling domestically or exporting, but food-importing countries like Singapore will not be able to influence the price set by their exporters through a price ceiling. Furthermore, production subsidies will have little impact in curbing rising food prices for food-importing countries. Singapore only produces about 10% of the food that she consumes. Any production subsidies given to the food producers will have limited effect in bringing down food prices if imported food prices are rising. Hence, Singapore government should diversify the import market and look for other markets to import chicken from.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	A balanced and well-developed answer on the policies used by the government to address rising price of chicken, with relevant use of examples.	8 - 10
L2	An under-developed, balanced answer on polices deal with rising price of chicken, 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	A well-reasoned conclusion that clearly addressed the question.	4 - 5
E2	Some attempt to make conclusive judgements about the strategies but not well substantiated and rather generic.	2 - 3
E1	A judgement that is unsupported.	1

- 2. Global military expenditure has surpassed \$2 trillion per year for the first time, and looks set to rise further as European countries beef up their armed forces in response to Russia's invasion of Ukraine. Closer to home, the annual spending by the Singapore government on early childhood education sector is set to double.
 - (a) Explain why price signals will not lead to efficient allocation of resources for national defence and education. [10]
 - (b) Discuss the extent to which government policies can address the above sources of market failure. [15]

Suggested answer

Part (a)

Question Requirements

Command words: Explain

Content/concept words: sources of market failure for public and merit goods

Context: national defence, education

Requirement	Suggested Answer
Introduction	Market failure occurs when the free market is unable to allocate resources efficiently. It occurs due to positive externalities and public goods. Positive externalities occur when production or consumption imposes external benefits enjoyed by third parties, who are neither the buyers nor sellers, for which no compensation is made. Positive externalities occur in the consumption of education. It is a merit good. For national defence, it is a total market failure as the market does not produce it at all.
Body 1:	Explain that the good is non-excludable
Total market failure – public goods	National defence is non-excludable. This is because when there are armed forces in a country that deters other countries from attacking it, everyone in the country enjoys the same level of safety from invasion. It is not possible for the Singapore Armed Forces (SAF) for example, to exclude non-payers specifically from the protection.
	market
	The property of non-excludability gives rise to free rider problem. The free rider problem is a situation where it is possible for a person to consume a good without having to pay for it. For example, even if you do not pay taxes, the SAF cannot exclude you from its protection. So, you would still enjoy the protection without having to pay for it (i.e., you can enjoy a free ride). The possibility of free-riding weakens the incentive for consumers to offer to pay for the good. Since demand for a good is the ability and willingness to pay for a good, when there

	is no willingness to pay for the good, there would be no demand for the good. Since there is no expression of demand, it is impossible to charge a market price for the good. The good would not be produced at all by the private sector. Hence, we say that there is a missing market for the good if left to the market. Explain that the good is non-rivalry in consumption
	national defence services are provided, it can be consumption. Once national defence services are provided, it can be consumed by everyone within the national border. If an additional person enters the border, this person's consumption of the national defence services does not reduce the amount of protection or security available to other residents. In other words, the supply of national defence services, once provided, is not depleted by an additional user.
	Implication of non-rivalry on the provision of the good by the market
	As a result of non-rivalry, the marginal cost of providing protection to an additional user is zero, MC=0. Once an army is formed, the total cost of defending the country is the same regardless of the number of persons the army has to protect. There is no extra cost involved for defending an additional person. To achieve allocative efficiency in the provision of a good, consumers should pay a price equal to the marginal cost of serving an additional user (P = MC). Since MC = 0, national defence services should be made free of charge to all individuals to achieve an optimal consumption level. However, this means that no private firm in a free market can supply it profitably if required to do so at the optimal output. Thus, the free market fails to allocate resources to produce such goods.
Body 2:	Education generates positive externalities. For example, the
Partial market failure – education	consumption of education services not only raises people's income but the increased knowledge and skill may increase the productivity of the entire economy.
	The positive externalities cause MSB to diverge from MPB in the figure below as MSB = MPB + MEB. We assume that there are no negative externalities in the education market, i.e., MEC = 0. Thus, MSC = MPC.
	The market equilibrium quantity will be at Qe 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 maximized is at Qs where MSB = MSC. This is because if MSB > MSC, social welfare can be increased by producing more while if MSB < MSC, social welfare can be increased by producing less.
	Since Qe is less than Qs, there is underconsumption of education.

	For the quantity in between Qs and Qe, MSB is more than MSC. This causes a deadweight loss of the shaded area as social welfare is not maximized. Hence, the market fails due to allocative inefficiency.
	Price/Benefit/Cost
	^
	MPC=MSC
	Ps
	MFB MSB = MPB + MFB
	Pe
	МРВ
	Qty of education
	Qe Qs
A	
Conclusion	Hence, price signal will not lead to efficient allocation of resources for
	public goods and education.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Developed and well-contextualized explanation of goods that generate positive externalities and public goods	8-10
L2	 Undeveloped explanation of goods that generate positive externalities and public goods Developed explanation of goods that generate positive externalities or public goods 	5-7
L1	Smattering of valid points	1-4

Part (b) Discuss the extent to which government policies can address the above sources of market failure. [15]

Suggested Answer

Question Requirements

Command words: Assess 2-sided with evaluation

Content/concept words: policies to address the 2 sources of market failure and limitations

Context: defence, education

Requirement	Suggested Answer
Introduction	Government intervention is needed when there is market failure. Market failure happens when the market is not producing where MSC=MSB, which is the social optimum.
Thesis: Government policy to address market failure due to public goods	In the case of public goods, since the market would not produce the good at all, the government must take over the role of provision. They can do so through directly being the provider (e.g., Singapore government directly running the army and providing national defence) or pay private firms to do so (e.g., countries that hire private contractors to carry out the army's work). The government provides these public goods free of charge and finances them through collecting taxes. The public goods are provided at zero price for two reasons.
	Firstly, it is allocatively inefficient to charge a price for the public good because that would discourage some people from using it. This is because since it does not cost anything to provide the good to an additional user (recall that non-rivalry in consumption meant that MC = 0), the more users there are, the more net benefits are generated. Hence, the ideal case would be to have as many users as possible. This is accomplished when the good is provided for free (price = 0).
	Secondly, it is not possible to charge a price for the public good because of the free-rider problem anyway.
Evaluation of policy	Since the market does not produce the good, government provision is the only way the good would be provided. However, there are disadvantages. Government must decide what and the amount of public goods to provide (e.g., to maintain a national reserve or to spend on national defence, and how many tanks should we purchase for national defence). Governments must use economic criteria to decide which public goods to provide with the greatest social benefits for a given amount of money spent on providing the goods. However, it is difficult to calculate the expected benefits as such goods have no price
	To fund public goods, governments may need to tax more or borrow money. Too high a level of taxation can have disincentive effects on work and investment which may lead to a slowing down of national income and economic growth. If the government borrows to fund the provision of public goods, it may 'crowd-out'
Thesis: Government policy to address market failure due to positive externality - subsidy	To correct positive externalities, the government can give an indirect subsidy to producers that is equal to the external benefit. Governments can give a subsidy per unit to childcare operators. Producers can pass on the subsidy to consumers in the form of lower prices. Hence the subsidy lowers the marginal private cost of producers/consumers, shifting the MPC curve downwards to MPC* = MPC + indirect subsidy.

	Price/Benefit/Cost MPC=MSC MPC*=MPC + indirect subsidy Ps Pe Pe Pe* MEB at Qs MPB
	Qe Qs Qty of education
	With a lower MPC, the new market equilibrium quantity (where MPB=MPC) will be higher than Qe (without intervention). If the amount of subsidy is equal to the MEB at Qs, which is the monetary valuation of the benefit enjoyed by third parties, we say that the subsidy internalises the external benefit as producers are now paid to produce for this benefit whereas previously the benefit would only have been enjoyed by third parties. The new market equilibrium quantity (where MPB=MPC*) will be at the socially optimal quantity Qs (where MSB=MSC). The under-allocation of resources to education is thus corrected and the deadweight loss is eliminated, achieving allocative efficiency.
Evaluation of policy	Subsidies are a market-based policy that does not displace the price mechanism. It still allows the market forces of demand and supply to work. The market equilibrium quantity can still rise or fall with changes in demand or supply conditions. However, the governments face difficulty in estimating the MEC to determine the correct amount to tax to correct market failure due to negative externalities, governments also have imperfect information about the monetary value of the MEB. If the value is assessed wrongly by the government, giving too much or too little subsidies would still result in allocative inefficiency.
Thesis: Government policy to address market failure due to positive externality – legislation	The government could set rules or enact laws to ensure that a certain amount of goods with positive externalities are consumed/produced. Fear of punitive measures/penalties will ensure that people abide by the legislation and consume the socially efficient level of the good. This forces the quantity consumed to increase from original the market equilibrium of Qe (where MPB = MPC) in the diagram below to Qs (or somewhere closer to Qs). In Singapore, there is the compulsory education law in Singapore which makes it mandatory for parents to enroll their children in primary schools.
Evaluation of policy	Such compulsory consumption laws are easy to understand. However, compulsory consumption laws displace the market mechanism. Once it is in place, the quantity of the good consumed can no longer change in

	response to demand and supply changes. The socially optimal output would increase but the legislated quantity would not automatically increase. In this case, we say that the legislation has displaced the market mechanism. As with any form of legislation, there could be high monitoring and enforcement costs in ensuring compliance. High costs are incurred in sending government officials to households and firms to check and monitor that laws are being followed.
Overall Evaluation	For public goods like National Defence, since there would be complete market failure, provision has to be provided by the government. However, more data needs to be collected to determine whether the current provision is optimal. With the tense relationship between the major countries, China and US and the on-going war between Ukarine and Russai, more countries are beginning to spend more on National Defence. For education, if the source of market failure is positive externality, then subsidy or legislation will work well. However, If there is imperfect information, the government will need to provide education / campaign to address this issue. In addition, it also depends on the context of the country. For developed countries, imperfect information might not be much of an issue as parents generally know the importance of education. In this case, subsidy and legislation might work better

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Answer shows in depth knowledge of at least 2 policies to achieve allocative efficiency in the market for education and national defence. Each policy is well- evaluated, supported by sound economic analysis.	8 - 10
L2	Answer shows some knowledge of at least 2 policies to achieve allocative efficiency in the market for education and national defence. There may be some attempt to evaluate the policies to show balanced arguments which are supported by sound economic analysis. Answer may be undeveloped.	5 - 7
L1	Descriptive answers lacking in tools of analysis.	1 - 4
	Evaluation	
E3	Critically evaluates the various policies to achieve allocative efficiency in the market for education and national defence Synthesises economic arguments to arrive at well-reasoned judgements on the effectiveness of policies.	4 - 5
E2	Some attempt at evaluation or a summative conclusion. Relevant to the question but judgements may not focus on the effectiveness of policies.	2 - 3
E1	Unsupported evaluative statement(s) or judgements. One that lacks explanation.	1

3. China has joined Europe and US in curbing the power of big technology companies. China has increased scrutiny on the technology sector and introduced a slew of new regulations that has tried to rein in the power of its domestic giants like Alibaba Group Holding Ltd and Tencent Holdings Ltd.

Source: CNBC, 17 May 2021

- (a) Explain the market structure that the technology companies are in and how it will affect their pricing and output decisions. [10]
- (b) Discuss the extent to which consumers and the society will benefit when there is greater competition in the technology industry in China. [15]

Suggested answer

Part (a)

Question Requirements

Command words: Explain

Content/concept words: market structure of technology companies Oligopoly, price and output decision

Context: technology companies

Requirement	Suggested Answer
Introduction	Firms in such an industry operate in an oligopolistic market. The key characteristics of such a market is mutual interdependence between the few dominant firms in the industry, where the actions of one firm will directly impact the other firms in the industry and also high barriers to entry.
Body 1: Market structure – Oligopoly	The technology industry is dominated by a few large firms, like Alibaba Group, Tencent Holdings Ltd. There are high barriers to entry for new firms to enter. For e.g the Chinese laws on intellectual property are one of the biggest China market entry challenges. Local and foreign companies face many issues with the country's IP regime relating to trade secrets, irregular applicability, procedural matters, etc. In addition, the existing big technology companies will enjoy a lower average cost compared to new entrants as the new entrants would have a smaller scale of production. This allows the incumbent firms to price lower and prevent the new entrant from entering the market. Hence, these firms have high market power and are able to set high prices. Based on the above, the technology firms are likely to be in a oligopolistic market structure.
Body 2: The pricing and output decision	The big technology firms compete with one another. For competitive oligopoly, each firm faces its own demand curve which is only a part of the market demand. Each oligopolist's demand curve is downward sloping and fairly inelastic due to the market power of each

	technology firm. The oligopolist can only choose the price to set or the output to produce but not both. The demand curve for an oligopolist is also its AR curve and its MR curve will lie below its AR curve. Po Po Po Po G Figure 1: Equilibrium price and output for an oligopolist
	With reference to Figure 1, profit is maximised when MC = MR at P0 and Q0. At any quantity less than Q0, MC < MR. Thus, producing an extra unit of output adds more to revenue than to cost. Total profit will increase if more is produced. As long as MR exceeds MC, profits can be increased by increasing production. At any quantity more than Q0, MC > MR. Thus, producing one less unit of output will create more cost savings than foregone revenue. Total profits will increase if less is produced. As long as MC exceeds MR, profits can be increased by decreasing production. Hence, P0 and Q0 where MC = MR is where profit is maximised.
Price rigidity in a competitive oligopolistic market structure	Lower levels of competition also give rise to mutual interdependence and hence. This is because with fewer firms in the industry, the actions of one firm would have a larger effect on any of the existing firms and vice versa. Once a price has been set, oligopolists do not change their prices because of the rival consciousness brought about by mutual interdependence. If an oligopolist, Alibaba considers reducing the food delivery fees, he knows that his rivals like Tencent will also react by reducing their prices. Thus, his reduction in price will only lead to a less than proportionate increase in quantity demanded of his product as few customers would switch over from his rivals. This would cause his TR to decrease. Hence, he would not decide to decrease his price. If he considers increasing his price, he knows that his rivals will maintain their prices in response. Thus, his increase in price will lead to a more than proportionate decrease in quantity demanded of his product as many of his customers would switch over to his rivals. This would also cause his TR to decrease. Hence, he would not increase or decrease his price. Since an oligopolist would not increase or decrease his price, there will be price rigidity.
LR profits level	In the short run, an oligopolist can earn subnormal, normal, or supernormal profits. In the long run, oligopolist can still earn supernormal profits.

	Existing oligopolist are earning supernormal profits in the short run, new firms attracted by the supernormal profits will want to enter the industry but are unable to do so as there are high barriers to entry. For example, in the technology firms, there are high set up costs involved such as data centres and storage facilities that prevents new firms from entering. Hence, an oligopolist makes supernormal profits in the long run.
LR profits level	In the short run, an oligopolist can earn subnormal, normal, or supernormal profits. In the long run, oligopolist can still earn supernormal profits. Existing oligopolist are earning supernormal profits in the short run, new firms attracted by the supernormal profits will want to enter the industry but are unable to do so as there are high barriers to entry. For example, in the technology firms, there are high set up costs involved such as data centres and storage facilities that prevents new firms from entering. Hence, an oligopolist makes supernormal profits in the long run.
Conclusion	The technology firms are oligopolistic and are able to set high prices and because of the mutual interdependence, the prices set are rigid.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that shows thorough knowledge and appropriate application of the technology firms to the choice of market structure. Answers explains how prices and output are determined in the market.	8-10
L2	For an under-developed answer that shows some knowledge and application of the technology firms to the choice of market structure.	5-7
L1	For an answer that shows some knowledge of the choice of market structure.	1-4

Part (b) Discuss the extent to which consumers and the society will benefit when there is greater competition in the technology industry in China. [15]

Suggested Answer

Question Requirements

Command words: Discuss

Content/concept words:

Thesis: Increasing competition is likely to be beneficial to society

Antithesis: Increasing competition is likely to be costly to society.

Context: Technology industry

Requirement	Suggested Answer
Introduction Explain terms: Increasing competition, Beneficial/	Increasing competition in this market structure would mean allowing or making it easier for more firms to enter this industry. It could mean moving from an oligopolistic market structure where there is domination by the three supermarkets to one where other firms can enter the industry and compete with these three. If the entry to this industry becomes increasingly easy, the industry could become monopolistically competitive in the long run.
Costly To society	Whether this is likely to be beneficial or costly to society would be discussed in terms of whether society would be better off or worse off in terms of prices they pay for the goods due to improvement in efficiency, the choices/variety of goods they have and whether there is reduction in inequity.
Body 1:	
Thesis: Increasing competition is beneficial to society:	Firstly, when there is increasing competition in this market structure, there will be fall in allocative inefficiency. Allocative efficiency is achieved when the value that consumers place on the good or service (reflected in the price they are willing and able to pay) equals the marginal cost of the scarce factor resources used up in production. Hence, it occurs when P=MC.
Increase in allocative efficiency lower prices, higher output	The nature of oligopolies means that with the downward sloping demand curve that each firm faces, they would not be allocatively efficient.
	Fig 1: Equilibrium price and output of an oligopolist With reference to Figure 1, initially with D=AR and MR, profit is maximised when MC = MR where price and output are at P ₀ and Q ₀ . At the profit-maximising level of output, the price is always above the MC.

	P=MC occurs at Qs level of output but only Qo is produced by the oligopolist. Hence, the shaded area A shows the deadweight loss which is caused by under-production of the good. The oligopolist's price exceeds its marginal cost ($P_0 > MC_0$). Since consumers value the last unit of the good (measured by price) more than it costs to produce (measured by marginal cost), increasing the output can increase the welfare of the consumers.
	When there is increasing competition into the market, the demand (D_1) and MR (MR ₁) of the firm becomes more elastic as their share of the market decreases. Profit is now maximized when MC=MR ₁ at P ₁ and Q ₁ which are both lower than the original price and output. Q ₁ is nearer Qs', the output that society desires. The allocative inefficiency of the oligopolist (P>MC) is lessened with increasing competition, showing a reduction in the deadweight loss (Area B). [Alternative explanation: The difference between price and MC reduces (P ₀ C to P ₁ F).]
	Hence, increasing competition is beneficial to society as consumers now pay a lower price, they can enjoy cheaper goods and services and consumer surplus increases. Although allocative efficiency is still not achieved, the inefficiency and deadweight loss has been reduced. Hence, increasing competition into the supermarket industry is likely to allow consumers to enjoy lower prices.
Body 2:	Secondly, increasing competition is beneficial to society as it reduces inequity in the society. Inequity occurs when there is a lack of fairness in the distribution of economic welfare.
Increasing competition is beneficial to society: Reduction in inequity	Oligopolists can earn supernormal profits even in the long run because of high barriers to entry. As firm owners were profiting at the expense of consumers, there is inequity. With increasing competition, for e.g the entry of another e-commence company Pinduoduo has reduced the market share of Alibaba. Hence Alibaba earns lesser profits in the long run. They are less likely to profit at the expense of consumers. This will improve the income distribution in the economy. Hence, increasing competition can reduce inequity and therefore this is beneficial to society.
Body 3: Thesis: Increasing competition is beneficial to society:	Lastly, increasing competition may help to eliminate X-inefficiency and bring about productive efficiency in the market. X-inefficiency is the situation when firms produce above the lowest possible cost at a given level of output i.e. above the LRAC. Productive efficiency occurs when firms are producing on the LRAC, indicating that they are producing at the lowest possible cost.
Increase in Productive efficiency lower cost lower price	The lax cost controls (e.g. overstaffing and spending on unnecessary equipment) in oligopolies could happen because of the lack of competitive pressure resulting in complacency since Oligopolists are able to earn supernormal profits in the long run.
	Hence, increasing competition into this market would mean that firms will be more focused on cost controls as that could affect their profit margins. Higher level of competition forces firms to be productive and

	cut out wasteful spending. This is beneficial to society as productive efficiency implies lowest a possible cost of production which may bring about a lower price for consumers.
Body 4: Thesis: Increasing competition is beneficial to society: More choice	Moreover, increasing competition gives society more choice and variety of the product. Choice is beneficial for society as they are not 'forced' to buy from a few sellers. With the entry of Pinduoduo and Douyin, comsumers have more options to choose from and need not just buy from Alibaba e-commence platform. This improves society's welfare.
Body 5 Antithesis: Increasing competition is costly to society : Increase in cost of production : inability to reap economies of scale higher cost of production higher price of good	On the other hand, increasing competition in this market structure may also be costly to the society. Firstly, increasing competition may result in higher prices of goods for the consumers as it limits the amount of internal economies of scale that could be reaped. As there are only a few firms producing a product, each oligopolist operates on a large scale and is able to reap internal economies of scale (cost savings). However, with increasing competition, the market is now shared with more firms, each of which would have a smaller share of the market. The smaller scale of production means that the firms may not be able to reap internal economies of scale (cost savings) Hence, firms may produce at a higher cost of production than the oligopolists. This may therefore result in higher prices of goods as internal economies of scale are not reaped. Moreover, it could also be argued that since oligopolists do not engage in price competition, it is in their own interests to keep their costs low so as to maximize their profits. They would have a strong incentive to cut out wasteful spending, making them productively efficient.
Body 6: Antithesis: Increasing competition is costly to society : no funds to engage in dynamic efficiency less chance of development of goods less product variety	Secondly, increasing competition may mean that dynamic efficiency has to be forgone. Dynamic efficiency is affected by whether firms have the ability and incentive to conduct R&D to develop and innovate products and or process, leading to better products/lower costs for consumers. Increasing competition may lead to more but smaller firms which would not be able to earn as much profits in the long run, as the oligopolist. This would limit the amount of funds (as well as lower the incentive) each firm has to engage in R&D. This inability or lack of incentive for development or innovation of products can be seen as 'costly' to society as there is lack of development/innovation of products or lower costs of goods that could have happened in the case of process innovation. The firms which enter the market because of increasing competition may provide more variety of goods but not necessarily innovative or better quality products because they do not have that resources to pursue R&D.

Conclusion: Evaluative conclusion	While increasing competition in this market structure can be beneficial to society in increasing output and lowering price and reducing inequity and therefore income distribution, it can be costly to society in increasing cost of production (as internal economies of scale may not be achieved), reducing variety and development /innovation of goods.
	Whether increasing competition is likely to be beneficial or costly to society depends on the nature of the industry and the context in which it operates. For technology firms, technology becomes obsolete very quickly. Increasing competition is not likely to threaten the performance of the big technology firms due to their current market share. They are more likely to engage in R&D to maintain their market share due to increased competition. In their line of business, it is even more important to have better understanding of customer insights and strictly execute these strategies throughout the innovation cycle. Increasing competition is therefore likely to be beneficial rather than costly to the society.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough and balanced economic analysis of how increasing competition to the technology industry could be beneficial or costly to society in terms of allocative efficiency, productive efficiency (X-inefficiency), (presence of) internal economies of scale, choice and inequity. There is excellent ability to use the diagram(s) to explain the result of increasing competition in the oligopolistic market, with relevant examples.	8 - 10
L2	Sufficient economic analysis of how increasing competition to the technology indsutry could be beneficial for costly to society. The analysis for the points are not always thorough although accurate. Answer is mainly one-sided (i.e. explanation of either beneficial/costly) but well-explained- max 5 m	5 - 7
L1	Shows smattering knowledge of the result of increasing competition on the industry. The meaning of the question is not fully grasped. There are some errors in concepts. Mere listing of points of benefits/costs to society. (max 2 m)	1 - 4
	Evaluation	
E3	Well-explained judgment on whether increasing competition is likely to be beneficial or costly to society. The judgement is supported by good relevant examples and economic analysis.	4 - 5

E2	Attempt to explain evaluative comments is incomplete or inaccurate at times. No attempt to evaluate using the context of the technology industry	2 - 3
E1	Evaluative comments are unexplained or unsupported by economic analysis.	1

Section B

One or two of your three chosen questions must be from this section.

- **4.** All governments aim to achieve economic growth, reduce unemployment and keep prices stable.
 - (a) Explain some challenges faced by the economy when the government fails to achieve these aims. [10]
 - (b) Discuss the extent to which a change in interest rates can help the government of an economy overcome these challenges. [15]

Suggested Answer

Part (a)

Question Requirements

Command words: Explain

Content/concept words: Consequences/problems of failing to achieve macroeconomic aims

Context: As the government of an economy

Requirement	Suggested Answer	
Introduction	There are four macroeconomic aims of any government and they are:	
	 Economic growth Price stability Full employment Balance of trade surplus in the balance of payments 	
	Failure to achieve these aims will result in a fall in the standard of living in the economy.	
Body 1: Failure to achieve EG	Economic growth refers to an increase in national income. Growth over the long run would require both actual and potential growth. Actual growth is the increase in national output. Potential growth is the increase in the productive capacity of an economy so that actual growth can be achieved in the future. Failing to achieve economic growth (in terms of both actual and potential growth) may in time lead to negative growth. Two consecutive quarters of negative growth would constitute a recession. A fall in actual growth would be illustrated by the AD curve falling and via the multiplier effect, there would be a fall in NY & employment.	

	have less goods and services to consume, this means a fall in the material standard of living of the country.
	be reduced, thus, restricting potential growth. In additional, there will also be fewer FDI in times of recession; hence the potential economic growth would also be adversely affected. This is illustrated by a leftward shift in the economy's production possibility frontier, or the long-run aggregate supply (LRAS) curve.
	Thus, failure to achieve economic growth leads to the challenge of generating further economic growth and if an economy falls into a recession, then the standard of living would fall.
Body 2: Failure to reduce Unemployment	Unemployment refers to the situation where people are unable to find work or unwilling to accept jobs that are currently available. The unemployed refers to people who are actively seeking employment (i.e. able and willing to work) but are currently without a job. Reduction in national output may cause some firms to go out of business and people lose their jobs causing demand deficient unemployment which is a failure to achieve yet another macroeconomic aim of the government.
	There may also be structural unemployment if there is a mismatch between worker skills and job requirements especially during a time of restructuring of the economy.
	Without employment, workers would have loss of income and would end up consuming less goods and services. Their material standard of living would therefore fall. A high proportion of unemployed will lead to fall in SOL for the major portion of population, social problems associated with poverty and strife for a basic SOL will result.
	Unemployment of labour also means that there is underutilization of resources. The economy is productively inefficient as it is producing below its full potential. If the unemployment is severe and prolonged, there would be a loss of human capital as workers might lose their skills altogether especially over a prolonged time period.
	Failing to achieve both EG & low unemployment aims also adversely affect the government budget, as a fall in the national income would mean a fall in personal income taxes collected. This is because an increase in unemployment would mean that the unemployed do not have an income thus would not have to pay any personal income tax. At the same time there would be a strain on the government's resources as it would have to increase its expenditure on unemployment and other welfare benefits. Such payments bear a high opportunity cost as the funds could have been spent on infrastructural projects like roads, schools and hospitals to further enhance the economy. The strain on the government's resources will be even more acute if the government is already experiencing a fiscal deficit.
Body 3 Failure to keep stable GPL	The general price level refers to the average of all prices in the economy. It reflects the cost of living. Inflation refers to a sustained increase in the general price level. Deflation refers to a sustained decrease in the general price level.

	As the prices increase persistently, the cost of living also increases. For households whose nominal incomes remain unchanged, the real income decreases. The material living standards of these people will be lowered because for the same nominal income, they are able to buy less (i.e. less purchasing power). If inflation affects the daily necessities, this will affect the poor more and this redistribution of income will lead to more unequal income distribution as the poor suffers more from the price increase.
	High inflation may lead to reduction in investment, growth, and employment especially as it tends to be volatile. This volatility in prices makes it difficult for firms to project their expected revenue and cost from investing, and hence the likely profitability of their investments. As such, investments in the economy will decrease. This will then cause a fall in AD and hence national output, resulting in a negative growth rate. Furthermore, since less output is being produced, firms would lay off workers, causing unemployment to rise.
	Inflation also leads to a fall in value of savings and wealth as the value of money falls when the price level increases. This is because the same amount of money would be able to buy fewer goods and services. This also means that the real value of households' savings in the banks would decrease, reducing their wealth. Inflation also causes income to be redistributed away from certain groups of people eg fixed income earners towards other groups eg businessmen who can profit more from price increase, thus leading to greater income inequality.
Conclusion	Thus, these are some challenges faced by the economy when the government fails to achieve the aims of EG, employment and stable prices.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation (i.e., makes use of economic analysis) of the challenges of not achieving the 3 aims	8 - 10
L2	Adequate explanation of the challenges of not achieving the 3 aims	5 - 7
L1	Cursory explanation or some understanding of the challenges	1 - 4

Part (b) Discuss the extent to which a change in interest rates can help the government of an economy overcome these challenges.

[15]

Suggested Answer

Question Requirements

Command words: Discuss Content/concept words: Macroeconomic policies including i/r MP Context: An economy - general context

Approach:

Thesis: A change in interest rates can help the government of an economy overcome these challenges Antithesis: Limitations of i/r MP & inclusion of at least one other relevant policy

Requirement	Suggested Answer
Introduction	Monetary policy refers to the deliberate use of interest rates (i/r) or exchange rates (e/r) as instruments to achieve macroeconomic objectives. It is carried out by a country's Central bank. Central banks can adjust interest rates through influencing the money supply in an economy through its interactions with commercial banks.
Body 1: Thesis: explain how reduction in i/r (exp MP) works to expand NY & thus reduce unN.	Expansionary interest rate policy is the increase in money supply to lower interest rates. As interest rate is both the cost of borrowing and the return on savings, a fall in interest rates leads to consumers borrowing more money to spend instead of saving. This increases C. At the same time, with the lower cost of borrowing, firms would find it more profitable to invest (rightward movement along the MEI). The increase in C and I then leads to an increase in AD, causing a rise in national income via the multiplier process. This is illustrated below.
	$ \begin{array}{c} GPL \\ GPL_1 \\ GPL_0 \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
	Figure : Expansionary interest rate policy causing increase in NY & <u>fall in unemployment</u> With the increase in AD from AD_0 to AD_1 due to the increase in C and I, national output increases from Y_0 to Y_1 through the multiplier process. The multiplier is dependent on the MPW. The smaller the MPW, the bigger the multiplier effect ie when C/I increase by a certain amount, the NY will increase by 1/MPC ie a multiple of the increase in C/I. This is because the spending of one party in the economy will lead to subsequent spending by the income receivers in the economy leading to a multiplied effect on the increase of the economy. With the increase in national output from Y_0 to Y_1 , there would be an increase in demand for labour as more workers are needed to produce the larger output. Hence, demand-deficient unemployment would decrease as well.
	Alternatively, if the economy needs to deal with price increases and inflation, i/r will be increased to reduce spending by consumers and investors to reduce AD & thus, hopefully bringing GPL down.

Body 2 Antithesis: • Limitations of policy • Conflict with price stability & BOP position	However, the impact on NY is dependent on the expectation of the future and if there is poor economic outlook, C or I may not increase much. A fall in interest rate may lead to a limited increase in C and I if consumers and firms are pessimistic about the economy's prospects. In such a scenario, they are unlikely to borrow to consume and invest even when interest rates fall. As such, the effect of an expansionary interest rate policy is limited. For investments, the poor economic outlook is illustrated by a steep MEI (below) where the fall interest rate (R ₀ to R ₁) only causes a small increase in investment (I ₀ to I ₁) ie PED of investment is less than one.
	Figure 7: Fall in interest rate causing limited increase in investment
	A liquidity trap which refers to the situation where interest rates cannot fall any further may exist. This is the case when interest rates are so low that they are effectively close to zero. In such a scenario, expansionary monetary policy is limited as there is no more room for interest rates to decrease.
	Another situation where i/r MP would not work would be when an economy is small and open economy dependent on international financial services. This makes it an i/r price-taker ie it has no ability to use its i/r to impact NY & employment. That is why for a country like Sg, instead of i/r, exchange rate is used as a policy measure to enable the government to meet its macroeconomic objectives of the country.
	If there is a lack of spare capacity in the economy (i.e., the economy is operating near/at full employment), an expansionary fiscal policy will lead to AD increasing, causing demand-pull inflation with little/no corresponding increase in real output level. Thus, expansionary interest rate policy would not be affective in stimulating economic growth. In fact, it would conflict with the aim of price stability (low inflation)
	An expansionary interest rate policy may also conflict with the aim of achieving a BOT surplus. The increase in NY would cause an increase in import expenditure and if there is an increase in GPL, there would be a further increase in import expenditure and a fall in export revenue which may lead to BOT deficit instead.
Antithesis: Limitations of i/r MP may mean other policies are necessary	Owing to the limitations of monetary policy and the possible conflict with other macroeconomic objectives, it may be necessary to include supply-side policies to reduce cost of production (COP) and/or increase productive capacity for increase in economic growth and price stability.

eq SS-side For example, the government can subsidize R&D or education and policies to move training. Successful R&D outcomes can improve production methods and education & training can lead to better labour productivity too. An AS downwards improvement in labour productivity would increase both SRAS and &/or outwards LRAS, leading to both actual and potential growth as well as price stability. The increase in productivity would reduce the average COP in the economy as fewer inputs would be needed to produce each unit of output. This would cause the SRAS to increase (shifts down). It would also increase the productive capacity as more output can now be produced with the same amount of input. This increases the LRAS (shifts right). The increase in both SRAS and LRAS would cause an outward shift of the AS curve. This increases the equilibrium NY. As illustrated in Figure 3 below, the increase in AS from AS0 to AS1 increases NY from Y0 to Y1. GPL AS_o AS₁ GPL₀ GPL_1 AD₀ NY Y_1 Y_ Hence, the Singapore government can use supply-side policy to achieve potential growth. Additionally, subsidising education and training also allow structurally unemployed workers to pick up new skills, reducing the skills mismatch between what workers can do and what employers want. This reduces structural unemployment. In Singapore, education is heavily subsidised and so is skills training under the SkillsFuture programme. Limitations: However, subsidising education and training has its limitations. Heavy government expenditure is required in education and training. Hence, there is a huge opportunity cost incurred as the money could have been allocated to other critical national needs such as healthcare and national defence. Additionally, adults are often reluctant to attend training for various reasons such as disinterest and time constraints. This reduces the effectiveness of the policy. Supply-side policy may also be limited because it will take time to show its effects. This is because it takes time for R&D or education & training to have impact on productivity and costs reduction. As such, supply-side policies can only contribute to long run growth but not to short run growth. Hence, supply side policies may be limited in achieving sustained economic growth.

Conclusion	In conclusion, each individual policy has its limitation and the best policy that any government should adopt to overcome the challenges and achieve its aims should be a combination of expansionary monetary policy and supply-side policies to generate EG and to increase employment. And, if it's inflation, it would be contractionary monetary policy. This combination is best as they are complementary in terms of time period as expansionary monetary policy works in the short run while supply-side policies work in the long run. However, i/r MP would not work in Sg as it is a small and open economy dependent on international financial services, thus an interest rate price-taker.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation and analysis of the extent to which a change in interest rates can help the government of an economy overcome these challenges. (Answer must include one other policy.)	8 - 10
L2	Limited explanation of the extent to which a change in interest rates can help the government of an economy overcome these challenges but economic analysis is not sufficiently rigorous. OR Thorough explanation on i/r policy alone with clear economic analysis.	5-7
L1	Cursory explanation of how a change in interest rates can help the government of an economy overcome these challenges.	1 - 4
	Evaluation	
E3	A well-reasoned conclusion that clearly addressed the question.	4 - 5
E2	Some attempt to make conclusive judgements about the overall impact but not well substantiated and rather generic.	2 - 3
E1	A judgement that is unsupported.	1

5. India's trade deficit hit a high of \$31 billion in July and it isn't easing soon. India's Commerce Secretary says the country's trade deficit surged in July as elevated commodity prices and depreciating rupee inflated its import bill. Its export sales also fell because of a reduction in its exports of petroleum products and other commodities due to domestic demand increase.

Source: The Print, 4 August, 2022

- (a) Explain how a country's trade deficit in its balance of payments could affect its standard of living. [10]
- (b) Discuss how best a government should address potential concerns arising from a persistent deficit in its trade balance. [15]

Suggested Answer

Part (a)

Question Requirements

Command words: Explain

Content/concept words: effects of BOT deficit on SOL

Context: an economy - general (can use context given in preamble)

Requirement	Suggested Answer
Introduction	The balance of trade is the difference between the export revenue and import expenditure on goods and services. A trade deficit means that export revenue earned is less than import expenditure for that period of time.
Body 1: Negative impact on EG & employment	Trade deficit leading to lower economic growth and higher unemployment & resultant fall in SOL If a country's balance of trade position worsens such that it has a balance of trade deficit, then the reduction in X-M would have caused AD to fall as AD=C+I+G+(X-M), causing a fall in NY and also a rise in demand-deficient unemployment.

	$ \begin{array}{c} GPL_{0} \\ GPL_{0} \\ GPL_{1} \\ \end{array} $ $ \begin{array}{c} AS_{0} \\ AS_{0} \\ AD_{1} \\ AD_{0} \\ Y_{1} \\ Y_{0} \\ \end{array} $ NY
	As illustrated in the Figure above, the trade deficit will lead AD to fall from AD0 to AD1, leading to a fall in NY from Y0 to Y1 via the reverse multiplier effect. With a fall in NY, there will be a fall in material SOL. Furthermore, the fall in output and production will lead to a fall in employment as less labour resources is required. This causes demand deficient unemployment and if that is large enough, unemployment leads to a fall in material SOL as disposable income has fallen and a fall in non-material SOL as unemployment leads to stress and strife of finding the next job.
	However, assuming the economy is at or near full employment, this fall in aggregate demand, ceteris paribus, will cause a fall in the general price level from GPL0 to GPL1 which can improve SOL as real income rises.
Body 2: Trade-off of future welfare (Negative impact)	Trade deficit leading to trading off of future welfare Also, if a country has a balance of trade deficit, it means that M exceeds X. Since M is a form of consumption (imports are consumed) while X is a form of production (exports are produced to be sold abroad), M exceeding X means that the country is actually consuming more than it is producing. So the present generation may be better off materially as they enjoy more goods and services with the trade deficit. However, when this happens, we say that the country is living beyond its means. This will mean that future welfare is traded off.
Body 2: Trade-off of future welfare (Negative impact)	Trade deficit leading to trading off of future welfare Also, if a country has a balance of trade deficit, it means that M exceeds X. Since M is a form of consumption (imports are consumed) while X is a form of production (exports are produced to be sold abroad), M exceeding X means that the country is actually consuming more than it is producing. So the present generation may be better off materially as they enjoy more goods and services with the trade deficit. However, when this happens, we say that the country is living beyond its means. This will mean that future welfare is traded off. This is because when M exceeds X, domestic consumers have obtained more foreign currency from the forex market to purchase the imports than the foreigners' supply of the foreign currency when they purchase X. This difference must have either come from the foreigners' supply of foreign currency on the forex when they purchase assets (e.g. FDI or short-term capital flows into the domestic economy) or from the foreign reserves on the forex market. In both cases, there is a trade-off of future welfare.

Body 3: Positive impact	But, if the trade deficit was due to large import expenditure on capital goods, the LRAS might shift to the right, bringing about potential growth. For example, developing countries might import machines and technology to increase production. The increase in productive capacity means that the future standard of living would increase as the potential amount of goods and services that can be produced and enjoyed in the future would increase.
	The fall in economic activity in the economy due to be trade deficit may mean that unemployed workers might see an increase in leisure time which might improve their non-material standard of living temporarily, as they spend more time with family and friends, reducing the stress levels related to work.
	Another possible positive impact is that the fall in economic activity in the economy might also lead to a fall in pollution levels as factories reduce their production levels and hence, their emissions. This might also lead to improvement in non-material standard of living.
Conclusion	Thus the SOL of an economy is likely to be negatively impacted by a trade deficit in the SR & LR although there may be some positive effects.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation that makes use of economic analysis to show the consequences of a BOT deficit and its impact on material & non-material SOL. The answer recognises that a BOT deficit could both positively and negatively impact SOL. If current and future SOL are considered, rather than negative and positive impact, can be credited at this level too.	8 - 10
L2	Answer shows some understanding of effects (e.g. considers material and non-material aspect of SOL, or positive and negative impact on SOL, or current and future SOL) OR Answer explains the consequences of a BOP deficit but might not have made clear links to SOL.	5 - 7
L1	Answer shows some knowledge of BOT but might not have recognised that the question is on the consequences of a BOT deficit. There may be basic errors in theory, inadequate explanations or answer is mostly irrelevant or inaccurate.	1- 4

Part (b) Discuss how best a government should address potential concerns arising from a persistent deficit in its trade balance. [15]

Requirement	Suggested Answer
Introduction	In view of the possible detrimental effects on the macro-economy and hence, standard of living, as explained in (a), governments generally adopt the following types of policies: (i) Expenditure-Reducing Policies, (ii) Expenditure-Switching Policies, (iii) Supply-Side Policies, to improve the BOP so as to address potential concerns.
	Expenditure reduction is about reducing expenditure on imports by reducing consumers overall expenditure. Expenditure switching is about reducing expenditure on imports by causing consumers to switch their expenditure from imports to domestically consumed goods. Supply-side policies can increase competitiveness of exports or reduce cost of production and prices of domestic goods to substitute import dependence.
Body 1: use of expenditure reducing method eg	Trade balance deficit can arise due to rising import expenditure (in excess of export revenue). One possible reason is <i>because of rising domestic incomes</i> . With higher disposable incomes, the consumers will spend more on good and services including imports.
FP	In this case, an expenditure reducing policy aims to reduce the demand and limit spending on imports by reducing overall expenditure in the economy. This results a fall in aggregate demand and in turn, national income falls. When national income falls, the demand for imports will also fall, since import expenditure is income induced. This in turn reduces the balance of payments deficit.
	For example, contractionary fiscal policy might be adopted. Taxes (e.g. personal income taxes, corporate income taxes) might be raised and government expenditure reduced. An increase in personal income taxes will lead to a fall in disposable income. This will lead to a fall in the level of consumption expenditure (C). An increase in corporate income taxes will lead to a fall in post-tax profits which results in a fall in the level of investment (I).
	The fall in the level of government expenditure (G), consumption expenditure (C) and investment expenditure (I) will reduce the level of aggregate demand (AD), resulting in a fall in national income. This will induce a fall in demand for imports as well, hence leading to a fall in total import expenditure. Balance of trade deficit would thus be reduced.
	In the longer term, the reduction in AD is deflationary and would reduce the general price level especially if the country is near full employment level of income. The downward pressure on general price level improves the price competitiveness of exports and increases demand for exports. Assuming the demand for exports is price elastic, a rise in export earnings will reduce the balance of trade as well.

	Evaluation
	However, this policy would not be appropriate if the economy was not operating at full employment and there are concerns about falling national income and rising unemployment. This policy would further worsen these concerns ie this expenditure reducing policy will conflict with EG & employment objectives. So it is unlikely to be adopted if the economy is not doing well internally.
Body 2: Use of expenditure switching	Trade deficit may be due to fall in exports due to loss of competitiveness of exports because of increasing price competitiveness of foreign goods relative to domestic goods.
depreciation	The aim of this expenditure switching policy is to change the relative price of domestic goods including exports and foreign goods (imports) so that people will substitute foreign goods with domestic goods.
	An example of such a policy is to depreciate the currency. This would make country's exports cheaper in terms of foreign currency and imports more expensive in terms of the domestic currency. Since imports are more expensive in domestic currency, people will switch away from imports to consume more domestically produced goods and services. At the same time, this makes exports more competitive and the demand for exports would rise.
	Assuming Marshall Lerner condition (i.e. PEDX + PEDM>1), balance of trade and current account deficit would be reduced, thereby improving the BOP position.
	<u>Evaluation</u>
	However, this policy might not be appropriate if there are concerns about inflation in the economy. Currency depreciation would result in imported inflation (especially if the country is highly dependent on imported raw materials) as in India's situation.
	This policy would also only be appropriate if Marshall Lerner condition holds. If the demand for both their exports and imports were very price inelastic and the summation of elasticities was less than 1, then the BOP would not improve.
	Currency depreciation should also be a short term policy because a continual fall in the value of the currency could lead to a fall in investor confidence, resulting in a withdrawals of FDI. This would worsen the KFA deficit and also lead to a fall in LRAS, worsening the initial concerns of slower actual and potential growth.
Body 3: Use of ss-side policy	Another way to increase export competitiveness, particularly if the fall is due to <i>falling labour productivity</i> . For example, investment in training could improve the quality of the labour force and raise the labour productivity and hence lead to a rise in LRAS. Government could provide subsidies to encourage firms to upgrade the skills of their workers. Assuming the increase in labour productivity brings about a fall in per unit labour cost, cost of production decreases and

	this causes an increase in SRAS. This would bring about a fall in the general price level of domestically produced goods and services and in turn lead to a rise in the price competitiveness of exports.
	Additionally, the quality of exports might also rise due to innovation arising from a higher quality labour force. This will increase export revenue and reduce the current account deficit. Furthermore, as domestically produced goods and services are more attractive relative to foreign goods and services. There could be a reduction in import expenditure as consumers switch from imported goods and services to domestic goods and services. The balance of trade deficit will, thus, be reduced.
	At the same time, foreign investors might be encouraged to invest because of the high labour productivity, this would also increase LRAS as well as improve the capital and financial account, improving the BOP position.
	<u>Evaluation</u>
	Supply-side policies are not easily implemented as firms might not be willing to send workers for training as there will be loss of output during training. Firms may also underestimate the true benefits of education and training. Hence, the amount of training undertaken may be less than socially optimal. Workers also face difficulties in learning new skills, especially the older workers. In most cases, the government needs to increase its spending on subsidies on training and incentives for research and development. As such, these policies can drain the government's resources, diverting resources away from other areas of competing needs.
	There is a time lag in the implementation of supply-side policies, which may compromise its effectiveness as economic conditions are very dynamic.
Conclusion	The best policies a government should adopt to address potential concerns arising from the deficit would depend on the root cause of the deficit. Depending on the root cause of the deficit, the concerns arising from a trade deficit could be very different.
	If the trade deficit is persistent and is a result of a loss of export competitiveness of the country, structural changes might be required in the economy. Otherwise, the detrimental effects on actual and potential growth, and current and future SOL, as outlined in (a), would be a serious cause for concern. In such instances, supply-side policies to improve productivity would likely be the best policy. Expenditure reducing policy would not be appropriate as it would further reduce actual growth. Expenditure switching policy could help in the short term but would probably not be sustainable in the long run. Taking the example of currency depreciation, it would not be possible for a currency to keep depreciating as investors might lose confidence in the economy, causing withdrawals of FDI and fall in economic growth for the economy.
	However, if the trade deficit is due to large import expenditure on capital goods, then as outlined in (a), there might not be a cause for concern as the country's productive capacity might grow. This could

lead to an increase in export competitiveness in the future as prices
fall and quality increases. In this case, the government might choose
not to adopt any policy to correct the BOP deficit. So it's important to
know the exact cause of the trade deficit to decide on the appropriate
policy to adopt.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation with economic analysis to show at least 2 policies to correct a trade deficit, in view of the specific concerns arising from the deficit. There should be a clear explanation of how the policies would address those concerns and hence, a recognition that the best policy would depend on the cause of the trade deficit.	8 - 10
L2	Limited explanation to show at least 2 policies to correct a trade deficit, in view of the specific concerns arising from the deficit but economic analysis is not sufficiently rigorous.	5-7
L1	Cursory explanation of some policies to address concerns of trade deficit	1 - 4
	Evaluation	
E3	A well-reasoned conclusion that shows evaluation of the policies discussed and justification of stand made. Recognition that the best policies would depend on the concerns arising from the trade deficit, which in turn, depends on the cause of the trade deficit.	4 - 5
E2	Some attempt to make conclusive judgements about the policies but not well substantiated and rather generic.	2 - 3
E1	A judgement that is unsupported.	1

6. Singapore has climbed back up to become the world's 3rd most competitive economy, after having slipped to 5th place in 2021 following 2 straight years at the top.

Source: The Business Times, 15 June 2022

- (a) Explain how competitiveness amongst countries might change over time. [10]
- (b) Discuss measures that a government can adopt to improve its global competitiveness. [15]

Suggested Answer Part (a)

Question Requirements Command words: Explain Content/concept words: Factors that will affect competition amongst economies Context: The international economy

Requirement	Suggested Answer
Introduction	Competitiveness depends on the comparative advantage an economy has over production of a good with other countries and it changes based on changes in resource allocation in the country. Relative competitiveness depends on the advancement in other countries' comparative advantage too. A country has comparative advantage when that country is able to produce a good at a lower opportunity cost compared to its competitor. Opportunity cost refers to the next best alternative forgone.
Body 1: Depletion of factor endowment	An economy's comparative advantage may change due to depletion of factor endowment. For example, Middle Eastern countries has the world's largest oil reserves. Hence, they are able to produce crude oil at a lower opportunity cost due to their factor endowment advantage. However, crude oil is a non-renewable resource. If crude oil available runs low, Middle Eastern countries will lose their comparative advantage in the production of crude oil. This is especially true if other countries (its competitors) start to find their own sources of oil.
Body 2: Competition from other countries	An economy can lose its comparative advantage due to increase competition from other countries. For example, China has a large supply of labour, which translates to cheap labour cost. Labour-intensive basic manufacturing becomes an industry of comparative advantage for China. However, there is rising competition from other countries such as Vietnam. Vietnam also boasts a cheap labour force. In addition, China has an increasingly urban population that has higher expectations of wages. The increase in wages in China leads to increased cost of producing basic manufacturing goods in China. If it is cheaper to produce the same good in Vietnam than China, then we can say that Vietnam is able to produce at a lower opportunity cost. This means that Vietnam has a comparative advantage in basic manufacturing and China has lost its comparative advantage to Vietnam.
Body 3: Developments of new technology	An economy can lose its comparative advantage due to technological advancements. For example, Middle Eastern countries will lose its comparative advantage in the production of crude oil because of technological advancements in other countries. US and Canada developed technologies such as fracking which allows them to extract shale oil from rock formations. If technical advancements improve efficiency of extracting shale oil, the cost of extracting shale oil will fall. If cost of extracting shale oil is lower than the cost of producing crude oil, Middle Eastern countries will lose their comparative advantage in crude oil production.
Conclusion	Thus, competitiveness amongst countries can change over time based on the factors that affect the quantity and quality of the goods and services that a country produces relative to that of other countries

ie when the country's comparative advantage changes over time as explained above.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation (i.e., makes use of economic concept of comparative advantage) of at least 2 factors that determine how competitiveness amongst countries might change over time.	8 - 10
L2	Adequate explanation of 2 factors that determine competitiveness amongst countries might change over time OR Thorough explanation of 1 factor only	5 - 7
L1	Identification of a few factors with cursory explanation without context or examples.	1 - 4

Part (b) Discuss measures that a government can adopt to improve its global competitiveness.

[15]

Question Requirements

Command words: Discuss

Content/concept words: explanation and evaluation of measures that a government can adopt to improve its global competitiveness.

Context: Any economy (can use Singapore as example - context given in preamble)

Requirement	Suggested Answer
Introduction	Global competitiveness refers to the ability and performance of a country in relation to the ability and performance of another country. Global competitiveness will affect the amount of foreign direct investment (FDI) that flows into an economy eg Singapore as well as the ability to export vis-à-vis competition from other economies.
Body 1: Measures that can be adopted 1) Strong focus on education / skills development	A government, for example, the Singapore government places strong emphasis on education. Education is the second largest component of Singapore's budget. Singapore's education system aims to equip every student with the relevant knowledge and skills to prepare them for the workplace. For example, Singapore is planning to expand university places to increase the number of graduates to 40% by 2020. Another example on lifelong learning is introducing the SkillsFuture programme. SkillsFuture is a national movement to provide Singaporeans opportunities at every stage in life to develop to their fullest potential. For example, every Singaporean aged 25 will receive an initial \$500 of SkillsFuture Credit that can be used on a range of government supported courses. This allows individuals to acquire new skills and deepen skill sets. A highly-skilled and sophisticated workforce will increase productivity and lowers COP in Sg which will make Singapore attractive to FDI. The lowering of COP also leads to more competitive exports.

	The increase in productivity would reduce the average COP in the economy as fewer inputs would be needed to produce each unit of output. This would cause the SRAS to increase (shifts down). It would also increase the productive capacity as more output can now be produced with the same amount of input. This increases the LRAS (shifts right). The increase in both SRAS and LRAS would cause an outward shift of the AS curve. This increases the equilibrium NY. As illustrated in Figure 3 below, the increase in AS from AS0 to AS1 increases NY from Y0 to Y1.
	GPL GPL GPL
	Thus, the use supply-side policy can achieve greater competitiveness
	for Sg.
	Limitations: However, subsidising education and training has its limitations. Heavy government expenditure is required in education and training. Hence, there is a huge opportunity cost incurred as the money could have been allocated to other critical national needs such as healthcare and national defence. Additionally, adults are often reluctant to attend training for various reasons such as disinterest and time constraints. This reduces the effectiveness of the policy.
Body 2: Measures that can be adopted 2) World-class infrastructure	Next, a government can develop world-class infrastructure to boost its competitiveness. For examples, Singapore boasts world-class infrastructure such as road and port facilities. Singapore also boasts world-class air transport facilities. Changi airport has won the world's best airport. In addition, Singapore is planning to build terminal 4 and 5, which will double Changi Airport's current capacity by mid 2020s. World class infrastructure will increase in efficiency of delivering of goods and services which again lowers cost of operating business in Singapore. This makes Singapore attractive to FDI as cost of business operation is lower given the efficiency of the system. A fall in transportation can impact export sales positively too.
	Limitations: Long term planning and a clear foresight is needed for the government to achieve this world-class infrastructure. Furthermore, the government must have enough budget to undertake such a course of action. These may pose as limitations for some governments that are unstable and poor as shown by some recent examples eg Sri Lankan or Argentinian government debt crises.

Body 3: Measures that can be adopted 3) Sound macroeconomic environment and fiscal management	Another measure a government may adopt is a sound macroeconomic environment and fiscal management. Singapore government remains prudent in their spending and has accumulated budget surpluses over the past years. Inflation rate has been kept at a low and stable rate for the past few years. Sound macroeconomic environment and prudent spending give investors confidence in Singapore's economy which makes Singapore attractive to FDIs.
	exchange rate monetary policy to keep out imported inflation which lowers COP in Sg. This will help to maintain our export competitiveness. The strong and stable Sing \$ also makes Sg a sound centre for financial and banking services which encourages FDI as well.
	Limitations: A strong Sing \$ policy is a double-edged sword as the strong currency may erode competitiveness of our exports due to the fact that when converted in the foreign currency, Sg's export price will be higher. Thus, there should be quality improvement to distinguish our exports from the goods of other countries.
Conclusion	Data shows that the measures taken by the Singapore government are working (moving back to 3rd position). However, Singapore is facing increasing competition from other Southeast Asian economies. This means that Sg needs to stay ahead of the competition and adopt changes in policy when necessary to maintain its competitive edge. If we do not improve our productivity levels, we cannot justify our higher labour costs and we will not be able compete with countries with lower labour costs. However, Sg cannot depend on lowering costs to compete but may have to innovate and create new opportunities for growth and export to compete in the global economy as cost advantage cannot be solely relied upon to improve global competitiveness.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	Thorough explanation and analysis of the measures that a government can adopt to improve its global competitiveness.	8 - 10
L2	Limited explanation of the measures that a government can adopt to improve its global competitiveness. Economic analysis is not sufficiently rigorous.	5 - 7

L1	Cursory explanation of measures that a government can adopt to improve its global competitiveness. Misconceptions shown.	1 - 4
	Evaluation	
E3	A well-reasoned conclusion that clearly evaluates the measures that a government can adopt to improve its global competitiveness.	4 - 5
E2	Some attempt to make conclusive judgements about the measures that a government can adopt to improve its global competitiveness but not well substantiated.	2 - 3
E1	A judgement that is largely unsupported.	1
