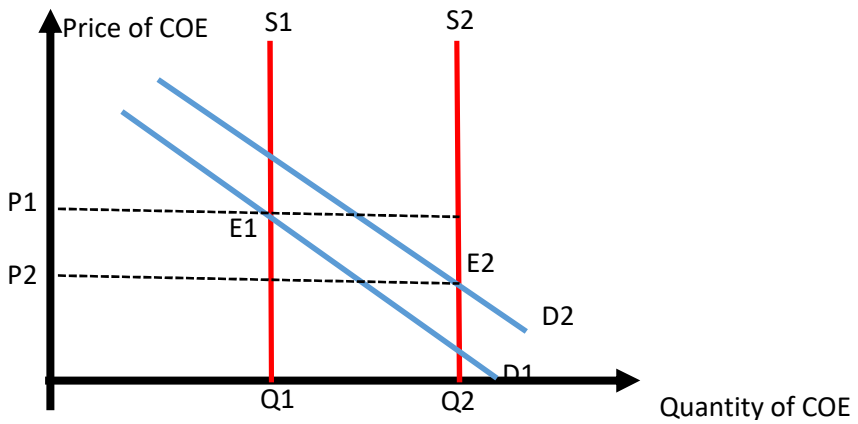
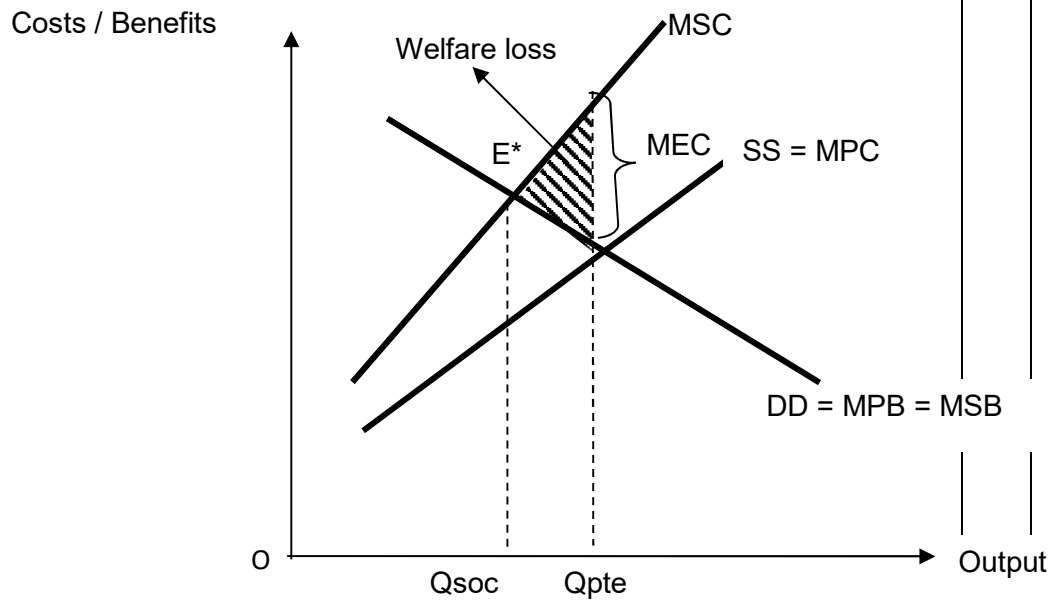
H1 CSQ 1

Suggested Answers

(a)		**Using the data from Fig. 1, summarise how the price of COE had changed from March to December 2016.**	**[3]**
		General Trend: Overall, the price of COE had increased from March to December 2016. [1] Distinct Segments: The price of COE had gradually increased from March to June 2016 [1] before prices declined steadily from July to December 2016. [1]	
(b)		**With reference to Extract 1, use supply and demand analysis to explain the likely impact on the price of COE.**	**[5]**
		The price of COE is determined by the forces of supply and demand for COE. **<u>Demand factor</u>** As mentioned in Extract 1, with Uber and Grab sourcing for new vehicles to be on the road coupled with minimal government intervention on 3rd party apps, the demand for private-hire cars will be on the rise. As the increase in demand for new private-hire cars will require COE, the demand for COE will increase, shifting the demand rightwards from D1 to D2, ceteris paribus. [1] **<u>Supply factor</u>** Also as mentioned in Extract 1, as COE quota is set to grow, supply of COE will shift rightwards from S1 to S2, ceteris paribus. [1] **<u>Justify which curve shifts more</u>** COE supply "is expected to rise sharply in 2016 to about 95,000, compared to about 58,000 in 2015" → the numbers is expected to increase by almost twice → we could justify that supply shifts by a greater extent compared to demand. [1] **<u>Diagram</u>**  **<u>Market adjustment process</u>**	

		At the original price P1, quantity supplied is greater than quantity demanded, this leads to a surplus and hence downward pressure on price from P1 to P2 till the surplus is eliminated. [1] **<u>Final Outcome</u>** Hence, prices of COE falls from P1 to P2 and quantity of COE increases from Q1 to Q2. [1]	
(c)	**(i)**	**Define price elasticity of supply.**	**[1]**
		Price elasticity of supply measures the degree of responsiveness of quantity supplied to a change in the price of good itself, ceteris paribus.	
	(ii)	**Using Extract 2, explain how the price elasticity of supply for private-hire cars might have changed with the need for the drivers to apply for a vocational license.**	**[2]**
		As mentioned in Extract 2, the private-hire car drivers are required to apply for a vocational license where they need to go through a medical examination, attend a 25 hours course and pass a test. This makes it relatively more difficult for an individual to be a private-hire car driver and may even deter some of the private-hire drivers who drive to earn a part-time income. [1] Given an increase in price, the quantity supplied for private-hire cars increases by less than proportionate. Hence, the introduction for the need to apply for vocational license will make the price elasticity of supply for private-hire cars to be relatively more price inelastic. [1]	
(d)	**(i)**	**Using Extract 3, explain the economic case for government intervention.**	**[5]**
		Identify the source of market failure: Air pollution caused by cars generate negative externalities in consumption, which is a source of market failure. [1] Define negative externality in consumption: refers to the costs of consumption, which fall on people other than the consumers of the product, for which no compensation is made. Example of negative externality in consumption: From Extract 3: “health and environmental impact of vehicular emissions” → reduce the quality of the environment to the community, and may cause long-term health problems such as lung cancer to others, incurring medical costs. [1]	

Elaborate on the source of MF with the aid of a diagram [3m]:



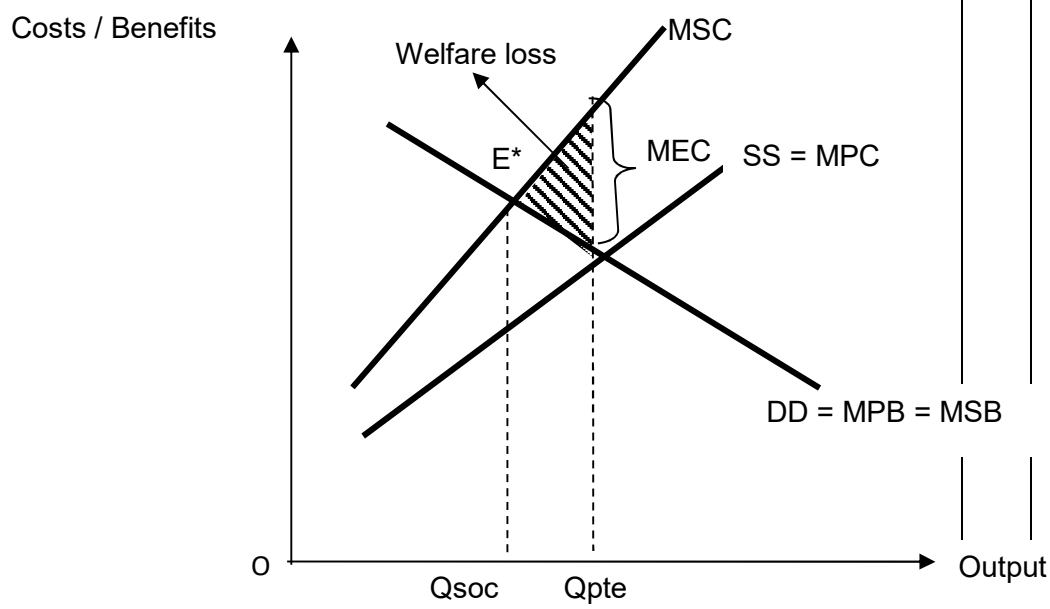
In a free enterprise economy, the price mechanism will only consider private costs and benefits, ignoring externalities. To the individual car user, the level of car usage will be at the point where MPB = MPC (private efficiency). Car users do not take into account external costs generated. As such, Qpte is being consumed. However, the socially optimal level of output is at Qsoc, where MSC = MSB. At Qpte, the MSC is greater than MSB. One extra unit of output adds more to society's costs than to society's benefits. There is over-consumption of car usage that generates negative externalities, and hence a welfare loss to society occurs, shown by the shaded area. The market fails because economic efficiency has not been achieved at Qpte. Link to qn: Hence, the need for government intervention.

OR

Identify the source of market failure: Air pollution caused by Uber and Grab drivers generate negative externalities in production, which is a source of market failure. [1]

Define negative externality in production: refers to the costs of production, which fall on people other than the producers of the product, for which no compensation is made.

Example of negative externality in production: From Extract 3: "Extra miles' worth of pollution being belched into Singapore's air every year from a traffic spike fuelled by ride-sharing apps such as Uber. The lower cost of taking an Uber is encouraging some people to step away from public transport and get into the Uber." + "health and environmental impact of vehicular emissions" → reduce the quality of the environment to the community, and may cause long-term

		health problems such as lung cancer to others, incurring medical costs. [1] Elaborate on the source of MF with the aid of a diagram [3]:  In a free enterprise economy, the price mechanism will only consider private costs and benefits, ignoring externalities. To Grab/Uber, the level of output will be at the point where MPB = MPC (private efficiency). Grab/Uber do not take into account external costs generated. As such, Qpte is being produced. However, the socially optimal level of output is at Qsoc, where MSC = MSB. At Qpte, the MSC is greater than MSB. One extra unit of output adds more to society's costs than to society's benefits. There is over-production of private-hire car service that generates negative externalities, and hence a welfare loss to society occurs, shown by the shaded area. The market fails because economic efficiency has not been achieved at Qpte. Link to qn: Hence, the need for government intervention.	
	(ii)	**Comment on the effectiveness of rebates for environmentally-friendly car models in curbing vehicular emissions of pollutants.**	**[6]**
		Explain how rebates for environmentally-friendly car models curb vehicular emissions: • From Extract 3: "The National Environment Agency is implementing rebates for environmentally-friendly car models that range between S$10,000 and S$20,000, to nudge car-buyers towards cleaner and more environmentally-friendly models such as electric vehicles." • The rebates equivalent to the size of the MEB at Qsoc will lead to a fall in the cost of purchasing an environmentally-friendly car model. This will compensate the consumer for the	

positive externalities generated. The subsidy encourages the consumer to take into account (internalise) the external benefits, raising the MPB to be at the same level as the MSB. Faced with the new demand curve, the consumer will increase consumption of environmentally-friendly car models to Qsoc, which is the socially efficient level. This will lead a fall in consumption of non-environmentally-friendly car models and hence a fall in vehicular emissions of pollutants as consumers switch towards environmentally-friendly car models which are cheaper substitutes with the rebates. The welfare loss to society would be eliminated.

Evaluation of rebates:

- From Extract 2: "A study on electric vehicles (EVs) has found that consumers were concerned about the purchase price of EVs as it is more expensive than a petrol-driven car even with rebates." There is difficulty in measuring the exact value of the MEB in monetary terms, as externalities are "unpriced" effects. If the external benefits are not accurately estimated, the government could either provide too much subsidy or too little subsidy. In this case, the rebates may be too little to make consumers switch to buy environmentally-friendly car models such as electric vehicles.
- From Extract 2: "lack of personal and public charging infrastructure as well as the limitations of the technology such as the range, battery life and time taken to charge the vehicles."→ Besides cost, consumers are concerned with the infrastructure and the limitations of the technology, hence rebate alone is not sufficient to encourage consumers to switch to buying electric vehicles to curb air pollution.
- Subsidies require a high level of government expenditure; in order to provide finance for the subsidies, the government may have to impose high tax rates on citizens. This may in turn have disincentive effects on work, investment and hence adverse effects on the economic growth of the country./Opportunity cost of government expenditure. The money could be channelled to other productive purposes such as education and healthcare.

Conclusion:

- In conclusion, rebates may not be effective in encouraging consumers to switch towards environmentally-friendly cars due to the limitations mentioned above.
- As such, government will need to implement other policies such as provision of charging infrastructure and R&D to overcome the current limitations of the technology to encourage more consumption of environmentally-friendly cars to curb air pollution.

Mark Scheme:

Level	Descriptor	Marks
L2	Two-sided answer i.e. one that explains how rebates work and explains its limitations.	4-6
L1	One-sided answer i.e. one that only explains the how rebates work without explaining limitations, OR An undeveloped answer that lacks economic rigour.	1-3

(e) **Extract 5 describes the introduction of private-hire car services in Singapore.**

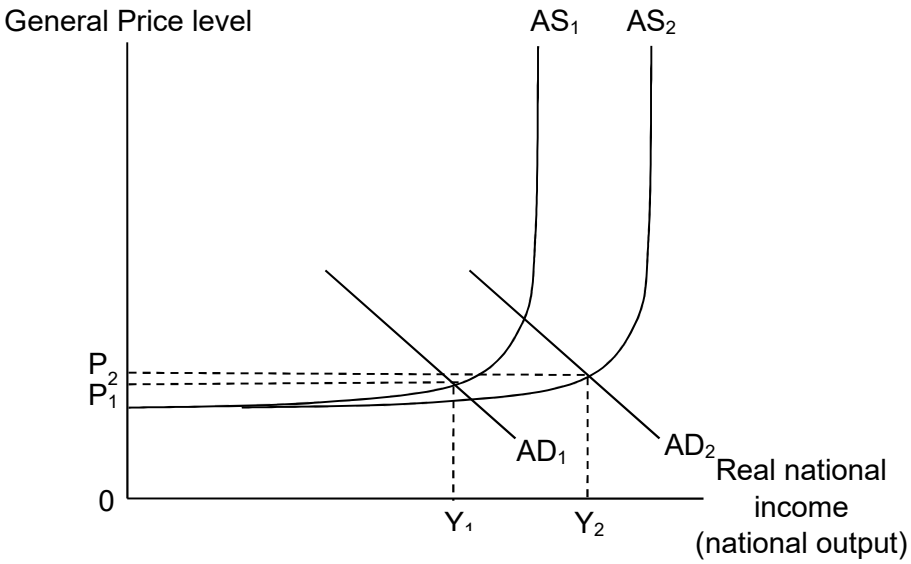
In light of the above, discuss whether the advantages outweigh the disadvantages. **[8]**

<u>Thesis: Advantages of the introduction of private-hire car services</u>

1. Higher I → Sustained Positive Economic Growth and Low Unemployment + Improve capital and financial account

- Extract 5: "there is a flow of investments into Singapore as Uber and Grab firms established their foothold in Singapore." + "More subtle but perhaps even more important, the widespread availability of private-hire services can signal that a local economy is friendly to the high-tech industry and so can be a draw for investments." → improve capital and financial account + Increase I → increase in AD → AD shift rightwards.
- Firms will experience a fall in inventories. This will signal to the firms to step up production. Firms will employ more workers leading to rising output. This results in falling unemployment and rising income. As income rises, spending by the households will increase. As one's spending becomes another income, this rise in spending will lead to a rise in income of another group of people because of the increasing demand for the goods and services they produce. The multiplier effect is triggered off leading to a multiple increase in production, output and national income → actual economic growth, assuming the Singapore economy is operating in the intermediate range.
- Increase in investment → more spending on capital goods (e.g. on machines, equipment and factory buildings) + bring about an improvement in technology, the economy's ability to produce goods and service increases. LRAS increases and shift to the right. This will increase the potential output of the economy and results in potential growth in the long run.

- Sustained positive EG will be attained with the economy achieving both actual growth in the SR and potential growth in the LR.



2. Improvement in non-material standard of living

- From Extract 5: "Consumers embrace having personal drivers to ferry them" → provide consumers convenience → improve nmSOL
- From Extract 5: "Greater work-life balance for workers" → more time for themselves and with their family → improve nmSOL
- From Extract 5; "Ride-sharing services may also generate positive externalities. For example, they could reduce parking congestion → easier to find parking → improve nmSOL.

<u>Anti-thesis: Disadvantages of the introduction of private-hire car services</u>

1. SOL worsen for workers + in the LR may lead to higher government expenditure

- From Extract 5: "lack of benefits and protection posing headaches for policymakers. For instance, in Singapore, the lack of Central Provident Fund (CPF) contributions, a core pillar of the Republic's social security system has implications for home ownership and healthcare."
- Grab and Uber drivers lack healthcare, retirement benefits or have insufficient savings in their CPF for retirements → lack access to affordable healthcare + harder to own a home + not enough savings when they retire → worsen their current and future mSOL and nmSOL
- In the LR, government may incur higher government expenditure to ensure that these workers have access to

housing and healthcare service and are able to retire comfortably → worsen Singapore's fiscal budget.

2. Underemployment

- From Extract 5: "structural challenges such as a mismatch between skills and jobs may nudge workers into temporary freelance work." Private-hire car service firms such as Uber and Grab may be relying on the very people who are structurally unemployed or are suffering from demand-deficient unemployment. They are forced to take up these freelance/part-time and low-paying work because they can't find full-time jobs that make use of their skills. Underemployment occurs as they could be working fewer hours/not fully utilising their skills as they would like to.

Overall Evaluation:

- **Stand:** The advantages of the introduction of private-hire services outweighs the disadvantages in Singapore. From the economic angle, the introduction of private-hire care services clearly bring about improved consumer welfare. Furthermore, facilitated by technology, we can expect the gig economy, and the introduction of such services similar to the private-hire car services to keep growing.
- Hence, the challenge for the government is to implement policies to maximise the advantages and minimise the disadvantages. For instance, Singapore government need to ensure that employees' welfare are taken into account by reviewing its labour laws to protect the interests of workers working in the private-hire car services industry/the gig economy.

Level	Descriptors	Marks
L2	Response addresses both the advantages and disadvantages of the introduction of private-hire services. There are links made to the macroeconomic goals of the economy. Response makes good use of case study material	4-6
L1	Response only addresses either only the advantages or the disadvantages of introduction of private-hire services. Response lacks the use of case study material and has poor application to the Singapore context.	1-3
E2	Response with a justified economic reasoning	2
E1	Response without economic reasoning	1