Catholic Junior College

JC2 Preliminary Examinations

Higher 1

ECONOMICS **8823/01**

Paper 1 **23 Aug 2019**

Additional Materials: Writing Paper **3 hours**

READ THESE INSTRUCTIONS FIRST

Write your name, class and question number 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, graphs or rough working.
Do not use highlighters, glue or correction fluid.

Begin each question on a new sheet of paper.

Answer **ALL** questions.

At the end of the examination, securely fasten your work for each question separately.
Submit each question separately.

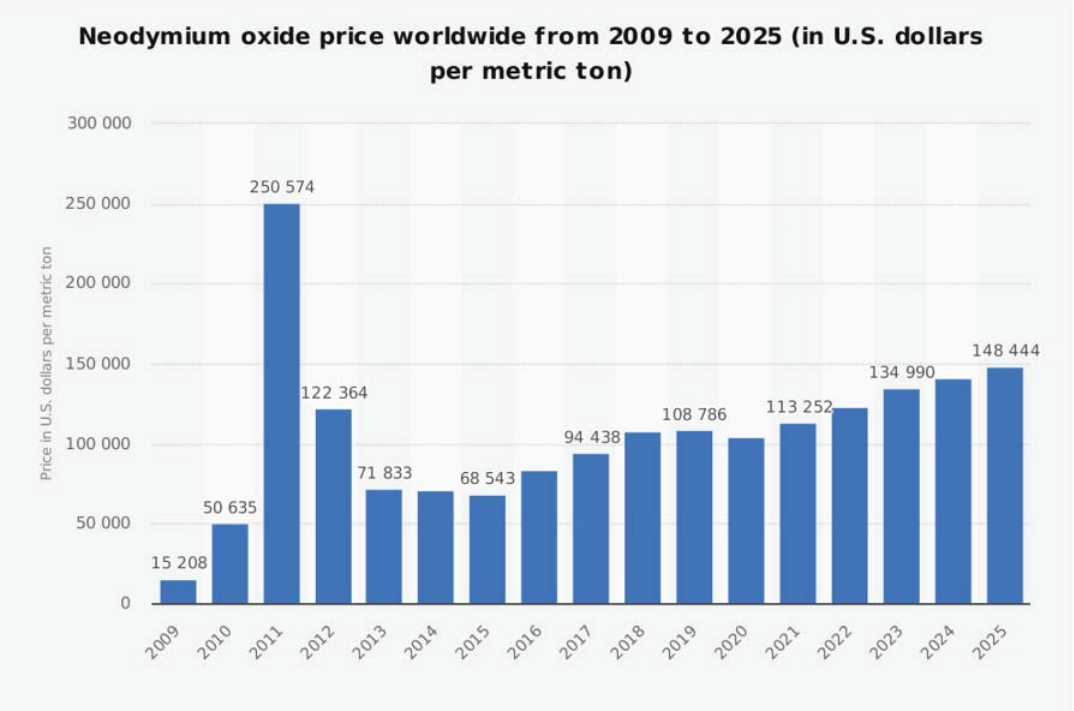
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **9** printed pages and **1** blank page.

Answer **all** questions.

Question 1: Rare Earths Production: China, US and Malaysia

Figure 1: Forecast Price of Neodymium Oxide (one of the rare earth elements)



Source: *Statista*, accessed 8 July 2019

Extract 1: China rare earths prices soar

Chinese rare earths prices are set to climb further beyond multi-year highs following a flurry of state media reports that Beijing could limit its exports of the prized minerals in its trade war with Washington.

China supplied 80% of the rare earths imported by the United States from 2014 to 2017. It was Beijing's decision almost 30 years ago to make rare earths a strategic material, and to ban foreigners from mining them, that helped pave the way for China to elbow aside the U.S. as the world's leading producer. With China now accounting for 70% of global production, and only one U.S. mine in operation, American industries have "no immediate avenues" to break their reliance on China for supply of rare earths elements, according to Citigroup Inc.

"Magnet-related rare earths are so critical to high-demand, highly-competitive, price-sensitive industries," said Ryan Castilloux, managing director of Adamas Intelligence, a consultancy that tracks rare earths markets. Rare earths, a broad group of 17 elements, are used in everything including consumer products from iPhones to electric and hybrid car motors, and critical military applications, including jet engines, satellites and lasers. The U.S. all but surrendered to China's dominance of the sector.

Rare earths demand is forecast to have increased by 8% in 2018, driven largely by developments in the use of rare earths permanent magnets in automotive and renewable energy generation.

Source: Adapted from *Reuters*, 6 June 2019

Extract 2: Production of rare earths in the U.S. and trade war with China

The U.S. Defense Department is seeking new federal funds to bolster domestic production of rare earths and reduce dependence on China, the Pentagon has said, amid mounting concern in Washington about Beijing's role as a supplier.

In 2018, the U.S. imposed three rounds of tariffs[1] on more than $250 billion worth of Chinese goods. Beijing retaliated in kind. Tariffs imposed on Chinese goods aim to make U.S.-made products cheaper than imported ones and encourage consumers to buy American. These tariffs are also increasingly seen as a negotiation tactic in the trade war. Both U.S. and international firms have said they are being harmed due to higher costs. The International Monetary Fund warned a full-blown trade war would weaken the global economy.

Sources: Adapted from *BBC News*, 18 Sept 2018 and *The Straits Times*, 30 May 2019

Extract 3: Toxic legacy in Malaysia rare earths village

Thirty years have passed since Japan's Mitsubishi Chemicals opened a rare earths refinery in the Malaysian village of Bukit Merah, but although the plant is gone, its toxic legacy persists. The facility was embraced by authorities as an advanced foreign investment that would help create jobs in poor Perak state in the country's north. But a rise in leukaemia and other health problems has left the site, now abandoned, as a silent warning to Malaysia as it touts a controversial new foreign rare earths plant being built in the country's east by Australia's Lynas Corp.

Residents and activists say the village and surrounding areas have seen increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning in the years following the plant's opening.

Mitsubishi Chemicals closed the plant in 1994 after a mounting public outcry, but the government has neither admitted nor denied radiation poisoning in the village. The only payout by the company was a 500,000-ringgit lump sum to the local community to compensate victims living near the plants. A tacit understanding was reached under which Mitsubishi Chemicals would shut the facility in exchange for a suspension of lawsuits.

However, in May 2019, Malaysian Prime Minister Mahathir Mohamad said that Malaysia will allow Australian rare earths producer Lynas Corp to keep operating a processing plant in the country. "We think we'll have to renew the licence," Mahathir told reporters at a news conference in Tokyo, adding Malaysia did not want to lose such a large investment.

Sources: Adapted from *Bangkok Post*, 26 Jun 2012, and *The Straits Times*, 30 May 2019

Extract 4: Growth of hybrid cars

The rising environmental concerns and endeavours directed at reducing carbon footprints have paved the way for the growth of the hybrid vehicle market. It has motivated governments to offer incentives to the manufacturers of vehicles for boosting the production of hybrid cars. A similar trend is expected to be witnessed over the next couple of years, thus, favouring the proliferation of the hybrid vehicle market over 2023.

[1] Tariffs are taxes on imported goods and services

The scarcity of fossil fuel has also expedited the adoption of hybrid cars as a cost-efficient alternative to conventional vehicles. Hybrid cars affirm profit in the future growth trajectory of the automobile industry. The market is projected to gain traction in the forthcoming years and remains highly lucrative.

To shore up productivity in its manufacturing sector, which makes up less than a quarter of its output, Singapore has focused efforts on attracting high-end manufacturers and those who adopt automated production processes.

British technology company Dyson said on October 2018 that it would build its electric car in Singapore, with a new automotive manufacturing facility set for completion in 2020 ahead of the first vehicle launch a year later.

The electric car plant is part of Dyson's £2.5 billion global investment drive in new technology. Why Singapore? Aside from its skilled engineers and scientists, for a high-tech firm like Dyson, Singapore offers generous incentive schemes. Some schemes include tax breaks for five years, which can be extended, and grants that can cover up to 30 per cent of the cost of projects to improve business efficiency.

Releasing brief details of patents filed 18 months ago ahead of the car's expected launch in 2021, Dyson said in a memo shared with media: “The patents show a car with very large wheels, giving low rolling resistance and high ground clearance.” This makes a vehicle suited to city life and rough terrain but could also contribute to increased range and efficiency, he said, cautioning however, that current designs were far from set in stone.

Electric vehicles are increasing in popularity as governments worldwide drive forward plans to gradually phase out polluting petrol and diesel cars.

Sources: *Marketwatch,* 4 Jan 2019, and *Channelnewsasia*, 9 May 2019

Questions

(a) With reference to Figure 1, describe the trend in the price of Neodymium Oxide between 2013 and 2019. [2]

(b) Extract 2 states that the U.S. imposed three rounds of tariffs on more than $250bn of Chinese goods.

Explain **two** unintended consequences on the U.S. due to its tariffs on Chinese products. [4]

(c) Using a demand and supply diagram and a relevant elasticity concept, account for the soaring price of rare earths and comment if the trend is set to continue. [7]

(d) Using the concepts of price elasticities of demand and supply, discuss whether consumers or producers of electric vehicles are more likely to enjoy a greater share of the subsidy. [8]

(e) **(i)** Explain the factors that the Malaysian government should consider in deciding whether to renew the licence of Australian rare earths producer Lynas Corp. [6]

(ii) Explain why the government may intervene in the market for rare earths metal production to bring about a more efficient allocation of resources. [6]

(iii) Discuss the view that the '500,000-ringgit lump sum to the local community' is the most appropriate way to improve efficiency in resource allocation in the market for rare earths. [12]

[Total: 45]

Question 2: Macroeconomic Issues in the U.S. and Singapore

Table 1: Data on Living Standards for Selected Countries, 2018

Rank order	Country	Human Development Index (HDI)	GNI per Capita (in USD at PPP)
1	Norway	0.953	68,012
2	Switzerland	0.944	57,625
3	Australia	0.939	43,560
4	Ireland	0.938	53,754
5	Germany	0.936	46,136
6	Iceland	0.935	45,810
7	Hong Kong, China (SAR)	0.933	58,420
7	Sweden	0.933	47,766
9	Singapore	0.932	82,503
10	Netherlands	0.931	47,900

Note: Table 1 shows the top 10 countries based on HDI, in rank order.

Source: *Human Development Report Office,* accessed 7 July 2019

Extract 5: Unemployment in the U.S.

U.S. job growth slowed in May and employment gains in the prior two months were not as strong as previously reported, suggesting the labour market was losing momentum despite the unemployment rate falling to a 16-year low of 4.3 percent. Non-farm payrolls only increased 138,000 last month as the manufacturing, government and retail sectors lost jobs, the Labour Department said on Friday. The economy created 66,000 fewer jobs than previously reported in March and April.

Employment outlook is bleak in the U.S. The unemployment rate fell slightly and that was because 429,000 people dropped out of the labour force. Job growth has decelerated from the 181,000 jobs monthly average over the past 12 months as the labour market nears full employment. There is growing anecdotal evidence of companies struggling to find qualified workers. With the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve (Fed) raising interest rate, the job market will be held back.

Source: *Reuters*, 2 June 2017

Extract 6: Twin challenges of solving high unemployment and high inflation

In 1960, the noted U.S. economists Samuelson and Solow made the link between inflation and unemployment quite specific: when unemployment is low, inflation is high, and vice-versa. Intuitively, this makes sense: in a stable world where economic growth is occurring and there are few people unemployed, households' higher buying power will raise the consumption level in the economy, triggering inflation.

For example, China's consumer inflation rate accelerated to 1.9 percent in October from a year earlier, beating market expectations, the National Bureau of Statistics said on Thursday. The consumer price index (CPI) had been expected to rise 1.8 percent on-year compared with an increase of 1.6 percent in September. China's economy recorded better-than-expected growth of nearly 6.9 percent through the first nine months of this year, buoyed largely by a recovery in its manufacturing and industrial sectors thanks to strong government infrastructure spending, a resilient property market and unexpected strength in exports.

What are the policy implications? A continuation of monetary tightening will only serve to slow growth further and put further downward pressure on inflation. One needs to look no further for such evidence than the housing industry where sales have slowed significantly with the small rate hikes the Federal Reserve has enacted to date.

Sources: Adapted from *Forbes*, 5 September 2017 and *CNBC*, 8 November 2017

Extract 7: Unemployment in Singapore

Should Singapore be hit by higher unemployment, it will be because of a shortage of skills — as a result of the widening jobs-skills mismatch — and not a lack of jobs. But the Government is determined not to let it come to pass, Manpower Minister Lim Swee Say said yesterday. "We are not going to allow this to happen to us," he said.

The prospect of unemployment creeping up as the economy matures has made the headlines in recent weeks, with both Prime Minister Lee Hsien Loong and Manpower Minister Lim previously weighing in on the issue.

To succeed in this journey, the Government will have to help businesses transform faster, and Singaporeans adapt better. Otherwise, "the mismatch between jobs and skills will widen as we run faster," he said. Mr Lee said the unemployment rate has climbed to 2.3 percent because of economic restructuring, but the figure is low compared with other developed countries. To keep Singapore prospering, the Government will help businesses create new jobs, get displaced workers re-employed and train employees to deepen and broaden their skills in their current roles.

Singapore has in place major national programmes such as the SkillsFuture movement and the Adapt & Grow initiative, which help those without work adapt to changing job demands and acquire the necessary skills to find new jobs. Mr Lim also noted a growing fear around the world that technology may eventually take over more jobs, making many more workers redundant. While intelligent technology will progressively take over many "jobs of today" that can be done cheaper, better and faster with technology, Mr Lim pointed out that technology will concurrently create many "jobs of tomorrow" — ranging from data analytics and cyber security to robotisation engineering, revenue management and innovation development. Some economies will see net job gains, while others will see net job losses.

Source: *Today Online*, 2 May 2017

Extract 8: MAS maintains a neutral currency stance

Singapore is the only major economy in the world to use the exchange rate as a tool of monetary policy, guiding the Singdollar higher or lower. Monetary Authority of Singapore (MAS) says the exchange rate is the best tool for a small, open economy like Singapore. It is a more effective way to manage inflation, as much of the country's consumer goods are imported.

Since October 2012, MAS' broad policy stance has been of a “modest and gradual appreciation” of the Singdollar. But on Jan 28, it made an unscheduled move to ease monetary policy, the first since July 2005, after Singapore's economic growth sagged in 2014 to its weakest in five years.

After easing three times between January 2015 and April 2016, the MAS — which uses the exchange rate as its main policy tool rather than interest rates — has stuck to a neutral currency stance in the face of subdued inflation pressure. Inflation in most countries has been surprisingly low despite the pickup in growth, and a key question many central banks are asking themselves is when to begin adjusting policy. Central banks are not seeing strong evidence of the usual transmission from faster economic growth to rising wages and then, to inflation, said Ravi Menon, Managing Director of MAS. Thus, Singapore is taking a neutral stance of zero appreciation for now until there are more changes.

Sources: *The Straits Times*, 13 October 2015 and *Today Online*, 25 October 2017

Questions

(a) **(i)** Using Table 1, compare the material living standards and overall living standards between Singapore and Hong Kong. [2]

(ii) Explain possible reasons for the above observations. [4]

(b) Using Extract 5, account for the change in unemployment rate in the U.S. [3]

(c) Explain the likely impact of "the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve raising interest rate" on the U.S. economy in both the short-run and the long-run. [6]

(d) "When unemployment is low, inflation is high, and vice-versa."

Using an AD/AS diagram, explain the relationship between inflation and unemployment and comment on the validity of the above statement. [6]

(e) Extract 7 states that "should Singapore be hit by higher unemployment, it will be because of a shortage of skills."

To what extent do you agree with the above statement? [8]

(f) **(i)** Explain why Singapore does not use interest rates as an instrument of monetary policy. [4]

(ii) Singapore adopted a "neutral stance of zero appreciation of the currency".

Discuss whether such a policy is the best way for Singapore to achieve the twin objectives of full employment and price stability. [12]

[Total: 45]

[END OF PAPER]

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Catholic Junior College
H1 Economics 8823
2019 JC2 Preliminary Exam

Answer Package

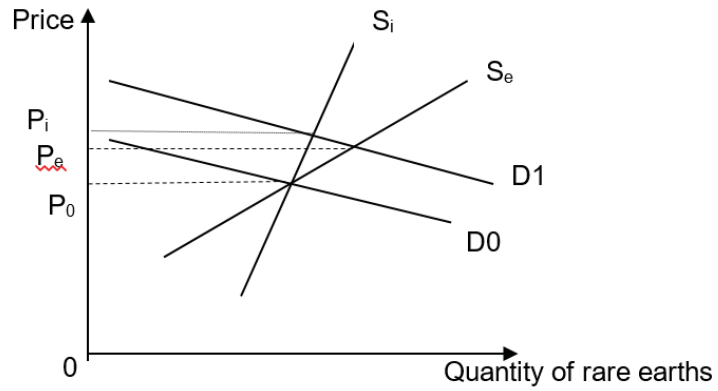
Question 1

(a)		**With reference to Figure 1, describe the trend in the price of Neodymium Oxide between 2013 and 2019.**	**[2]**
		[**Overall Trend**] World price for Neodymium Oxide is generally increasing [1], with a decrease in 2015 [**Refinement**]. [1] *Also accepted if students wrote that the sharpest increase is from 2015-2016. [1]*	
(b)		**Extract 2 states that the U.S. imposed three rounds of tariffs on more than $250bn of Chinese goods.** **Explain two unintended consequences on the U.S. due to its tariffs on Chinese products.**	**[4]**
		In Extract 2, 'U.S. and international firms have said they are being harmed'. **1. Unintended consequence for US producers:** U.S. producers have to import raw materials from China. Since tariffs are imposed on China→ it is more expensive to buy imported goods from China → leading to a higher COP (Extract 2) for the U.S. producers → lowering profitability for U.S. producers. [2] **2. Unintended consequence for export-producing firms/the economy** The U.S. imposes tariffs on Chinese products → China retaliates (Extract 2) and imposes tariffs on U.S. products. Px increases due to tariffs → PEDx>1, Qty dd of X decreases more than proportionately (assuming PEDx > 1) → TR decreases → **Firms' profits decrease** (since Profit = TR – Total Cost) [2] Or (Alternatively, students can link the fall in the export revenue of U.S. to a fall in AD and a fall in the RNY → Fall in actual growth for the U.S.) [2] **2 marks for each unintended consequence, with elaboration.**	
(c)		**Using a demand and supply diagram and a relevant elasticity concept, account for the soaring price of rare earths and comment if the trend is set to continue.**	**[7]**
		"Account for": **Approach 1:** SS of rare earths decreases (due to exports limit by China), PED<1, (Determinant of PED: lack of <u>substitutes</u> for rare earths, rare earths are needed to produce various consumer goods as illustrated in Extract 1) → explain the soaring price of rare earths via a diagram • Compare the change in price when PED<1 vs PED>1, with a given fall in supply **Approach 2:** DD of rare earths increase (due to higher <u>derived demand</u> – use of rare earth permanent magnets in automotive and renewable energy generation - Extract 1), PES<1 • Compare the change in price when PES<1 vs PES>1, with a given increase in demand **<u>P1: The concept of PES can account for the soaring prices of rare earths:</u>**	

DD of rare earths increase due to developments in the use of rare earths permanent magnets in automotives and renewable energy generation. Hence there is a **rise in derived demand** for rare earths. From Extract 1, Rare earths demand is forecast to have increased by 8% in 2018.

Supply is price inelastic (PES<1) in the SR due to **factor immobility** – it is difficult to switch factors of production to produce rare earths in the short run.

Draw PES<1 and PES>1 and illustrate that since PES<1 in the SR, accounting for the soaring price of rare earths. (from P_0 to P_i relative to the PES>1 whereby price change is less significant from P_0 to P_e)



Comment: [3]
<u>However, the concept of PES may not account for the soaring price to continue or other factors may cause the price of rare earths to dip:</u>

PES>1 in the LR due to greater factor mobility:

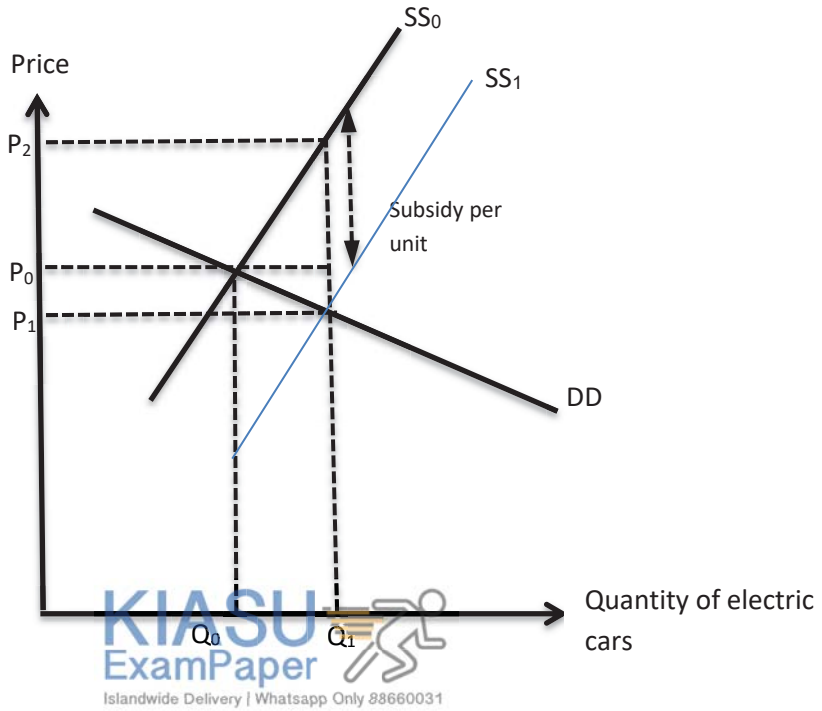
Or

Greater production of rare earths by other countries → ("The U.S. Defense Department is seeking new federal funds to bolster domestic production" → **SS of rare earths increases** → prices of rare earths might fall.
(Students can get the full 3m just by presenting this POV)

<u>EV: Make a stand and justify</u>
In conclusion, prices are still likely to increase because China produces most of the rare earths, and according to figure 1; prices of the rare earth elements are expected to increase further. Additionally, the trade war between China and the U.S. seems to be intensifying and China might further limit its exports, resulting in higher prices.

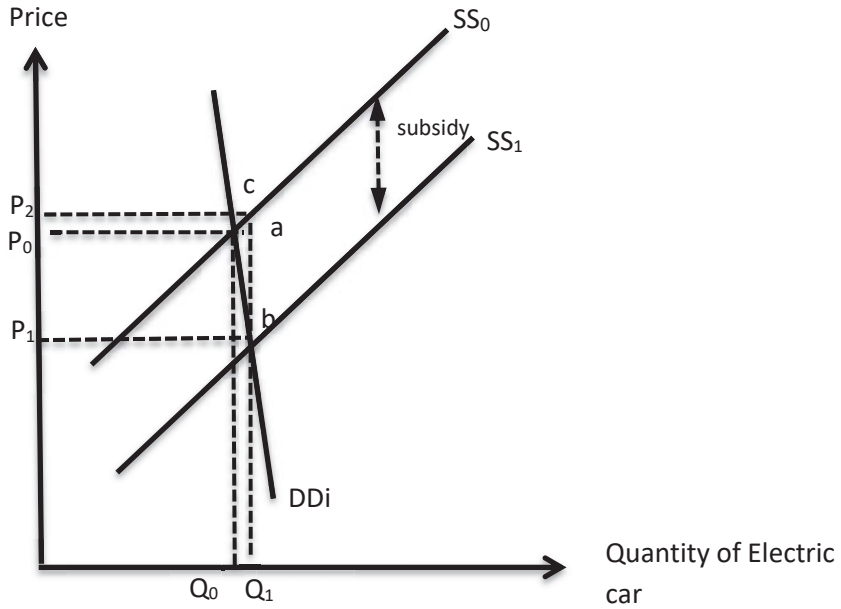
Mark scheme:

Level	Descriptors	Marks
L2	An answer that clearly explains with an economic framework on how PES/PED may account for the soaring price of rare earths.	3-4
L1	A descriptive answer with multiple basic conceptual errors on how PES/PED may account for the soaring price of rare earths.	1-2
Evaluative comment		

		Up to 3 further marks for an evaluative appraisal of possibly which factor is the main factor	
(d)		**Using the concepts of price elasticities of demand and supply, discuss whether consumers or producers of electric vehicles are more likely to enjoy a greater share of the subsidy.**	**[8]**
		With a government subsidy to promote the use of electric vehicles, this would lower the cost of production, resulting in a rightward shift of supply, reducing the price of electric vehicles. Whether consumers or producers are more likely to enjoy a greater share of the subsidy depends on the **relative elasticities of demand and supply**. **P1: Producers gain more than consumers of electric vehicles** (I.e. Supply is more price inelastic than demand) For the general public, the cost of owning an electric car is likely to take up a relatively large proportion of income. DD for electric vehicles is likely to be price elastic. On the other hand, the SS for electric cars is likely to be price inelastic in the SR due to factor immobility; 'new automotive manufacturing facility set for completion in 2020'. Thus for the general public, the demand for electric vehicles is likely to be more price elastic relative to the supply of electric vehicle. The government subsidy reduces the cost of production and shifts supply to the right from SS_0 to SS_1. Producer gain a higher benefit after subsidy of (P_2-P_o), Whereas the consumers gain less from the subsidy with a lower price per unit of (P_0- P_1).  **P2: Consumers gain more than producers of electric vehicles** (I.e. Demand is more price inelastic than supply) On the other hand, for the ultra-rich, the cost of owning an electric car is likely to take up a small proportion of the income. DD for electric vehicles are likely to be price inelastic. In contrast, SS for electric cars is likely to be price elastic in the LR when technology and	

facilities are well developed. From extract 4, 'Electric vehicles are increasing in popularity as governments **worldwide drive forward plans** to gradually phase out polluting petrol and diesel cars'.

Producer gain a lower benefit after subsidy of (P_2-P_o) in the figure below. Whereas the consumers gain more from the subsidy with a lower price per unit of (P_0- P_1).



EV: Depends on the level of technology and on the level of competitiveness amongst cars' producers → may produce a high level of inventories in the LR in anticipation of the popularity of electric vehicles→ making PES elastic. Thus, in that scenario, consumers are likely to gain more.

Mark scheme:

Level	Descriptors	Marks
L2	Balanced answer with good application of economic analysis. Good reference made to the case material.	4-6
L1	Superficial analysis or only theoretical analysis without application to context.	1-3
	Evaluation	
E2	Judgment is based on economic analysis and adequately substantiated.	2
E1	For an unexplained assessment, or one that is not supported by economic analysis.	1

(e) (i) **Explain the factors that the Malaysian government should consider in deciding whether to renew the licence of Australian rare earths producer Lynas Corp.** [6]

Factors for Consideration: Benefits, Costs, Constraints, Information, Perspectives (from Decision-Making Framework)

Benefit/Constraints: Need for Govt to attract FDI

- Ext 3 "We think we'll have to renew the licence," Mahathir told reporters at a news conference in Tokyo, adding Malaysia did not want to lose such a large

investment." Malaysia may be constrained by its limited resources and thus need to award the investment to boost its economic growth

Benefit: Gains from having rare earths mining/refining

- Increase in FDI thus leading to an increase in AD. As mentioned in Ext 2 'Rare earths are used in consumer products, from iPhones to electric and hybrid car motors, and critical military applications, including jet engines, satellites and lasers.' These are modern necessities and thus the demand for rare earths will continue to increase. With mining/refining, a country will be able to gain from the growth of the industry.
- Increase in Employment, Increase in X thus actual EG and higher material SOL.

Cost: Costs of having rare earths mining/refining

- As mentioned in Ext 3, apart from the environment damage, there are also health risks of 'increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning'.
- Link to –ve ext of rare earths mining/refining
- Link to affecting the health of the citizens → resulting in lower ability to work → Fall in the quantity of workers who can work → fall in productive capacity → fall in LRAS.

Information: Govt and citizens may have lack of info

- Govt and citizens may not have full information on the effects on health and environment (Ext 3) to full understand the scale of cost

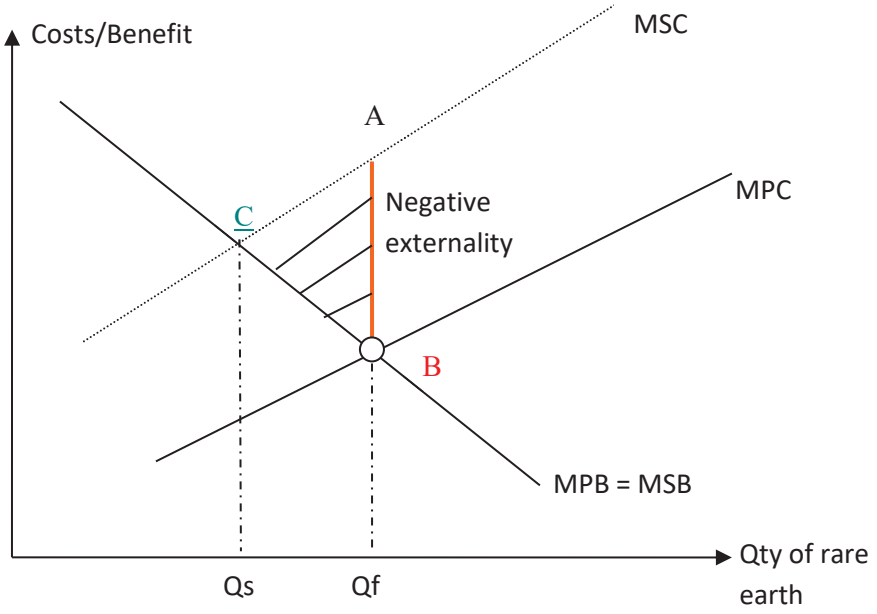
Level	Descriptors	Marks
L2	An answer with at least 2 factors considered and is well explained. Accurate use of economic analysis and appropriate use of diagram.	4-6
L1	Smattering of some valid points or mere identification of factors without elaboration Inaccurate or lack of use of economic analysis within answer Only 1 factor well explained	1-3

	(ii)	**Explain why the government may intervene in the market for rare earths metal production to bring about a more efficient allocation of resources.**	[6]
		In deciding how much rare earths metal to produce, self-interested and rational producers will only weigh their **marginal private benefit (MPB) against their marginal private cost (MPC) and produce the quantity Qf, where MPB = MPC**. Private cost includes the cost of the factors of production, like wages paid to workers and the electricity cost in producing rare earths metal. Private benefit includes the revenue earned from the production of rare earths. However, production of rare earths metal produces negative externalities (MEC). These externalities include **adverse impacts on health for third parties living in the area** suffering from 'increased rates of leukaemia, birth defects, infant deaths, congenital diseases, miscarriages and lead poisoning' as seen in Extract 3. The presence of the **negative externalities leads to a divergence between private and social costs, with MSC>MPC as MSC= MPC+MEC.**	

At **Qf, MSC > MSB**, society values an additional unit of rare earths production less than what it cost society to produce it.

Socially optimal production level is at Qs MSB=MSC.

There is an **overproduction of QsQf** leading to **deadweight loss of triangle ABC**.



Level	Descriptors	Marks
L2	A well-explained answer, which uses clear, logical economic analysis to explain how inefficient allocation of resources arises. Reference is made to an accurately drawn diagram; Extract evidence is used to support the analysis.	4-6
L1	A mostly descriptive answer that states the relevant points without using economic analysis. Answer may be incoherent and does not follow a logical order. Diagram is not used, or is incorrect. Extract evidence not used.	1-3

(iii) **Discuss the view that the '500,000-ringgit lump sum to the local community' is the most appropriate way to improve efficiency in resource allocation in the market for rare earths.** [12]

Main argument: Look at how '500,000-ringgit' lump sum increases the MPC.

Points to consider:

- How does the lump sum payment work to solve the negative externality?
- What other policies can solve the negative externality
- What does appropriate mean? Effective, Fastest, lowest cost?

Thesis: The lump sum payment is appropriate in improving efficiency in resource allocation

The lump sum payment is able to reduce production of rare earths.

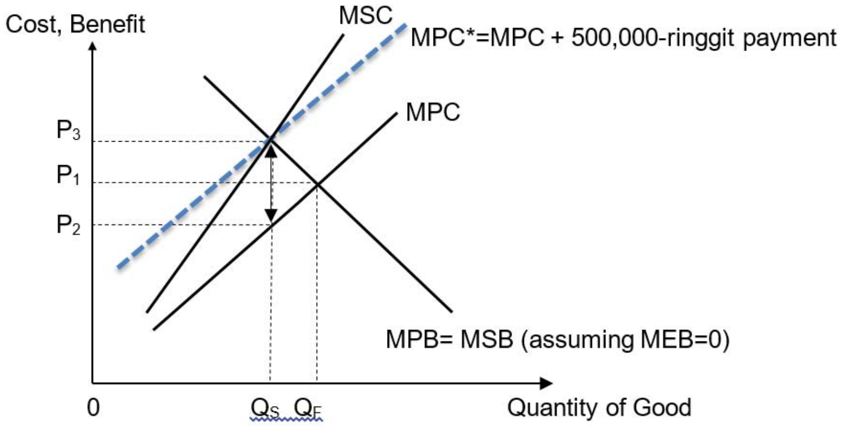


Figure : Effect of a 500,000-ringgit payment in correcting negative externality

The free market originally consumes/produces at Qf. The '**500,000-ringgit' payment is effectively a tax, equal to the marginal external cost at Qs** is paid by the firm. There is **internalisation of the externality**, i.e. the payment makes the private firm take into account the negative externality in their decision making and affecting their cost of production. This causes the firm's new **MPC to shift up to MPC***. As a result, the firm **produces where MPC*=MPB, i.e. at Qs.**

The allocative efficient output level **Q_S is achieved and the deadweight loss is eliminated**, with an increase in price. Market failure is resolved.

**Alternatively: '500,000-ringgit ($158,000) lump sum to the local community' can be regarded as a lump sum tax.*

EV: However, '500 000 ringgit' may not be sufficient to cover the external cost of that is created in the production of rare earths. And it is very difficult for any government to know the exact value of MEC that is required of the producer.

Anti-Thesis : Other policies may be appropriate in improving efficiency in resource allocation

Alternative Policies
- Regulation
- Ban
- Public Education

<u>**Regulation**</u> *(students do not need to explain both types):*

Regulations could be used to reduce (i) output; or (ii) external costs.

(i) Regulations to reduce output are known as an **output quota**. An output **quota set at the socially optimum output level of Qs** where MSB=MSC

(ii) Regulations to **reduce external costs will shift the MSC curve closer to the MPC curve.** The Malaysian government will require the firms to adopt a particular technology to reduce pollution, or require that waste materials to be processed and deemed safe for the environment before being allowed to be released. This would reduce the external cost, thus reducing the divergence between marginal private costs and marginal social costs.

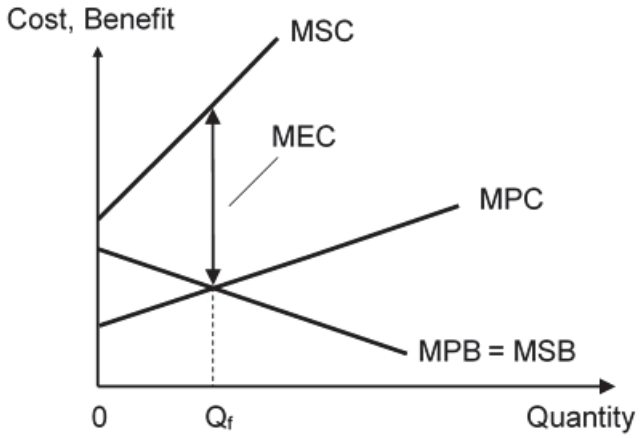
Both types of regulations force producers to cut back their production to socially optimal level and thus eliminates deadweight loss.

EV: The government may incur **monitoring costs** to ensure the firm meets the regulation. **Corruption** being present in the country may make enforcement a little more difficult. **Penalties** imposed must be hefty enough to deter violations.

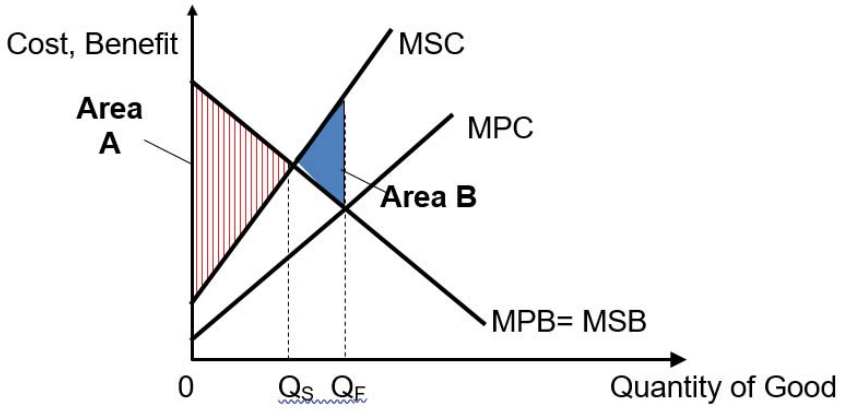
Ban:

A ban is an outright restriction of output where the quantity produced will now be 0. This eliminates all external costs, because zero units of the good is produced.

Ideally, the government should ban the product only if the MSC is greater than MSB for all output levels and seen in the figure below



EV: However, goods should not be banned when the negative externalities generated do not cause such a great divergence such that MSC exceeds MSB at all output levels. This means there is still a positive socially efficient output level that should be produced. If the government still insists on banning the good, the ban in this case will be an inefficient ban. Such an example is given below.



As can be seen from figure above, MSC does not exceed MSB at all levels of output, i.e. Qs (where MSC=MSB) is greater than zero. There is still a positive quantity of the good that is socially efficient if produced/consumed.

Hence, by completely banning the good, potential net benefit from producing the good is lost and this is illustrated by area A. Banning the good resulted in a deadweight loss of area A, which is larger than the deadweight loss of area B that would have been generated if the government had not intervened and had allowed the free market to prevail at Qf. The ban has created an even larger welfare loss (A) than at free market equilibrium (B). Hence, the ban is inefficient.

It is thus dependent on the Malaysian Government to determine the Net benefit from the production of rare earths and if it exceeds the net cost to society for a ban to be deem inefficient.

Public education:
Public education aims to get producers to produce up to the allocative efficient output level Qs, by (i) voluntarily internalising the external costs; or (ii) voluntarily reducing the external costs. This may be done using advertisements and campaigns informing the producers of the external cost of production.

With reference to Figure , firm will voluntarily take into account the external costs and the MPC curve will shift closer to the MSC curve. As a result, production of goods with negative externalities (rare earths) would be reduced and correspond with the optimal output Qs.

EV: The effectiveness of public education is not certain since adoption by producers is voluntary. It depends on how receptive the firm is to the campaigns and education. There is also high cost associated with carrying out campaigns and it may also take a long time for the results to be seen. If the external costs are severe and must be dealt with immediately, other measures need to be used together with public education.

Synthesis
Stand: Overall, the lump sum payment may not be the most appropriate way as a regulation may be better.

Substantiation:
- Regulation is simpler to implement compared to a lump sum payment/tax. The technical difficulties involved in formulating what is an appropriate amount of 'pollution' may be more difficult to determine due to imperfect information.
- However for Malaysia, a total ban on the production of rare earths might be the most feasible solution for the country as it will not need to use resources to enforce regulations. However, that might be at the cost of billions of investment dollars which the country may need to boost its economy.

Level	Descriptors	Marks
L3	A well balanced analysis of at least 2 policies (including lump sum payment) that could solve the effects of production of rare earths. 2 policies, well explained with economic analysis can achieve high L3 Appropriate use of economic framework(s) Good use of case evidence	6-9
L2	Provided a detailed explanation of the implication of compensation package in resolving the source of market failure and at least 1 other policy in mitigating the effects of production of rare earths Answer may contain some minor inaccuracies in economic analysis	3-5
L1	Considered superficially the impact of the compensation package on the market of rare earths and/or other policies to mitigate the effects of production of rare earths Answer contained inaccuracies and/or lack economic analysis.	1-2
Evaluation		

		E2	Good evaluation, based on the measure being supportive of the price mechanism.	2-3	
		E1	Some unsupported evaluative statements.	1	

Question 2

(a)	**(i)**	**Using Table 1, compare the material living standards and overall living standards between Singapore and Hong Kong.**	**[2]**
		I. Singapore has a higher **material** living standards as compared to Hong Kong, as our GNI per capita is higher. -1m II. Hong Kong has higher **overall** living standards than Singapore as their HDI value is higher. -1m Accept: Singapore and HK have similar overall living standards as the HDI values are similar.	
	(ii)	**Explain possible reasons for the above observations.**	**[4]**
		I. Singapore might have higher GNI due to **better export performance/better government policies to attract inward FDI**. This would increase Singapore's AD, increase RNY and hence GNI per capita, ceteris paribus. With higher GNI, Singapore would have higher material living standards. II. For overall living standards, Hong Kong may have better overall living standards due to **better quality of healthcare /higher educational attainment** on average, possibly due to the **government investing more resources in these areas.** This would contribute to a higher quality of life, accounting for the higher non-material living standards and hence the higher overall living standards in HK. *Notes to students* • *For point on overall SOL, the reason given needs to be linked to the indicators included in HDI. E.g. discussion of "higher stress in SG" not accepted unless it is linked to health/life expectancy* • *If students said in part (ai) that overall SOL is similar, as long as their reason is able to account for the similar overall SOL, it can be accepted.* • *Answer should contain two reasons, one to account for each observation made in a(i)*	
(b)		**Using Extract 5, account for the change in unemployment rate in the U.S.**	**[3]**
		• **Identify the change**: The unemployment rate <u>fell</u> to a 16-year low (Ext 5). [1] • **Evidence**: This was due to new jobs being created ("Non-farm payrolls increased 138,000 last month") • **Explanation:** With more jobs created, more people would have been able to find a job, leading to a fall in unemployment rate. • **OR** • **Evidence**: This was because "429,000 people dropped out of the labour force" • **Explanation**: Since unemployment rate is calculated as a % of labour force, with a smaller labour force due to some unemployed dropping out, the unemployment rate would decrease.	
(c)		**Explain the likely impact of "the reality of Trump providing fiscal stimulus almost gone and the Federal Reserve raising interest rate" on the U.S. economy in both the short-run and the long-run.**	**[6]**
		<u>Interpretation of events:</u> • Reduction in fiscal stimulus → fall in G (**contractionary fiscal policy)**	

- Fed "raising interest rate" is a **contractionary monetary policy**, increasing cost of borrowing and lowering C & I (C rises because of less purchases of consumer durables, and I rises because previously profitable investments become unprofitable with rise in COB).

Short-run impact

- Decrease in G, I, C → Decrease in AD → Decrease in RNY via multiplier effect
- Diagram to illustrate
- **Impact on macro aims**: Slower or negative economic growth; higher cyclical unemployment as firms cut back on production and hire less labour; decrease in GPL

Long-Run Impact

- Decrease in I → decrease in AS in long-run as capital stock is depleted and not replaced → Negative potential EG
- Fall in AS also worsens inflationary pressure
- Diagram (can be combined w earlier diagram for SR)

Level	Descriptors	Marks
L2	Well-reasoned, balanced answer that looks into both policies impacting various macroeconomic goals. • Students can also reach L2 by explaining impacts on both actual and potential growth (even if no other macro aims are explained) • Max L2-4: Answer with no long-run impact	4-6
L1	Answer that looks into only one government policy. Analysis is incomplete or contains errors.	1-3

(d) **"When unemployment is low, inflation is high, and vice-versa."** **[6]**

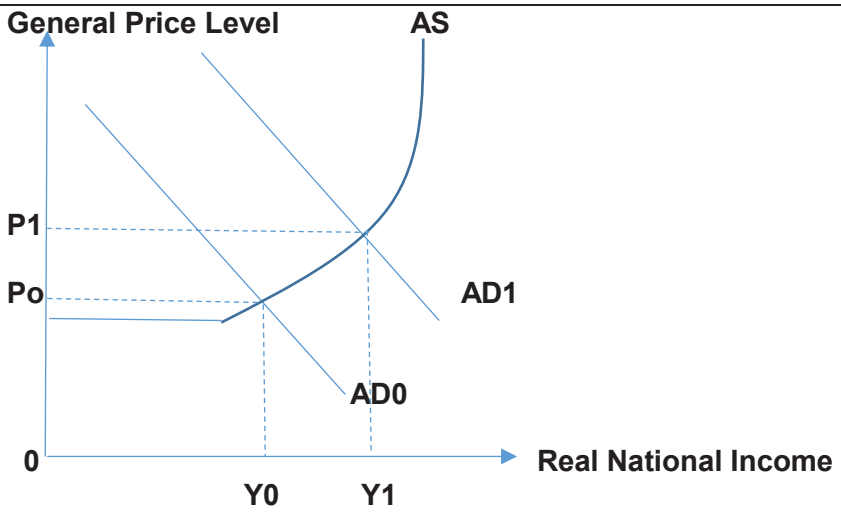
Using an AD/AS diagram, explain the relationship between inflation and unemployment and comment on the validity of the above statement.

Low unemployment would result from economic growth in the US which has resulted in an increase in the purchasing power of consumers and thus an increase in AD.

An increase in AD leads to an increase in real national income, a fall in cyclical unemployment and an increase in GPL.

Case evidence - Extract 6: in a stable world where economic growth is occurring but there are few people unemployed, people have higher buying power and this will raise the consumption level in the economy, triggering inflation.

Thus, there is an **inverse relationship** between low unemployment and high inflation and the statement is therefore valid.



Draw a diagram to show rightward shift of the AD curve at the intermediate range of AS as shown above.

However, inverse relationship may not be valid:

- If increase in GPL is due to a fall in AS. (Cause of inflation)
- A fall in AS will lead to a fall in real national income and increase in unemployment with an increase in GPL.
- If economy is at the Keynesian or Classical range of AS (State of the economy)
- If the economy is at the Keynesian range of the AS curve, increase in AD as a result of economic growth will result in an increase in output and low unemployment but no change in GPL.
- If the economy is at the Classical range, an increase in AD will have no impact on unemployment but will cause inflation.

Thus, taking into account various possible states of the economy, the statement may not be valid except when the economy is operating on the intermediate range of AS.

Mark Scheme
1 mark for correct identification of relationship as inverse
1 mark for accurately drawn diagram
2 marks for explanation of inverse relationship
Up to 2 further marks for one valid comment

(e) **Extract 7 states that "Should Singapore be hit by higher unemployment, it will be because of a shortage of skills."**

To what extent do you agree with the above statement? **[8]**

Identify the unemployment in Extract 7: Structural unemployment which arises because of a mismatch of skills (the skills demanded by employers do not match the skills of those unemployed)

Thesis: Agree that structural unemployment is caused by shortage of skills
Case evidence: "Should Singapore be hit by higher unemployment, it will be because of a shortage of skills" as a result of the widening jobs-skills mismatch"

This leads to **occupational immobility** which refers to the situation where people are unable to take up jobs in another industry or occupation because they lack relevant skills or education. Such mismatch of skills is caused by market failure in the training market. Employers are often reluctant to provide training for fear of workers moving to another firm. Workers may also be reluctant to take up training because they are unable to afford the

direct training costs and also the opportunity costs incurred due to the income forgone while they are being trained.

Possible Thesis
Shortage of skills can also arise because of economic restructuring.
Case evidence: "unemployment rate has climbed to 2.3 per cent because of economic restructuring"

With the growth of international competition, this has become an important cause of unemployment in Singapore which has seen industries shifting production bases to countries where the production costs are lower. Workers become unemployed as there are no jobs at all or they lack the skills required by other industries. The outsourcing of factories and jobs to developing countries in the region is another cause of structural unemployment in Singapore.

Another Possible Thesis
Technological unemployment is a type of structural unemployment resulting from the successful growth of new industries using labour-saving technology e.g. automation. Advances in automation have been blamed for rising structural unemployment.

Case evidence:
"Growing fear around the world that technology may eventually take over more jobs, making many more workers redundant."

Anti-thesis: On the other hand, other reasons such as poor economic growth can also account for higher unemployment (cyclical unemployment) in Singapore.

Case evidence: Extract 8: "Singapore's economic growth sagged in 2014 to its weakest in five years."
As the economy slows down, aggregate demand falls due to a fall in consumption and investment. Firms find that they are unable to sell their current level of output at the current general price level. They will have to cut back on production and the amount of labour they employ (since labour is a derived demand). This results in cyclical unemployment, Cyclical unemployment can also be due to spill over effects if US economic growth falls. Singapore's exports will be indirectly affected resulting in a fall in export revenue → fall in AD → higher cyclical unemployment.

Conclusion
Stand: Overall, I do not agree with the statement.

Substantiation: While structural unemployment may be caused by mismatch of skills, there are other causes of structural unemployment. Furthermore, if Singapore experiences slow economic growth or a recession, cyclical unemployment may also result. Furthermore, the Singapore government has already put in place measures to address structural unemployment, for example, the SkillsFuture movement and the Adapt & Grow initiative which help those without work adapt to changing job demands and acquire the necessary skills to find new jobs.

Mark Scheme:

Level	Descriptors	Marks
L2	Able to explain at least 2 causes of unemployment, well elaborated and supported by case evidence where possible.	4-6
L1	Able to explain how unemployment is caused by mismatch of skills with case evidence Superficial explanation of 2 causes.	1-3

		Evaluation		
		E2	Well justified Evaluative Comments	2
		E1	Evaluative comment with no or poor justification	1
f	**(i)**	**Explain why Singapore does not use interest rates as an instrument of monetary policy.**		**[4]**
		2 reasons are required to secure 4 marks. **Reason 1:** Use evidence from Extract 8 – exchange rate policy is a tool that helps fight against imported inflation. **Knowledge**: As SG relies heavily on imports, changing interest rates would have a less direct effect on prices we pay compared to exchange rate which affects prices of imports directly. By appreciating SGD, the price of imported goods becomes relatively cheaper in domestic currency and firms can buy cheaper factors of production, reducing imported cost-push inflation. **Reason 2**: SG faces the Open Economy Trilemma. As we maintain free capital flows, money supply changes whenever capital flows in and out of SG. Thus, SG does not use interest rates as an instrument of monetary policy as it is unable to control interest rate when money supply keeps fluctuating. Note: If small multiplier is given as reason, this is accepted but full credit only if student is able to explain why size of k is not a limitation of exchange rate policy (to address imported inflation)		
	(ii)	**Singapore adopted a "neutral stance of zero appreciation in the currency".** **Discuss whether such a policy is the best way for Singapore to achieve the twin objectives of full employment and price stability.**		**[12]**
		Introduction **Definition:** Exchange rate policy is a form of monetary policy where the government intervenes by manipulating the exchange rate of its currency to achieve its macroeconomic objectives. It is often done to promote price stability as a sound basis for sustainable economic growth. **Overview:** Neutral stance of zero appreciation can be one way to achieve price stability & address cyclical unemployment. This policy comes with limitations and as such, we need to look into the use of other policies like Supply Side Policies (SSP). **Thesis** **Point:** Use of neutral stance of zero appreciation will help to achieve a lower rate of cyclical unemployment **Elaboration**: When Singapore changed its stance from gradual & modest appreciation to a neutral stance of zero appreciation, this is effectively a depreciation. With a depreciation of our currency, price of exports in terms of foreign currency will become cheaper and price of imports in terms of domestic currency will become more expensive. Assuming Marshall-Lerner Conditions (MLC) holds, net exports (X-M) will increase. The rise in (X-M) will lead to a rise in Aggregate Demand (AD), shifting AD to the		

right. With the rise in AD from AD0 to AD1 as shown in figure 1 below, firms will need to step up production and thus need to hire more labour. This helps to lower cyclical unemployment.

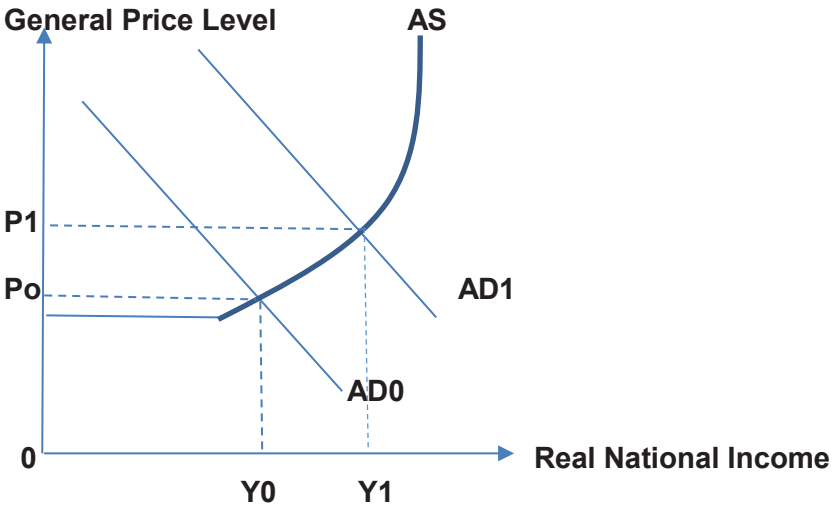


Figure 1: Singapore's Economy

Anti-thesis 1

Point: However, the use of neutral stance of zero appreciation cannot help to lower structural unemployment

Elaboration: As shown above, the use of such policy helps to solve cyclical unemployment in the economy. Singapore also faces the problem of structural unemployment and this policy cannot solve this type of unemployment. Thus, there is a need for another policy to target structural unemployment in Singapore.

Anti-thesis 2

Point: Furthermore, the use of neutral stance of zero appreciation might worsen price stability.

Elaboration:

- Effective depreciation results in rise in import prices in terms of SGD → imported cost-push inflation as SG is highly dependent on imported factor inputs
- DD-pull inflation may also result (if economy is close to Yf) as AD increases and there is greater competition for scarce resources, increasing the price of factors of production. General Price Level (GPL) will then increase from Po to P1 as shown in figure 1.

Anti-thesis 3

Point: Other policies, such as Supply Side Policies (SSP) may be better.

Elaboration:

- Interventionist supply side policies e.g. skills upgrading and retraining of workers can help to increase the quality of labour in Singapore by increasing labour productivity and this will lead to an increase in overall productive capacity of the country. This will cause the Long Run Aggregate Supply (LRAS) curve to shift to the right from LRAS0 to LRAS1 as shown in figure 2 below. With this shift of LRAS curve, there will be a fall in GPL from Po to P1, helping to stabilise the price increase from the neutral stance of appreciation.
- This policy also helps to workers who currently have no jobs due to mismatch of skills. Thus, this policy can also help to solve structural unemployment in the Singapore economy too.

- *Students can also explain other possible SSPs such as R&D, investment in infrastructure, etc.*

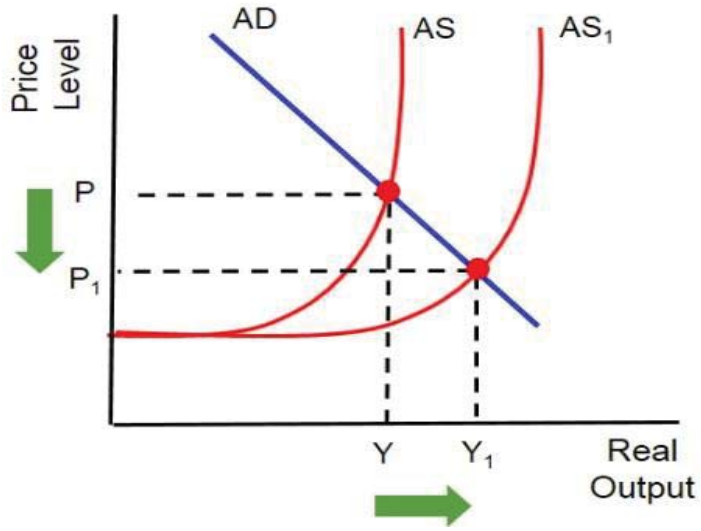


Figure 2: Economy of Singapore

Evaluative Conclusion

Stand: In conclusion, the use of the neutral stance of zero appreciation alone is not the best way to solve achieve the two given goals in the question. [Stand]

Substantiation:

- Tinbergen Rule: There are currently two macroeconomic objectives, namely achieving price stability and achieving full employment. Tinbergen rule states that achieving the desired targets requires an equal number of instruments.
- Root cause: Lastly, using just the neutral stance of zero appreciation is not the best way as it cannot target the **root cause** of each problem. For instance, the use of such a policy can solve cyclical unemployment but not structural unemployment. This enforces the need for more than one policy to achieve the desired outcome.

Mark Scheme

Level	Descriptors	Marks
L3	An answer that provides a balanced view on using neutral stance of zero appreciation and explains an alternative policy to achieve **both** objectives.	6-9
L2	An answer that explain two policies to achieve either full employment **or** price stability and provides some limitations. One policy that explains how either objective is achieved, including limitations. [Max 3m]	3-5
L1	An answer that merely identifies policies without linking to the two objectives.	1-2
	Evaluation	
E2	Well-justified Evaluative Comments	2-3
E1	Unjustified Evaluative Comments	1