



ST ANDREW'S JUNIOR COLLEGE

MILESTONE ASSESSMENT 1 (2021)

General Certificate of Education Advanced Level

Higher 1

---

**ECONOMICS**

**8823**

**5-9 April 2021**

**Duration: 45 minutes**

---

**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, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

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

---

This document consists of **3** printed pages and **1** blank page

## Answer all questions

### Question 1: Food prices in Singapore

#### Extract 1: Increase in prices of fish and vegetables at wet markets in Singapore

##### A Vegetables

Some vegetables are costing about twice as much as they did just weeks ago. Vendors said poor weather conditions in Malaysia caused a shortage in supplies as farms were flooded, resulting in poor crop output.

Transport is an issue because roads are closed owing to severe flooding. Mr Alex Zhou, 35, who runs a vegetable stall in the wet market in Pasir Ris Drive 6, said: "The constant rain in Malaysia has made it hard to transport goods, and we've lost a lot of supply due to the poor weather".

The vice-secretary of the Singapore Fruits & Vegetables Importers & Exporters Association, Mr Jerry Tan, noted that prices usually tended to tick upwards towards the end of the year because of the monsoon season, but this year has been exceptional. He said: "We've never seen such a drastic increase in such a short time before. But suppliers are trying to get their stocks from Thailand and Vietnam, so prices should start to drop and will stabilise soon." He added that the supply for spinach has also been badly affected as it is easily perishable, and thus not easy to get from farther afield, like from Thailand.

##### B Seafood

Mr Goh Thiam Chwee, the Chairman of the Singapore Fish Merchants' General Association, said that the prices of popular items, such as Chinese silver pomfret and red snapper, jumped by about 20 per cent, and might possibly increase to 30 per cent as Chinese New Year approaches. Traditionally, fish is regarded as an auspicious food because it is a homonym for abundance. In particular, the Chinese silver pomfret, is in demand during the festive season as it is deemed to be the best-tasting pomfret breed and favoured for its auspicious name.

*Source: The Straits Times, 12 Jan 2021*

#### Extract 2: Vertical farms on the rise in land scarce Singapore

A slew of high tech farms such as *&ever*, *Indoor Farm Factory Innovation* and *Genesis One Tech Farm* will begin operation next year. They are part of eight companies that have accepted the Singapore Food Agency's (SFA) 30X30 Express Grant to ramp up local food production. The grant will help these companies accelerate Singapore's efforts to meet 30 per cent of its nutritional needs with locally produced food by 2030. It will also help to minimise disruptions to Singapore's food security, due to events such as the Covid-19 pandemic. As part of the grant requirements, some recipients, who are growing vegetables, have to ensure at least 50 per cent of the crops grown are Asian greens like xiao bai cai or kangkong.

Mr Alfred Tham, Indoor Farm Factory Innovation's (IFFI) chief executive officer, said robotics will also help reduce operational costs at its 38,000 square foot facility at JTC Space @ Tuas when it is ready for operation in the second half of next year. Beyond that, Mr Tham said their machines will have the

ability to analyse the condition of the plants, such as when they will be ready for harvest. All this, he said, will not only help to reduce manpower needs, but also scale up production to meet SFA's minimum requirement of 200 tonnes of produce annually. Mr Tham said IFFI will be using an indoor farming methodology of soil-based cultivation, which allows them to have greater flexibility in the variety of crops that they can grow. What this means is that the plants can be grown in separate containers, which enables them to customise the growing conditions as needed.

Aside from taking up far less space compared to a traditional open air farm, vertical indoor farms are also not at the mercy of the weather, said the representatives from the three companies. Moreover, growing conditions such as temperature, humidity and lightning conditions can be replicated so that plants that do not normally thrive in the tropics can be grown indoors instead. Price-wise, the representatives said it will be competitive. The prices may not be cheaper than the vegetables imported from Malaysia, but Mr Tham said they will definitely be fresher and of higher quality. It also offers a better alternative compared to imports from further away.

*Source: todayonline.com, 17 Nov 2020*

### **Questions**

- (a)** With the aid of a production possibility curve, explain the impact on Singapore's economy of
- i. allocating more land to build high-tech vertical farms in vegetable production **[3]**
  - ii. using advanced technology e.g. robotics used by high-tech vertical farms in vegetable production **[3]**
- (b)** With reference to Extract 1 and using a demand-supply diagram, explain why there is an increase in the price of seafood during Chinese New Year. **[5]**
- (c)** With the aid of a diagram, explain how Singapore Food Agency's grants can address possible shortages in the market for vegetables. **[3]**
- (d)** Explain whether the Singapore Food Agency's decision to provide grants to help companies accelerate efforts to meet 30 per cent of Singapore's nutritional needs with locally produced food by 2030 is a rational one. **[6]**

[Total: 20 marks]

**Suggested Answers****(a)**

**With the aid of a production possibility curve, explain the impact on Singapore's economy of**

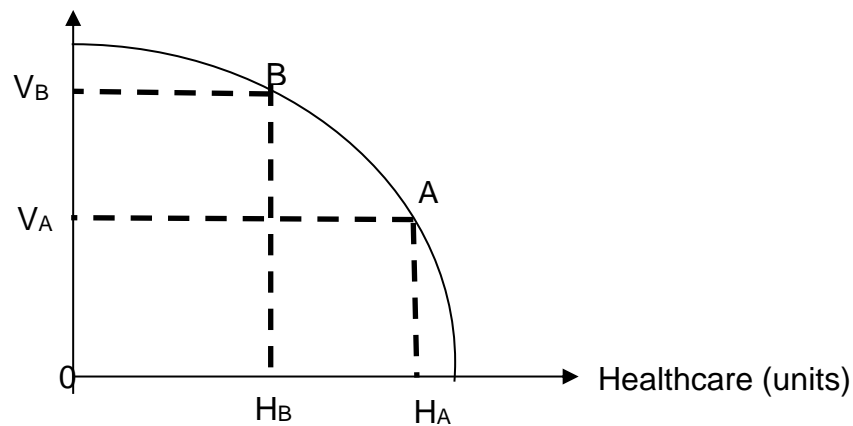
- i. allocating more land to build high-tech vertical farms in vegetable production**

**[3]**

When more land is allocated to build high tech vertical farms, opportunity cost is incurred. Assuming the next best alternative of the land use is to build more hospitals, opportunity cost in terms of the greater access to hospital treatments is forgone. Shows a point on PPC showing more farm produce at the trade-off of healthcare units in the diagram.

Award any next best alternative (students should avoid vegetables).

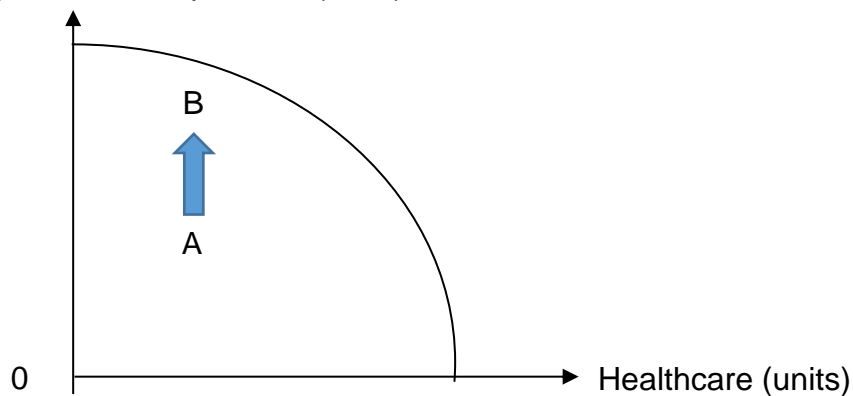
Vegetables/farm produce (units)

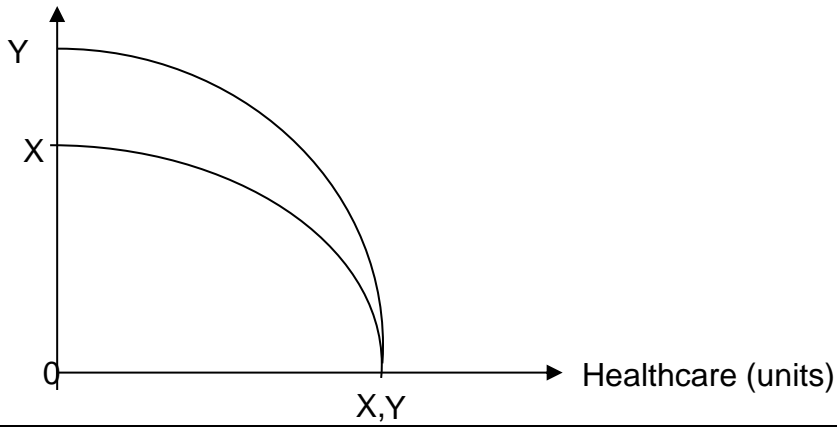
**OR**

When more land is allocated to building of vertical farm, this will lead to an increase in vegetables/farm produce as more resources are utilised for the production of farm produce.

This can be seen by the movement of a point from A to B as point B implies a higher output of vegetables/farm produce.

Vegetables/farm produce (units)



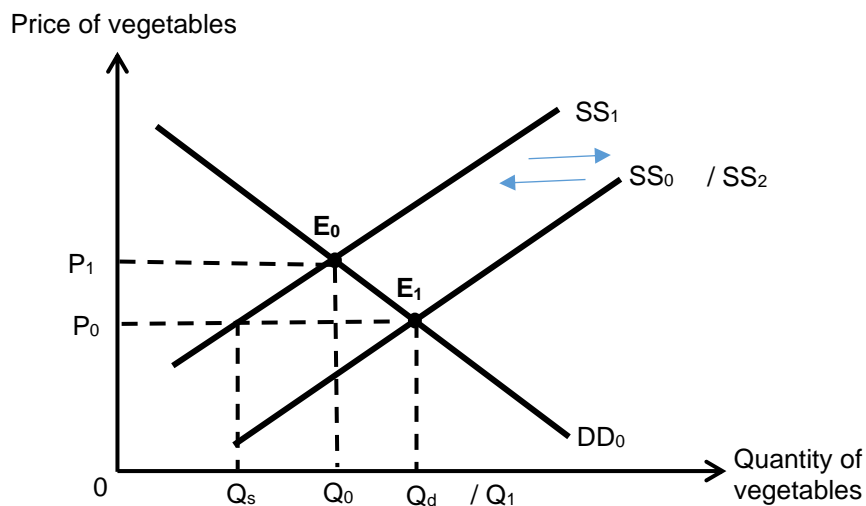
|  |   |            |
|--|---|------------|
|  | <p><b>Markers' Comments</b></p> <p><b><u>Skills</u></b></p> <ul style="list-style-type: none"> <li>Many students gave generic axes for the PPC – capital goods and consumer goods. This shows a lack of contextualisation</li> <li>Some students did not label the axes for the PPC or provided incorrect labels such as factors of production</li> </ul> <p><b><u>Content</u></b></p> <ul style="list-style-type: none"> <li>Some students mixed up allocating more land to vegetable farming and increasing the quantity of land for the economy. As such, the change was incorrectly reflected on the PPC</li> </ul>   |            |
|  | <p><b>ii. using advanced technology e.g. robotics by high-tech vertical farms in vegetables production</b></p> <p>High tech vertical farms adopt advance technology for farming more productively. Moreover, growing conditions such as temperature, humidity and lightning conditions can be replicated so that plants that do not normally thrive in the tropics can be grown indoors instead. These imply better quality of FOP thus more output of food given the same input/ increase in productive capacity toward food production i.e. potential growth which is represented by a pivotal shift in PPC for vegetable production</p> <p>Vegetables/farm produce (units)</p>  <p>X,Y</p> | <b>[3]</b> |
|  | <p><b>Markers' Comments</b></p> <p><b><u>Skills</u></b></p> <ul style="list-style-type: none"> <li>Many students gave generic axes for the PPC – capital goods and consumer goods. This shows a lack of contextualisation</li> </ul> <p><b><u>Content</u></b></p> <ul style="list-style-type: none"> <li>Many students explained how technology would decrease the cost of producing vegetables leading to potential growth, but missed out on the link to the increase in quality of factors of production leading to an increase in productive capacity</li> <li>Several students incorrectly explained how the vertical farms would enable the production of both goods to increase.</li> </ul>  |            |

|     |   |     |
|-----|---|-----|
|     | <ul style="list-style-type: none"> <li>Some students incorrectly explained that the cause of potential growth is an increase in quantity/quality of goods produced.</li> </ul>  |     |
| (b) | <p><b>With reference to Extract 1 and using a demand-supply diagram, explain why there is an increase in the price of seafood during Chinese New Year.</b></p> <p>Demand factor- CNY → fish symbolise abundance for the Chinese; Pomfret for its taste → increase in taste and preference for seafood during CNY → increase in demand.</p> <p>Explain price mechanism briefly:<br/>At the original equilibrium price, there is shortage. This leads to an upward pressure on price of seafood resulting in a rise in the equilibrium price</p> <p>Show correctly labelled diagram</p>   | [5] |
|     | <p><b>Markers' Comments</b></p> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Most students understood that a diagram is required alongside explanation of the change in DD and how price adjusted.</li> <li>Many students provided an incomplete explanation of the price adjustment process. Common omissions include stating that the shortage occurred at the <b>original price</b>.</li> </ul> <p><b>Content</b></p> <ul style="list-style-type: none"> <li>Many students did not explicitly state which non-price determinant of DD changed, and as a result led to the rise in DD. Please note that it is necessary to use the context to identify the relevant non-price determinant of DD, for sound economic analysis.</li> </ul> |     |
| (c) | <p><b>With the aid of a diagram, explain how Singapore Food Agency's grants can address possible shortages in the vegetable market.</b></p>   | [3] |

Shortage is created when supply fell from  $SS_0$  to  $SS_1$  and that quantity demanded is more than quantity supplied ( $Q_s < Q_d$ ) at the original price  $P_0$ .

Subsidies on local spinach would reduce the COP and increase the SS of local spinach. Supply could increase to  $SS_2$  or close to  $SS_2$ . With an increase in supply, shortage can be addressed.

Correctly drawn and labelled diagram



### Markers' Comments

#### Skills

- Some students did not label the axes of the diagrams or did not indicate the direction of shift of the curves with arrows.
- Most students did not acknowledge the existence of shortage before the grant.
- Hence, most students did not answer the question pertaining to how the grants would address possible shortages. Instead, most just explained how the grants would result in an increase in supply and the change in the market equilibrium.
- Some students drew a diagram but did not provide any reference or explanation of the diagram. Doing so will cause the diagram to be disregarded.

#### Content

- A majority of students correctly inferred that a grant would reduce firms' cost of production thereby increasing the SS of vegetables.
- A few students seem to confuse 'price' with 'cost'. These two terms are not interchangeable. 'Price' pertains to consumers and this is what they pay for a good. 'Cost' pertains to producers and this is their cost of production.

(d)

Explain whether the Singapore Food Agency's decision to provide grants to help companies accelerate efforts to meet 30 per cent of Singapore's nutritional needs with locally produced food by 2030 is a rational one.

[6]

|  |  |  |
|--|--|--|
|  | <p>Marginal Benefits of providing subsidies for an additional unit of activity (increased food production)</p> <ul style="list-style-type: none"> <li>- Greater self-sufficiency</li> <li>- Healthier as it is fresher</li> <li>- Bring in new technology in production</li> <li>- More stable food prices as less subjected to weather conditions</li> <li>- Generate production, revenue for firms and job opportunities</li> <li>- Create potential and actual growth</li> </ul> <p>Marginal Costs of providing subsidies for an additional unit of activity (increased food production)</p> <ul style="list-style-type: none"> <li>- Strain on government's budget</li> <li>- Opportunity cost as subsidies could be use on the next best alternative eg education</li> </ul> <p>Assuming that there is no constraint, as long as there is net benefit (i.e. <math>MB &gt; MC</math>) , it is a rational decision up to the point where <math>MB=MC</math> where society's welfare is maximised. Total benefits must outweigh total costs.</p> <p>OR</p> <p>Whether it is rational may also depend on perspectives, and information. The allocation of grants to high tech farms may mean less in other sector (e.g art and culture). The decision may not be a rational one from the other sector point of view</p> |  |
|  | <p><b>Markers' Comments</b></p> <p><b><u>Skills</u></b></p> <ul style="list-style-type: none"> <li>• Some students presented their answers in a table or point form. However, answers should be presented in prose form.</li> <li>• Some students also merely quoted or lifted from the extracts without any explanation. This is insufficient as there is a need to link the extracts to economic concepts learnt in order to gain credit for the points mentioned.</li> <li>• Some students did not conclude with a judgment on whether the decision was a rational one and the conditions that led to that conclusion</li> </ul> <p><b><u>Content</u></b></p> <ul style="list-style-type: none"> <li>• Most students are familiar with the criteria for rational decision making and accurately referred to various components of the DMF in their answers.</li> <li>• In explaining possible costs of the decision, many students noted that benefits from next best usage of the resources will be forgone but did not make the explicit link to opportunity cost.</li> </ul>   |  |