EUNOIA JUNIOR COLLEGE
JC2 Preliminary Examination 2018
General Certificate of Education Advanced Level
Higher 2

Economics

Paper 1 Case Studies

9757/01

11 September 2018

2 hours 15 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name, civics group and question number on the work you hand in.
Write in dark blue or black pen on both sides of the paper.
Begin your answer to each question on a fresh sheet of paper.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, **fasten your answers to Question 1 and Question 2 separately.**
The number of marks is given in brackets [ ] at the end of each question or part question.
Please note that Paper 1 takes up 40% of the total score.

This document consists of **7** printed pages and **1** blank page

Question 1: Prosperous Phosphorous

Table 1: World and regional growth in fertiliser demand, 2014 to 2018

Region	Nitrogen	Phosphate
World	1.4%	2.2%
Africa	3.2%	2.7%
Americas	1.6%	2.4%
Asia	1.3%	2.2%
Europe	1.1%	1.1%
Oceania	1.2%	1.2%

Source: *Food and Agriculture Organisation of the United Nations,* accessed 14.08.18

Extract 1: The essential element

The term phosphate rock is used to denote any rock with high phosphorus content. Some phosphate rock is used to make calcium phosphate nutritional supplements for animals. Pure phosphorus is used to make chemicals for use in industry. The most important use of phosphate rock, though, is in the production of phosphate fertilisers for agriculture. Virtually all common fertilisers comprise nitrogen, phosphorus and potassium, NPK for short.

Without phosphorus, we cannot produce food. As an essential nutrient in fertilisers for food production, phosphorus has no substitute. Phosphorus ensures soil fertility and high crop yields, supports farmer livelihoods and ultimately food security of the global population. Yet the world's farmers depend on phosphorus sourced from finite phosphate rock, which is becoming more scarce, expensive and is concentrated in only a few countries: Morocco alone controls three-quarters of the world's remaining high-quality phosphate reserves.

At the same time, inefficient use of phosphorus throughout the food systems is polluting our rivers and oceans causing toxic algal blooms.

Adapted from *Minerals Education Coalition & Phosphorus Futures*, accessed 20.06.18

Extract 2: What's shaping the future of phosphorus?

Numerous global trends have caused the demand for phosphorus to increase at an unsustainable rate. Especially in developing regions, rapid population growth has led to increased phosphorus demand, with the rate of NPK fertiliser increasing by over 600 percent from 1950 to 2000. In developed regions, on the other hand, the shift towards a diet of meat and cheese has also increased phosphorus demand, since meat and dairy contain a significant proportion of phosphorus. As a result, countries everywhere face rising demands for phosphorus, which has led to precarious markets.

In 2008, the price of phosphate fertiliser almost doubled because of increased demand for fertiliser (due to more meat consumption) and biofuels, and a short-term lack of availability of phosphate rock.

The U.S., which has 25 years of phosphate rock reserves left, imports a substantial amount of phosphate rock from Morocco, which controls up to 85 percent of the remaining phosphate rock reserves. Despite the prevalence of phosphorus on earth, only a small percentage of it can be mined because of physical, economic, energy or legal constraints.

Fellow associate at McGill School of Environment, Dr Elena Bennett is concerned that major phosphorus-producing countries could drive up its price if they wanted to.

"One thing that worries me is the concentration of phosphorus in just a handful of countries," says Bennett. "OPEC has many more countries than those that currently produce the majority of phosphorus, and yet effectively controls the price of oil worldwide."

"If these suppliers decided to form an "OPEC for phosphorus", they could significantly and suddenly increase the price of food."

Adapted from *Mining Technology 2016* and *Earth Institute 2016*, accessed 24.06.18

Extract 3: Morocco's Office Cherifien des Phosphates (OCP) to build $230 million fertiliser plant in India

Morocco's national phosphate company and the Indian firm Kribhco announced the construction of a new $230 million fertiliser plant in Andhra Pradesh.

The 50/50 venture will be located in the city of Krishnapatnam and have the capacity to process up to 1.2 million tons of NPK fertiliser.

Indian Prime Minister Narendra Modi has been encouraging the "Made in India" movement, pushing for new employment opportunities in the manufacturing sector, since he came to power in 2014. The fertiliser sector is one of 25 identified by the Modi administration as exhibiting high potential for profitable growth in India.

"OCP has always been, and remains fully committed to contribute to India's agricultural development," Chairman Mostafa Terrab said in a statement announcing the venture. "As one of the major cooperatives in India, Kribhco is an excellent partner to develop a farmer-oriented agricultural input joint-venture. This partnership is designed to be truly a win-win project for all the stakeholders involved but foremost for India's agriculture and particularly for Indian farmers."

Adapted from *Morocco World News*, accessed 24.06.18

Extract 4: The shortage of phosphorous resource

One area that should be prioritised in reducing phosphorus is the smarter use of fertiliser. In most cases, farmers are unaware of how much fertiliser they need. For good reason - the amount of fertiliser a farmer may need is highly dependent on environmental conditions such as soil, temperature, and weather patterns. As a result, many farmers in developing countries are not able to accurately gauge their fertiliser requirements, leading to much waste. Thus, a valuable resource is wasted and becomes an environmental risk to water supplies, just because some people were never educated.

To combat this lack of information, the United Nations Food and Agricultural Organisation is putting together a task force to work together with local and state governments. It hopes to provide accessible information to farmers, emphasising ideals of conservation and long-term sustainability of phosphorus. This task force is not unprecedented and draws inspiration from past successful initiatives. The University of Wisconsin, in concert with the Wisconsin government, put together a program called the Wisconsin Phosphorus Index, which helps farmers accurately predict how much phosphorus that they will need. By promoting past sustainable practices that have a track record of success, organisations like the United Nations will hopefully be able to increase awareness amongst local communities.

Another area that can be examined to increase phosphorus supply is recycling waste. In the past, farmers were able to sustain the quality of their soil largely through household waste. Even though animal manure is still widely used, human waste is also a valuable source of phosphorus. Instead of disposing of it as sewage, human waste has potential as an alternative fertiliser. Moreover, many countries across the world are undergoing intensive research to find innovative ways to efficiently recycle waste. It is important that the international scientific community communicates their findings to one another to promote the best long-term phosphorus recycling methods. Additionally, areas that might not be able to afford such advanced levels of technology need to receive assistance from

non-governmental organisations (NGOs) and the United Nations. Since some of these recycling procedures are difficult to keep up without high development levels, countries must have access to at least rudimentary recycling processes. In this way, countries will be able to extend their current supplies of phosphorus.

While there are numerous measures that can be implemented in order to promote more long-term phosphorus supply sustainability, they cannot be effective without cultural changes as well. Meat and dairy, for example, take up immense supplies of phosphorus, and yet people are consuming these products at unprecedented levels. Therefore, it is increasingly necessary to promote a plant-based diet to reduce the amount of phosphorus consumption.

Adapted from *Harvard International Review 2016*, accessed 16.06.18

Questions

(a) Compare the fertiliser demand growth rates for nitrogen and phosphate between Africa and the Americas. [2]

(b) State how the following goods are related [1]

(i) phosphorous and meat

(ii) meat and biofuels [1]

(c) Explain **two** possible conditions that will encourage the successful formation of "an OPEC for phosphorous". [4]

(d) Using a diagram, explain how a price floor on agricultural crops could theoretically improve the living standards of Indian farmers, if implemented as part of the farmer-oriented initiative. [3]

(e) Identify **a** normative statement in Extract 4. [1]

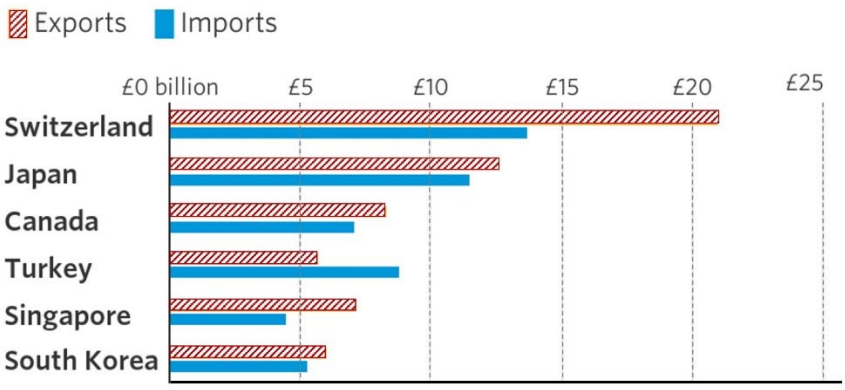
(f) Discuss whether the Indian government had sufficient information to make a rational decision to develop its phosphorous industry. [8]

(g) Assess the relative effectiveness of different policy approaches in response to the phosphorous shortage issue. [10]

[Total: 30]

Question 2: Weathering the Wind and Rain of Trade

Figure 1: UK trade balance with trading partners, 2016



Source: *Office of National Statistics*, accessed 22.06.18

Extract 5: Will the wave of protectionism make international trade great again?

Unquestionably, international trade flows have exploded throughout the century. The main objective for countries is to maintain a favourable trade balance. Most countries take the position to export as much as possible and import as least as possible; unless the lower priced imports are directly consumed for the exported products. Despite the arguments in favour of free trade, some of the world's wealthiest and most influential economies are moving away from the long-term trend of trade openness. Protectionism is in.

An example is Brexit, where UK voted to leave the European Union (EU), a "single market" allowing goods, finance and people to move around freely within. It is not only Britain that is showing signs of isolationism. US president Donald Trump has been very vocal with his protectionist promises, against the background of US total trade deficit that is projected to grow to about $566 billion in 2017, with the goods deficit with China alone contributing nearly half of US total trade deficit. He argues that China is stealing American jobs and commercial secrets, while breaking the rules of international trade by manipulating its currency and subsidizing their local manufacturers and exporters.

A vote against free trade is a problem for Asia – and especially for Singapore. For much of Asia, trade has been a key driver of economic growth. For example, in 2014, trade totalled 351% of Singapore's total economic output, much more than compare US trade totalling 30% of its GDP. If there are higher trade tariffs on Asia, it would result in higher prices for goods produced in Asia and hurt export revenue. At the World Economic Forum this year, Chinese President Xi Jinping was applauded when he said, "We must remain committed to free trade. No one will emerge as a winner in a trade war. Pursuing protectionism is just like locking oneself in a dark room. Wind and rain might be kept outside but so are light and air." The value of free trade is obvious: things being produced by those most cost efficient at production makes us all aggregate better off with higher consumption, lower cost of living and more jobs.

Asia needs to find new opportunities for global trade. British government ministers are developing plans for securing preferential trade arrangements with former colonies (including Australia, New Zealand, Singapore, Malaysia and Africa) to cushion the blow of Brexit – a Commonwealth Trading Bloc. This idea has been endorsed by former Australian Prime Minister Tony Abbott saying "Brexit is not a vote against free trade because the EU has acted as a protectionist bloc for its members against imports from outsiders".

Members of the business community in Singapore are keen on the Commonwealth Trading Bloc with the UK after its exit from EU. While the impending trade war between the US and China may have "limited" direct negative impact on Singapore's economy, it can have negative spill-over effects on global supply chains and weaken Singapore export-led growth. Hence the potential gains from free trade with Commonwealth members can cushion these negative spill-over effects for Singapore.

Adapted from *Thomson Reuters*, 31 Mar 2017, and *ASEAN Today*, 27 April 2017

Extract 6: Why leaving the EU could eventually be to UK economic advantage

The economic case for Brexit is not that there would be large economic gains; at least not in the short term. In fact, it could hurt UK economic growth and employment. Outside EU, UK would bear additional costs of dealing with the EU. Trade with EU countries might be worth about 10 per cent of GDP by 2030. If we faced average tariffs and non-tariff barriers of around 15 per cent, the loss could be 1.5 per cent of GDP.

While Brexit negotiations are still on the way, firms already seem more reluctant to take on new staff. Data from Adzuna, a popular job-search website, suggests that in the week after Brexit, there were one-quarter fewer new jobs. While some Britons struggle to find new jobs, others may be losing theirs. The search for "applying jobseeker allowance'', an unemployment benefit, has increased about 50% in the first fortnight in July alone compared to the entire month of May. Businesses are cutting investment, too. An example is Deutsche Bank. The relocation of jobs from UK to Germany as early as next year, ahead of the March 2019 deadline for Brexit. It is a real concern as the bank won't be able to conduct business throughout Europe once the UK leaves the union.

Nonetheless, we should not assume away all the economic benefits of Brexit just by stories of large negative impacts. Benefits could outweigh the losses. There could be around 2 per cent of GDP gains made from the new free trade agreements with non-EU countries. UK would struggle less than when in EU because there are different interests in play in getting 28 countries plus the trade partner to agree. Overall, these effects could eventually add up to about a 0.5 per cent gain to GDP by 2030, though that's not guaranteed.

Adapted from *The Telegraph*, 26 May 2016 and *The Verdict*, 2 August 2017

Extract 7: Dairy products "may become occasional luxuries" after UK leaves EU

Everyday dairy staples such as butter, yoghurt and cheese could become "occasional luxuries" in UK after Brexit, with price rises being caused by the slightest delay in the journey from farm to table, a report by the London School of Economics finds. There are increasing concerns who will bear the cost of the rise in prices of imported dairy products.

If the UK crashes out of the EU with no deal and defaults to World Trading Organisation rules, prices will almost certainly rise as dairy products, along with meat, attract high tariffs. A milk product with a fat content of 3% to 6% will likely attract a tariff of 74%, while fresh mozzarella is rated at 41% and unripened cheese at 68%. Any import tariff, has an effect akin to an indirect tax on UK dairy retailers, such as Tesco, which raises the price of dairy products in the UK. Hence, there are rising concerns if UK dairy retailers or consumers will bear more of the impact of this indirect tax.

UK's dairy production deficit has been put in the spotlight after repeated warnings that the country needs to rely less on imports to feed the population. UK does not produce enough milk to keep up with demand, creating an over-dependency on the EU, including on dairy-surplus countries such as Ireland, Germany, France, Belgium and Denmark for everyday dairy staples.

Arla is the largest dairy company in UK with a turnover of £2.6bn and supplies the big supermarket chains including Sainsbury's, Morrisons and Asda with branded and own-label products. It is a pan-European cooperative with production facilities in 11 countries supplied by its 11,200 dairy farmers, 2,400 of which are British. Commenting on the LSE report, Arla believed that Brexit might bring opportunities to expand the dairy industry in the UK, boosting the country's declining food security levels. However, increasing the UK's milk pool and building the infrastructure for us to be self-sufficient in dairy will take years.

Adapted from *The Guardian*, 18 July 2018

Questions

(a) (i) Using the concept of opportunity cost, account for UK's trade balance with Singapore. [2]

(ii) Explain **a** possible effect on Singapore's pattern of trade with UK if the plan for the Commonwealth Trading Bloc is realised. [2]

(b) Explain how "EU has acted as a protectionist bloc for its members against imports from outsiders" (Extract 5). [3]

(c) Using an AD/AS diagram, explain the combined effects of "some of the firms moving out of the UK because of Brexit'' and "applying jobseeker allowance'' on UK economic growth and employment in the short-term. [5]

(d) Assess whether UK dairy retailers or consumers are more likely to bear the impact of the indirect taxes as mentioned in Extract 7. [8]

(e) President Xi's belief is that "pursuing protectionism is just like locking oneself in a dark room. Wind and rain might be kept outside but so are light and air." (Extract 5)

Discuss why China differs from US in their perspective towards protectionism. [10]

[Total: 30]

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