



RAFFLES INSTITUTION  
2022 YEAR 6 PRELIMINARY EXAMINATION  
Higher 1

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**ECONOMICS**

**8823/1**

Paper 1

**30 August 2022**

**3 hours**

Additional Materials:      Answer Paper

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**READ THESE INSTRUCTIONS FIRST**

Write your name, index number and CT 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 diagrams, graphs or rough working.  
Do not use paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

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

Use the cover sheets and tie your answer to the questions **separately**.

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This document consists of **4** printed pages and **2** blank pages.



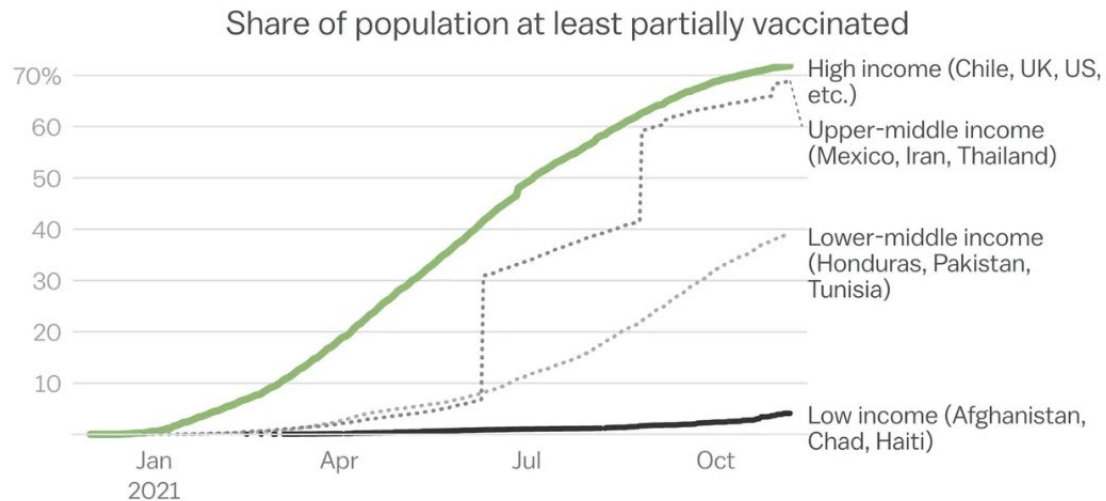
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Answer **all** questions.

### Question 1: Pharma Mia, here we go again

**Figure 1: Share of population at least partially vaccinated**



Source: <https://www.vox.com>, 9 November 2021

### Extract 1: How to think about vaccines and patents in a pandemic

Tech has, potentially, saved hundreds of thousands of lives from the novel coronavirus pandemic. Cutting-edge biotechnology and artificial intelligence (AI) have allowed scientists to develop vaccines for COVID-19 in less than a year, which is the fastest in terms of vaccination development for a major disease.

With any luck, the world will be awash in COVID-19 vaccines by the end of the year. For now, though, it is not, and of the billion or so doses that have been produced the vast majority have been administered in richer countries. Deaths, by contrast, are increasingly concentrated in poorer ones, like India, where only nine in every 100 people have been jabbed, compared with 64 in America. Some governments are floating radical options to remedy the mismatch. India and South Africa proposed that members of the World Trade Organisation waive intellectual-property (IP) protections for COVID-fighting technologies, including vaccines. Increasing the number of manufacturers globally would reduce prices, making vaccines more affordable to poorer countries. It would stabilise supply, minimising disruptions of the kind that occurred when India halted vaccine exports amidst a surge of COVID-19 cases. It is, therefore, essential to remove the legal barriers that hinder the scaling-up of the global vaccine production.

Yet industry interests are right to say that liberating vaccine IP would not unleash a flood of new production. Most of the world's vaccine-making capacity is already in use. Other more challenging constraints on production include the limited availability of raw materials and expertise needed to safely produce doses. Export restrictions by governments also interfere with supply chains.

Arguments for retaining IP protections maintain that patent holders are the rightful owners of their inventions and are thus entitled to existing protections. With respect to COVID-19

vaccines, the claim is that pharmaceutical companies own these vaccines, which are the products of their labour; no one can rightfully take what is theirs.

In reply, the public has invested heavily, and these products are theirs' too. Even when the translational part of product development is carried out by for-profit companies, this would be impossible without enormous upstream public investment. A 2021 review of published research on the technologies used in COVID-19 vaccines found that research and development on these technologies were funded primarily by the governments.

Source: <https://govinsider.asia>, 21 May 2021 and <https://www.economist.com>, 22 April 2021

### **Extract 2: COVID Vaccines: Will drug companies make bumper profits?**

Typically, pharmaceutical companies charge different prices in different countries, according to what governments can afford.

"Right now, governments in the rich world will pay high prices, they are so eager to get their hands on anything that can help bring an end to the pandemic," says Emily Field, head of European pharmaceutical research at Barclays. As soon as more vaccines come on stream, probably next year, competition may well push prices lower, she says.

The World Health Organization meanwhile has warned wealthy countries against hoarding COVID-19 vaccines for booster shots as they try to fight off the new Omicron variant,

Source: *BBC news*, 18 December 2020 and *Reuters*, 9 December 2021

### **Extract 3: How Should We Allocate Scarce Medical Resources?**

The COVID-19 pandemic has also undermined capacity and efforts to address other health needs that are just as pressing as the virus itself, particularly in low-income and middle-income countries (LMICs). Ongoing pressure on governments to act on COVID-19 now to save 'immediately identifiable lives' rather than 'statistical lives at risk' has had and will continue to have both short- term and long- term negative consequences for health. COVID-19 and non-AIDS cancers were the leading causes of death among HIV-positive people in the UK in 2020, with AIDS and cardiovascular disease also cutting lives short. Overall, six out of seven deaths were due to non-AIDS causes.

Source: <https://hbr.org>, 29 April 2020 and <https://www.aidsmap.com>, 21 April 2022

### **Extract 4: Food Markets During COVID-19**

Several countries have imposed food export restrictions during the 2008 food price crisis, and some are now re-introducing them. During COVID-19, 22 countries already initiated export restrictions on one or more food products. The export restrictions are particularly significant when they concern staple foods, especially those in which countries imposing the restrictions hold a sizable share of the global market. While such restrictions are most likely to threaten the food security of those countries with both a low food self-sufficiency ratio and relatively high levels of hunger, export prohibitions may in the long run also hurt the countries imposing restrictions.

Thailand is stepping up its battle against food inflation by extending price caps on dozens of essential goods for another year and funding energy subsidies for an extended period. The government will continue controlling prices of essential goods and services such as rice, sugar, medicines, fertilizers and healthcare services until June next year.

Source: <https://www.bloomberg.com>, 17 June 2022

### **Extract 5: Polluter bailouts and lobbying during COVID-19 pandemic**

Polluting industries around the world are using the coronavirus pandemic to gain billions of dollars in bailouts and to weaken and delay environmental protections. Some of the biggest fossil fuel-producing countries are injecting taxpayer money into propping up polluting industries.

The fossil fuel industry, which already benefits from a \$5 trillion-a-year subsidy, according to the IMF, has had the biggest wins during the coronavirus pandemic in the US and Canada. The controversial Keystone XL pipeline to transport tar sands oil from Canada to the US got the go-ahead, with \$5bn in financial support. Other pipelines continued construction despite the lockdown. Republican senators asked the US federal government to “reduce, delay or suspend” taxes due on oil, gas and coal, while the National Mining Association lobbied to cut \$220m in taxes intended to support coal miners affected by black lung disease.

In the US, aviation got a \$60bn bailout package and the suspension of many taxes. In the UK, major carrier easyJet got a £600m loan. In 2021, the UK government gave airlines nearly a quarter of a billion pounds in free pollution permits in a single year, enough for the entire industry to dodge a carbon emissions cap and trade scheme entirely. The government’s generosity meant not only could the aviation industry pollute for free, but airlines were left with 900,000 excess permits that they could keep or sell on.

Governments currently face a stark choice: bail out polluting businesses, using that as leverage to impose environmentally-minded reforms, or let them return to their carbon-intensive activities as an economic quick fix. The UK’s oil and gas industry warns that 30,000 jobs could be lost because of the pandemic and the current low oil price. The UK air transport sector, which contributes about 4.5% towards its GDP and supports 1.6 million jobs, is also causing contortions among politicians torn between saving existing jobs and conserving the planet. MPs are demanding a conditional rescue for the airline industry, without which tens of thousands of jobs will be lost, in exchange for the firms’ agreement to off-set their emissions by, for example, planting trees.

Source: Various

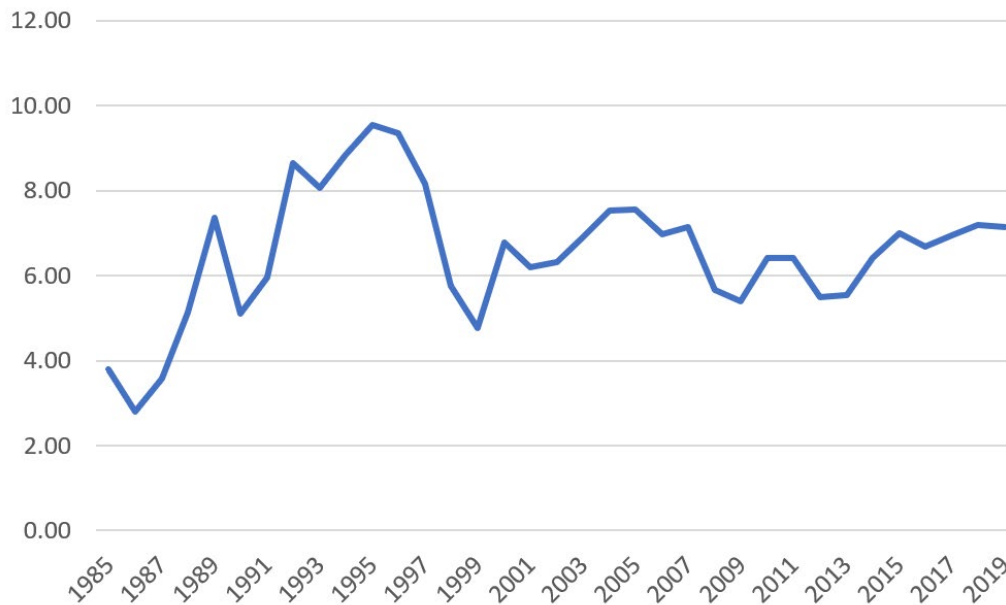
- a. Table 1 shows the share of population at least partially vaccinated. What are the major trends shown? [2]
- b. Assess whether the statement in Extract 1 that “the public has invested heavily, and these products are theirs’ too” is a normative or positive one. [4]
- c. Using demand and supply analysis, to what extent will “waiving intellectual-property (IP) protections for Covid-fighting technologies” make pharmaceutical products more accessible to countries, especially poorer countries. [8]
- d. Explain the meanings of both non-rivalry and non-excludability, and comment on the extent to which new technologies (ideas) to fight Covid-19 has these characteristics. [7]
- e. With reference to Extract 3, explain the concepts of scarcity, choice and opportunity costs that governments face during the Covid-19 pandemic. [3]
- f. Explain one possible unintended consequence in each of the following situation: [6]
  - i) “Export prohibitions” in the market for food in a country imposing these restrictions.
  - ii) A “price cap” in the market for an “essential good” like rice.
- g. Taking the aviation industry as an example, explain carefully what is meant by a 'negative externality'. [3]
- h. Some people claim that governments “propping up polluting industries” by releasing more pollution permits and reducing carbon taxes (Extract 5) does more harm than good to the economy. [12]

Discuss the extent to which you agree with this view.

[Total: 45]

## Question 2: The Vietnam Economy

**Figure 1: Vietnam - Annual GDP growth (%), 1985-2019**



Source: World Bank, 2022

**Table 1: Selected development statistics for Vietnam and Singapore (2019)**

	Vietnam	Singapore
HDI country rank out of 187 countries	117	11
Life expectancy at birth (years)	75.4	83.6
Expected years of schooling (years)	12.7	16.4
Mean years of schooling (years)	8.3	11.6
GNI per capita (2017 PPP\$)	7,433	88,155

Source: HDR 2020

### Extract 1: Vietnam's economy to overtake Singapore's in 10 years

Vietnam has been a development success story. Economic reforms since 1986, coupled with beneficial global trends, have helped propel Vietnam from being one of the world's poorest nations to a middle-income economy in one generation. Between 2002 and 2021, GDP per capita increased 3.6 times, reaching almost US\$3,700. Vietnam's economy will be bigger than Singapore's in a decade if current growth conditions continue, a DBS report said.

Singapore's economy stands to benefit from Vietnam's continued growth. Growing affluence in Vietnam create tremendous growth opportunities for Singapore companies and investors. More Singapore companies are choosing to invest in Vietnam, riding on and contributing to the country's steady economic growth. Singapore's economy stands to benefit when foreigners from the region visit the country as tourists, to attend its schools or do business, for example.

Source: todayonline.com, 15 Aug 2019

## Extract 2: The Cost of Climate Change in Vietnam

Three of Vietnam's characteristics make it particularly vulnerable to climate change.

- High dependence on agriculture, and climate change may negatively impact farm revenues.
- Located at the end of several trans-boundary river basins, and climate change may influence river flow undesirably either through changes in precipitation/runoff patterns or by altering the behavior of upstream countries.
- Low lying coastline is vulnerable to rising sea levels which may lead to population displacement and significant infrastructure damage.

To understand the total cost of climate change, it is important to consider the cumulative effects of the different ways in which different sectors of the economy such as agriculture, transport, and hydropower generation are affected.

### Agriculture

When considering only changes in temperature and precipitation, climate change has a fairly small impact on agriculture. The impact is modest for two reasons. First, the projected temperature and precipitation changes to 2050 are not sufficiently large to substantially reduce yields on average. Second, and importantly, agriculture is expected to decline as a share of Vietnam's economy regardless of any effects of climate change.

### Transport

In contrast to agriculture where climate variation may influence production in a given year but not necessarily over time, the impact of climate change on roads will be cumulative in nature and consequently may be relatively large. If a road is washed away, not only is the initial investment lost, but the negative effect on infrastructure remains until the road is rebuilt, and rebuilding roads diverts money away from the construction of new roads. Therefore, climate change will reduce the rate at which new road stock is accumulated which in turn slows the rate of productivity growth.

### Hydropower

Changing rainfall patterns and higher evapotranspiration in combination with higher demand from farmers for irrigation water could reduce the flow volumes in Vietnam's rivers. Vietnam's hydropower generation capacity is predicted to decrease only slightly by 2041–50.

The implications of the research findings:

- Climate change is unlikely to substantially impact overall growth and development prospects for at least the next few decades.
- The findings suggest that there is a window of opportunity for Vietnam to benefit from preemptive action.
- Even under current climate, upgrading unpaved roads to better withstand precipitation is likely to be more cost-effective over the longterm than not upgrading roads and repairing damages as they occur. With climate change, these benefits are likely to increase.
- Carefully chosen adaptation policies in other areas such as agriculture, water resources, and urban infrastructure design are likely to provide significant benefits.

*Source: The United Nations University World Institute for Development Economics Research*



### **Extract 3      Robots on the rise**

Robots have become a hot commodity because of the Covid-19 pandemic. Multiple technology manufacturers have reported increased demand for their bots, from drone-like machines that can roam hallways to make deliveries to AI-powered customer service software.

While an increase in automation can be good for educated workers and help to stimulate the economy, studies have shown that low-skilled workers will become more susceptible to unemployment and wage depression. In the last 20 years, jobs lost to automation stopped being replaced by an equal number of similar workplace opportunities.

*Source: The Guardian, 27 November 2020*

### **Extract 4      Achieving Vietnam's High-income Aspirations**

Vietnam's leadership has set an ambitious goal of reaching high-income status\* by 2045. A new World Bank Poverty and Equity report examines what is needed to sustain the upward economic mobility and economic security of the millions who have left poverty.

Poverty in Vietnam declined substantially between 2010 and 2020 amid strong economic growth, education gains, and shifts away from agriculture. However, in the latter half of the decade, consumption growth among richer households outpaced poorer ones, widening the gap between rich and poor. To become a high-income nation by 2045, equitable human capital formation and higher worker productivity are key. To attain the 6.7 percent average annual economic growth rate needed to reach high income status by 2045, growth in productivity per worker will need to increase from 5.3 percent recorded over 2012-2018 to 6.6 percent.

Vietnam will face challenges in transitioning to higher-skilled jobs without continuing reforms in education, skills development, and a transformation of the labor market, which is characterized by low wages, slow growth of high-skilled occupations, high informality, and an aging workforce. Improving the quality of higher education will be an important step.

While rapid economic growth has lifted many people out of poverty, a large group of the population remains vulnerable. Vietnam's social assistance coverage lags that of many East Asia and Pacific neighbors.

Fiscal policy can play a critical role in accelerating Vietnam's progress toward high-income status in an inclusive way. To finance the public investments needed to eliminate poverty and grow the economically secure and middle classes, Vietnam can broaden its tax revenue base (personal income tax, property tax), explore the use of new taxes which both raise revenue and address negative externalities (such as health taxes on alcohol and environmental taxes on carbon). In addition, public expenditures need to be directed in the right way. Inefficient and inequitable expenditures such as electricity subsidies, which encourage wasteful energy use while mostly benefitting richer households, could be redirected for more productive and inclusive purposes (social assistance measures such as direct cash transfers to the poor and unemployment benefits).

*Source: World bank, 28 April 2022*

*\* High-income countries are those with GNI per capita > US\$12,695 (World Bank classification as at Jul 1, 2021)*

- (a) With reference to Figure 1, summarise the main changes in Vietnam's GDP from 1985 to 2019. [3]
- (b) (i) Explain the difference between GNI and GDP. [1]
- (ii) Extract 1 states that "Singapore's economy stands to benefit from Vietnam's continued growth". [4]
- Explain one way that 'Vietnam's continued growth' can increase Singapore's GDP and one way that it can increase Singapore's GNI.
- (c) With reference to Extract 2 and use of relevant economic analysis, comment whether the Vietnamese government ought to be concerned with the country's vulnerability to climate change. [7]
- (d) With reference to Extract 3, discuss how automation might worsen unemployment and increase income inequality. [8]
- (e) Discuss whether data given in Table 1 is sufficient for economists to compare the living standards between Singapore and Vietnam in 2019. [10]
- (f) Discuss whether supply-side policies aimed at labour markets are the most appropriate policies to help the Vietnam reach its goal of achieving 'high-income status by 2045' in an inclusive way. [12]

[Total: 45]

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