Question 1: Global Healthcare Issues

(a) With reference to Extract 1, explain how the rise of healthcare use could affect producer surplus in the market for healthcare. [2]

Rise of healthcare use increase the price of healthcare. The gap between the price that producers are willing to receive and the actual price they receive, which is their producer surplus, increase.

(b) 'Overuse of care by insured members, as well as overtreatment or overprescribing by medical practitioners' (Extract 1) contributes to the rise in healthcare cost.

Explain how the issue of moral hazard could arise in the health insurance market. [3]

In the case of insurance market, the insured individual has more information about their true risk profile or intention to engage in risky behavior, they can take advantage of this information by purchasing insurance policies at lower rates.

However, this creates an issue of moral hazard because now they now have less incentive to avoid engaging in risky behavior or take necessary precautions, as they know that any losses or damages will be borne by the insurance company. In other words, they are protected from the potential healthcare cost of their actions. When individuals in health insurance that covers a significant portion of their medical expenses, they may be inclined to seek healthcare services excessively or for relatively minor issue.

Consequently, there will be an overallocation of resources in the healthcare insurance market which can lead to higher costs for insurers and the overall healthcare system.

(c) 'There's long-standing debate over whether so many local nurses should be allowed to leave' (Extract 4).

Using demand and supply analysis, explain the impact on the following when local nurses are allowed to leave the Philippines.

(i) Wages of nurses in the Philippines [3]

Supply of nurses in the Philippines would fall when local nurses are allowed to leave the country. Consequently, there will be a shortage of nurses at the prevailing market equilibrium wage as quantity demanded would be more than quantity supplied. The shortage exerts an upward pressure on wage; thus causing wages of nurses in the Philippines to increase

(ii) Consumer expenditure on healthcare in the Philippines [4]

The increase in wages of nurses in the Philippines would result in an increase in the cost of producing healthcare services. Market equilibrium price of healthcare would increase while market equilibrium price would decrease.

Given PED inelastic given that healthcare is a necessity, an increase in price would lead to a less than proportionate increase in quantity demanded. Therefore, the increase in CE due to increase in price is more than the decrease in CE due to a decrease in quantity. CE on healthcare in the Philippines increases.

(d)	Assess the impact of medical tourism on the standard of living in a country.	[8]

Requirement 1: Increase in real GDP per capita

Medical tourism could boost India's economic growth; thus, allow for material standard of living (SOL) to improve. Medical tourism contributes to India's export revenue. An increase in export revenue would result in an increase in aggregate demand (AD) given AD = C + I + G + (X-M). Firms would experience an unplanned fall in inventory and would respond by raising production. The increase in domestic production translates to an increase in real GDP. Moreover, real GDP would further increase because of the multiplier effect. This is because income derived from higher levels of domestic production would increase following the autonomous increase of export revenue; thereby inducing additional rounds of consumption expenditure. In turn, real GDP per capita would increase under the assumption that the increase in production of final goods and services is more than any increase in population. Households are now able to afford more and better quality goods and services, thus indicating an improvement in material SOL.

Requirement 2: Inequality

Medical tourism could raise the price of healthcare services. Medical tourism could raise the demand and create a shortage in the healthcare market. Moreover, the cost of production for healthcare services may also increase. This is because the derived demand for medical staff and equipment would also increase. Given higher cost of production, producers would be willing and able to provide fewer units of healthcare services. Consequently, supply would fall and there would be a further shortage in the healthcare market at the prevailing market equilibrium price. There would be a significant increase in price of healthcare given that the combined increase in demand and fall in supply would create a significant shortage in the market. Low-income Indian households may be priced out of the market given that public healthcare services are already poorly funded (Extract 5). In other words, the government may not be able to provide sufficient subsidies to mitigate the increase in price. The market for healthcare services would be inequitable. Health outcomes for poorer households may deteriorate in the long term and this can be observed by a possible decline in HDI in the long-run, thus indicating an overall worsening of non-material SOL.

Overall, the impact of medical tourism on the standard of living in a country is a nuanced issue. While it can bring economic benefits and technological advancements, it can also exacerbate healthcare disparities and brain drain. It is crucial for governments to carefully manage the implementation of medical tourism to ensure that it benefits the entire population and does not worsen social inequalities.

Level	***Description***	***Marks***
L2	*A developed answer that takes into consideration:* • *Positive impact on material standard of living* • *Negative impact on non-material standard of living* • *Use of appropriate evidence from extract*	*4-6*
L1	*An underdeveloped answer that demonstrates basic knowledge*	*1-3*

A further 2 marks is awarded for evaluation points on ways whether the subnormal profits will persist into the long run and how cinema operators can respond to the falling profits.

(e) Discuss if supply-side policy is the most effective way to manage rising prices in the market for healthcare. [10]

Requirement 1: Supply-side Policy

Supply-side policies focus on increasing the production of goods and services to meet rising demand. In the context of healthcare, this would mean implementing measures aimed at increasing the supply of healthcare services, such as increasing the number of healthcare providers [Extract 3]. Increasing the number of healthcare providers could also promote competition. An increase in competition could encourage firms achieve productive efficient which could drive down prices by way of a fall in cost of production. All in all, producers would be willing and able to sell more units of healthcare services at each price level. Supply of healthcare services would increase which would result in a surplus at prevailing market equilibrium price. The surplus exerts a downward pressure on price; thus causing a fall in price in the market for healthcare.

Evaluation: *Expanding the supply of healthcare requires adequately trained and educated healthcare professionals. However, the global shortage of healthcare talent would make it challenging for a country to meet staffing requirements.*

Requirement 2: Demand-side Policy

Rising healthcare prices are often caused by factors such as an aging population and lifestyle-related diseases. While supply-side policies can help manage prices to some extent, they may not fully address the underlying demand for healthcare services. For this reason, governments can implement preventive care strategy [Extract 2] to reduce the demand for more urgent healthcare services. Consumers would be willing and able to buy fewer units of urgent healthcare services at each price level. Demand of urgent healthcare services would decrease which would result in a surplus at prevailing market equilibrium price. The surplus exerts a downward pressure on price; thus, causing a fall in price of urgent healthcare services. Overall, rising prices in the market for healthcare would be managed.

Evaluation*: The abovementioned outcomes could only materialize in the long-term. It will take about a decade for preventive care to produce discernable results [Extract 2]. As such, the preventive care strategy would not be able to manage rising prices immediate and the pressing issue of ensuring access to affordable healthcare would remain largely unresolved.*

In conclusion, while supply-side polices can play a role in managing prices in the healthcare market, they are not the sole solution. A comprehensive approach combining both demand-side policies such as addressing lifestyle related diseases and supply-side policies would be more effective in managing healthcare prices and ensuring accessibility and affordability for all. Short-term strategies should also be put in place to ensure access and affordability in the short-term. Policies such as subsidies and recruiting nurses from non-traditional sources would need to be ramp up until more financially sustainable policies bear fruit.

Level	***Analysis***	***Marks***
2	• *Answers **explain and consider** supply-side policy **and at least one demand-management policy**).* • *There will be consideration of the **difficulties or constraints** cinema operators given the rising popularity and strengths of online movie streaming.*	*4-7*

1	• *Answers show limited understanding of how merger helps cinema operators to compete with online movie competition.* • *Answers do not consider the strengths of online movie streaming which can make the competition difficult for movie operators.*	*1-3*

Level	***Evaluation***
3	*2 marks for one well-supported and developed evaluative point (or two evaluative points sufficiently supported).* ***Plus*** *1 mark for overall approach to manage rising prices effectively..*
2	*Answers provides one supported evaluative point.* ***Plus*** *A decision is made on whether merger is the best strategy.*
1	*Answers provide an evaluative point but unsupported.*

[Total: 30]

Question 2: Global Semiconductor Supply Chain

Mark Scheme for H2 Econs Case Study Question 2

(a) (i) Explain what is meant by countries specialising based on their comparative advantage. [2]

A country will incur a lower opportunity cost in the production of a good that uses more of the factors of production that it is well endowed in or has in abundance.

A country will have a comparative advantage in the production of a good over another country when it incurs a lower opportunity than the other country and it will specialise in the production of that good.

(ii) Using extract 7, explain an example of a country's specialisation based on her comparative advantage. [2]

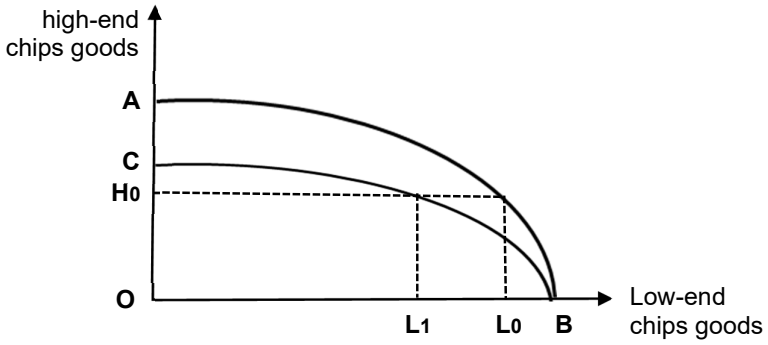
For US,
US specialises in R&D-intensive activities - core intellectual property (IP), chip design, and advanced manufacturing equipment,
Abundance in highly skilled workers and expertise in engineering talent, world-class universities, market-driven innovation ecosystem

East Asian countries,
Specialisation - manufacturing the chips
Abundance in specialised and complex capital (manufacturing plant), robust infrastructure and a skilled workforce.

For China,
Specialisation in assembly, packaging, and testing of chips
Abundance in less-skilled workers and less capital-intensive (lower technology capital)

(b) It is mentioned in Extract 9 that US bans exports of American-made manufacturing equipment and tools or components needed to produce high-end chips to China.

Using a PPC diagram for goods using low-end chips and goods using high-end chips, explain how the above US export ban will change the opportunity cost of producing goods using high-end chips in China. [4]



- *China's initial PPC for goods using high-end chips and low-end chips is AB.*
- *The ban will decrease the quantity of capital that China has to produce high-end chips hence decreases China's capacity to produce high-end chips consquently* ***decreasing her ability to produce goods using high-end chips***
- *China's PPC will* ***pivot inwards from AB to BC****.*
- *The* ***opportunity cost*** *of producing* OH_0 *of high-end chips* ***before*** *the ban was* BL_0 *of goods using low-end chips*
- *The* ***opportunity cost*** *of producing* OH_0 *of high-end chips* ***after*** *the ban is* BL_1 *of goods using low-end chips*
- *There is an* ***increase in opportunity cost*** *of producing goods using high-end chips from* BL_0 *to* BL_1*.*

(c) Explain the impact of US export restrictions of high-end chips to China on the profitability of a firm in the US chip industry. [4]

Impact on Revenue
- *Firm will see a significant fall in decrease in the demand for their high-end chips by China (evidence from extract 9)*
- *Lower its prices to eliminate its surplus of high-end chips*
- *Revenue = Price (AR) x Quantity, hence firm will see a fall in revenue*

Impact on Cost
- *Production process is on a 'large scale'*
  [evidence from extract 7: need for deep technical know-how and scale of production]
- *Decrease in scale of production may lead to a likely increase in average cost of production*

OR
- *Mention of average cost of production holding relatively constant with a constant returns to scale over a vary large output [i.e. AC remains constant over a large output]*

Impact on profits
- *Fall in average revenue and increase in average cost = fall in profit per unit*

OR
- *Fall in total revenue greater than fall in total cost*

OR [most lenient case]
- *Fall in total revenue and increase in total cost*

(d) Extract 10 states that the semiconductor industry contributed almost 7 per cent of Singapore's gross domestic product last year and that the country's ambition is to expand its manufacturing sector by 50 per cent by 2030.

Discuss whether the policies adopted by the Singapore government to expand the semiconductor industry will bring about inclusive economic growth. [8]

Explanation on inclusive growth – broad-based across industry, provides employment across workforce

Policies adopted to expand semiconductor industry to achieve economic growth
- *Policies to attract foreign firms to invest in Singapore semiconductor industry and to develop local firms to support the industry*
  - *Favourable tax – tax concession or lower tax rates for foreign investments in semiconductor industry*

- *Regulatory environment – less restrictions for setting up operations in the semiconductor industry e.g. labour restrictions*
- *Government support*
  - *building infrastructure and creating an ecosystem for semiconductor industry (ecosystem for design, prototyping, production and testing services for semiconductors)*
  - *grants for small firms and SMEs supporting the semiconductor industry to attract MNCs*
  - *subsidies for upskilling and reskilling of workforce - continuing education and training to ensure workforce is ready for the expansion of the semiconductor industry (to be revisited later)*
- *increase in investments by foreign and local firms in the semiconductor industry will increase I*
- *the global demand for semiconductors will increase with more use of technology in goods and services, there will be increase in exports of semiconductors*
- *AD will increase with increases in government investment in infrastructure, private sector investments (both foreign and local) and export demand in the semiconductor sector*
- *also there will be increase in LRAS in the economy through the semiconductor industry as there will be increase in productive capacity in the industry together with increase in labour productivity*
- *Both increases in AD and LRAS over a period, with AD increasing slower than LRAS, Singapore is likely to see a period of sustained economic growth*

Transition / address question

- *Singapore does not have a comparative advantage in semiconductor industry and to create one, she will need the help of foreign firms to provide the advanced technology, expertise and large funding*
- *Most of the policies are directed towards attracting global big firms (giants) to set up research and development facilities and high-value manufacturing plants in Singapore*
- *These MNCs, whilst able to help the government achieve economic growth, they are less able to ensure inclusive economic growth*
- *Expansion of the semiconductor industry cannot be achieved by depending solely on foreign firms either, the industry will require a large pool of skilled and talented workers and local firms to provide supporting services like prototyping and testing too to support the industry*

Policies adopted to ensure economic growth is inclusive

- *Policies to ensure local firms and workforce benefit from the expanding semiconductor industry*
  - *Subsidies to workers for continuing education and training to acquire skills relevant to the semiconductor industry – increase their employability and ability to earn higher wages*
  - *Through regulation of foreign investments to ensure some collaboration between local and foreign firms for the transfer of knowledge and technology to for local firms to support foreign firms – firms can increase the value of production i.e. produce higher value goods and service*
  - *Provide information portals and conduct campaigns to reach out to local firms and workers to join the semiconductor industry*

Conclusion / address question

- *The government can only implement policies to hope to achieve inclusive economic growth but it cannot guarantee one. Whether Singapore can achieve inclusive economic growth by expanding the semiconductor industry will depend on how responsive local firms and workers are to the policies implemented to help them benefit from the economic growth.*
- *Evidence from extract 10, that 70% of the 200 member SSIA are local SMEs does indicate that economic growth in this industry is not confined to MNCs but enjoyed by local SMEs, most likely, also employing many locals.*
- *The Singapore's semiconductor industry is very diverse from design, production to testing services creating jobs for both low to high skilled workers allow workers of all skill levels to contribute to the economic growth, allowing for inclusive growth*
- *The polices to expand the semiconductor industry may have achieved inclusive economic growth but there should not be an overdependence on the industry at the expense of the growth of other sectors of the economy*

Level	***Quality of analysis***	***Marks***
L2	• *Ability to explain intent of policies - for economic growth per se or for* ***inclusive*** *economic growth* • *Ability to explain how both types of policies contribute to economic growth* • *Ability to use AD/AS to explain economic growth* • *Ability to use case material to support arguments*	***4-6***
L1	• *undeveloped explanation of policies* • *explanation of policies in general without intent of policies* • *explanation of economic concepts without reference to question* • *stating rather than explaining and reasoning*	***1-3***
E2	*One developed/supported idea*	***2***
E1	*One unsupported evaluative idea*	***1***

(e) Discuss whether China should move away from specialisation and instead be self-sufficient in the semiconductor supply chain. [10]

- *China currently specialises in the assembly, packaging, and testing of semiconductors (the last stage of the supply chain) and does not have comparative advantage in design and manufacturing of chips. She is able to produce more of low-end chips and much less of high-end chips.*
- *China will need high-end chips to produce high-value goods and services with high-end chips technology.*
- *To be self-sufficient in the semiconductor supply chain, China must have the capability for the entire supply chain: three stages of production of chips, design, manufacturing and testing*
- *When China is self-sufficient, she will be able to also produce high-end chips*

Benefits of being self-sufficient

- *Less dependent on other countries for supply of chips*
- *Less affected by global demand and supply for chips hence less affected by global price of chips*

- *Indirectly, more stable chip prices hence more stable cost of production for goods and services that requires chips as a key input*
- *Ability to design their chips will enable China to produce high-end chips and to innovate and create new and more advanced chips (raise the quality of high-end chips)*
- *Create a new area of comparative advantage over many other countries as currently, – produce and create high-end chips and also to compete with the dominant producer US*
- *Ability to use high-end chips technology in China's good and services increasing the competitiveness of Chinese export goods and services – sustaining economic growth*

Cost of being self-sufficient

- *High cost of building chip manufacturing capability*
- *Manufacturing sophisticated semiconductor wafers required costly investments in (capital) equipment*
- *High cost of building chip manufacturing infrastructure*
- *Chip design is high risk – they may be many unsuccessful R&D projects to a few successful ones – high cost incurred for a successful chip design created*
- *High opportunity cost incurred when large sums of funds being redirected from other areas of need to fund this project of self-sufficiency in semiconductor supply chain*
- *Lower expenditures in key areas: health, housing, flood control systems, development of rural areas – opportunity cost could be lower standard of living for Chinese population*
- *Cost incurred in creating an innovative environment to encourage more startups – like silicon valley*
- *Costs incurred to support training and upskilling of workers to support self-sufficiency*

Extent of Constraints

- *Requires large amount of funds*
  - *current debt to GDP ratio is healthy at 68% of GDP compared to 133% for US*
  - *comparatively, China is able to borrow to obtain funds to help finance creating a self-sufficient semiconductor supply chain*
  - *such borrowing is self-financing as the spending will lead to economic growth in the future raising tax revenues (without increase in taxes) to pay off the debt*
- *Requires expertise in engineering*
  - *China, with a large population has many more STEM graduates than US (4 million vs 0.5 million) hence there should not be a constraint in this area but China will need to direct these graduates to contribute their knowledge and develop their expertise in the various production processes of the semiconductor supply chain, in design of chips, manufacturing process, equipment and machinery*
  - *China is not short of local talent*

Considering the cost, benefits and constraints

- *There is much benefit for China to be self-sufficient, but the cost of self-sufficiency is equally high and it is not mere monetary but non-monetary in terms of current living standards of Chinese*
- *US has been ahead of China in R&D spending, as a percentage of GDP. For China to be able to design and create their own chips, China will possibly need to spend much more on R&D as a whole or divert more funds away from R&D in other areas to the semiconductor supply chain*
- *The cost of producing their own chip, especially high-end chip will definitely increase the cost of production of goods and services using Chinese produced high-end chips compared to if they were to import the high-end chip*
- *Higher cost of production of these export goods will negate the export competitiveness of higher technology goods and services*

- *Global semiconductor supply chain produces the high-end chips at probably the least cost possible as all production stages incur the lowest costs possible based on each countries' comparative advantage*

Conclusion / Address Question

- *Currently, China has a comparative advantage in assembly, testing and packaging stage of the global supply chain but with advancement in technology, China will need more high-end chips but that does not mean China has to be self-sufficient in the semiconductor supply chain*
- *China can focus on the design stage of the supply chain for semiconductor, and leverage on countries that have a comparative advantage in chips manufacturing to obtain its much needed high-end chips.*
- *China, developing its capability to design and create its own chips will then hold the IP rights to own the technology, indirectly, able to produce high-end chips by outsourcing the manufacturing process*
- *India is a country that China can attempt to collaborate with, co-invest in developing chip manufacturing capabilities as India's debt is not considered high and the country also has an abundance of STEM graduates to support it*
- *The cost of self-sufficiency in the semiconductor supply chain is extremely high in relation to the benefits and China should first work on collaboration with other countries before embarking on the costly option of being self-sufficient in the semiconductor supply chain*

Level	***Quality of analysis***	***Marks***
L2	• *Ability to explain the cost, benefits and constraints of decision* ***OR*** *Explain the reasons for being self-sufficient and reasons for not being self-sufficient* • *use of comparative advantage concept* • *use of case material* • *addresses the question*	***4-7***
L1	• *undeveloped explanation benefits or costs* • *undeveloped arguments for and against self-sufficiency*	***1-3***
E2	*One developed/supported idea*	***2-3***
E1	*One unsupported evaluative idea*	***1***