S5 Citizenship and Social Development Practice Paper (Set 1): Ageing and Dependency Ratio, Income Distribution and Poverty Rate, Fuel Mix and Carbon Intensity, Fiscal Balance, Trade Concentration, Cross-border Employment and Purchasing Power

Senior Secondary CSD

S5 CSD Set 1: 24 parts, 100 marks, 60 min on dependency ratios, poverty lines, carbon intensity, fiscal deficit and trade concentration.

Question 1: Population Ageing and Elderly Dependency Ratio

Use the teaching data below and show your working.

#	Question
1	A district has a population of 8000 000 people, of whom 1600 000 are aged 65 or above. Find the share of the elderly in the total population (%, 1 decimal place).
2	In the same district 5200 000 people are aged 15 to 64 and the rest are aged 0 to 14. Find the elderly dependency ratio (persons aged 65 or above per 100 persons of working age, 1 decimal place).
3	Ten years later the elderly population rises by 30% and the working-age population falls by 5%, with nothing else changing. Find the new elderly dependency ratio (1 decimal place).
4	From part (b) to part (c), by how many percentage points does the dependency ratio rise? State one effect on public healthcare services.

Question 2: Household Income Distribution and Poverty Rate

The household income data below are teaching examples. Show your working.

#	Question
5	The median monthly household income in a district is 30,000 dollars. If the poverty line is set at 50% of the median, find the poverty line (dollars).
6	The district has 400 000 households, of which 80 000 have income below that poverty line. Find the poverty rate (%, 1 decimal place).
7	If the poverty line is raised to 60% of the median, households below it increase to 112 000. Find the new poverty line and the new poverty rate (%, 1 decimal place).
8	A cash transfer then lifts 24 000 households above the new poverty line. Find the poverty rate after the measure and the fall in percentage points from 28.0% (1 decimal place).

Question 3: Fuel Mix for Power Generation and Carbon Emissions

Fuel mix: coal 40%, natural gas 45%, renewables 15%; emission factors are 0.9, 0.4 and 0.02 kg CO2 per kWh.

#	Question
9	Find the average emission factor (kg CO2 per kWh, 3 decimal places).

#	Question
10	Annual electricity use is 45 billion kWh. Find the annual carbon emissions in ten-thousand tonnes (1 decimal place).
11	If coal falls to 20%, renewables rise to 35% and natural gas stays at 45%, with electricity use unchanged, find the new average emission factor (3 decimal places).
12	From part (a) to part (c), by what percentage does the emission factor fall (1 decimal place)? State one reason for possible opposition.

Question 4: Government Revenue, Spending and the Deficit

Gross domestic product is 30,000 hundred million dollars; revenue is 6,300; spending is 7,200.

#	Question
13	Find government revenue as a share of GDP (%, 1 decimal place).
14	Find the fiscal surplus or deficit and its share of GDP (%, 1 decimal place).
15	If spending is cut by 8% with revenue unchanged, find the new deficit and its share of GDP (%, 1 decimal place).
16	To balance the budget with spending held at 6,624, by what percentage must revenue rise (1 decimal place)?

Question 5: Total Trade, Concentration and Risk

Exports 4,800 hundred million dollars, imports 5,200; GDP 30,000; bilateral trade shares: partner A 35%, B 25%, C 15%, others 25%.

#	Question
17	Find the trade balance (surplus or deficit) and total trade as a share of GDP (%, 1 decimal place).
18	Find the combined trade share of the three main partners (%) and the concentration index (sum of squared shares times 10,000).
19	If trade with partner A falls by 20% with other partners unchanged, find the new total trade and its share of GDP (%, 1 decimal place).
20	Referring to the previous part, explain one risk to the economy of a 75% trade concentration.

Question 6: Cross-border Employment and Purchasing Power

City A pays 12,000 yuan a month; its cost-of-living index is 85 (Hong Kong = 100). 1 yuan = 1.08 Hong Kong dollars; a Hong Kong post pays 20,000 dollars; 4 return trips a week at 120 dollars each, 48 weeks a year.

#	Question
21	First adjust the City A salary for the cost-of-living index (in yuan at Hong Kong price levels, whole number), then convert to Hong Kong dollars.
22	By what percentage is the Hong Kong salary higher than the adjusted City A salary (1 decimal place)?

#	Question
23	Find the annual commuting cost: 4 trips a week at 120 dollars each, 48 weeks a year.
24	If monthly expenses are 9,000 dollars and the savings target is 60,000 a year, find the salary needed per month and state one non-salary consideration.