Marking Schemes

Paper 1 Section A

Question No.	Key
1.	D (59%)
2.	C (44%)
3.	B (35%)
4.	C (46%)
5.	C (54%)
6.	B (64%)
7.	A (35%)
8.	B (23%)
9.	A (78%)
10.	C (18%)
11.	B (43%)
12.	A (30%)
13.	B (86%)
14.	D (55%)
15.	D (61%)
16.	C (73%)
17.	A (31%)
18.	D (43%)
19.	D (34%)
20.	A (74%)

Note: Figures in brackets indicate the percentages of candidates choosing the correct answers.

This document was prepared for markers' reference. It should not be regarded as a set of model answers. Candidates and teachers who are not involved in the marking process are advised to interpret its content with care.

Section B Question 1

		Marks
(a)	(i) - site characteristics related to the investigation topic	1
	- agricultural land uses close to built-up area/ at urban fringe	_ 1
	- safe environment	1
	 appropriate/ further explanation of 'safe environment', such as gentle relief/ flat land easily accessible 	1
		1
	- appropriate/ further explanation of 'easily accessible', such as by roads/ footpaths	1 (4)
	(ii) - dividing area X into grids	
	- identifying area X into grads - identifying ine most representable agricultural land use in each grid square/ sampling in each	1
	grid square*	t
	- collecting data by observation*	1
	- mapping of data	i 1
	- categorising land uses into 'abandoned farmland', 'farmland under cultivation' and 'rural	i
	settlement'*	1
	- combining 'market gardening' and 'leisure farming' as 'farming under cultivation'	1
	- assigning code (0, 1, 2) for each land use type and marking suitable codes in the grids	1 (4)
		. (1)
	(*These three points should be included in answers of max. marks)	
(b)	notting lateral and a second s	4
(0)	 setting interviewing questions related to the impact of urban encroachment on agricultural land uses determining format of questionnaire 	1
		1
	- appropriate examples of interviewing questions/ further explanation of question types, e.g. open-ended questions	
	- determining targeted interviewees	1
	- appropriate examples, such as farmers/ residents in rural settlement	1
	- adopting appropriate sampling method for selection of interviewees	l ,
	- further explanation of the sampling method	1
	- determining suitable mode of interviews/ use of appropriate mode of interviews, e.g. face-to-face	1
	conversation/ telephone interview	1
	- carrying out pilot interviews if necessary	1 (4)
		1 (4)
(c)	Relevant concepts:	
	- limitations of primary data: not showing temporal changes	
	- collection of data from secondary sources: aerial photographs, archived maps and surveys, web-	
	based information, etc.	
*	- processing of secondary data: mapping, overlay, GIS, etc.	
	- testing of hypothesis: making comparison/calculating percentage changes of agricultural land uses,	
	etc.	
	Marking Criteria:	
	- Describe the collection of data from specific secondary sources	
	- Explain clearly the processing of secondary data and testing of hypothesis	
	- Communicate ideas and express views logically	5 – 6
	- Describe the collection of data from relevant secondary sources	
	- Explain appropriately the processing of secondary data/ testing of hypothesis	2 4
	- Communicate ideas and express views clearly	3 – 4
	- List one or two examples of data from secondary sources	
	- Describe briefly the uses of secondary data/ limitations of primary data	1-2
	- Communicate simple ideas	1 – 2

Que	stion 2		Marks
(a)	(i)	- fold mountain	1 (1)
	(ii)	Plate tectonics theory: - plates driven by sinking currents in mantle - along convergent plate boundary - collision of plates occurred	1 1 1
		Formation of landform X: - great compressional force acting on rocks - rocks <u>folded</u> - after a long period of compression and folding	1 1
		- uplifted as landform X	1 (5)
	(iii)	 active plate/ tectonics movement friction hinders plate movement tremendous energy accumulated energy exceeds strength of rocks faulting/ rock displacement commonly occurred rocks fracture to release pressure 	1 1 1 1 1 (4)
(b)	- hig - lar - sha - les <u>Chara</u>	the of earthquake: (Max. 3) the intensity/ high magnitude ge amount of energy released tillow focus seenergy loss when seismic waves transmitted to earth surface setteristics of buildings: (Max. 3)	1 1 1
	- lac	inly old buildings k of earthquake-proof design ilding structure could not resist shaking	1 1 1 (4)
(c)	- de - pe - ph lan - hu	rant concepts/ arguments: gree of damage and level of development ople-environment relationship ysical settings: rugged relief, frequent earthquakes, high risk of secondary hazards such as dslides, etc. man settings: low economic incentives for reconstruction, small population, large amount of ildings collapsed, poor accessibility, far away from major cities, etc.	
		ing criteria:	
	pro	gical and well-elaborated explanation(s)/ argument(s) with reference to the information wided, demonstrating good knowledge and understanding the appropriate judgement by comparing the physical and human settings	4
	- A der - Tw	sound explanation/ argument in greater detail with reference to the information provided, monstrating adequate knowledge and understanding, OR or more appropriate explanations/ arguments demonstrating adequate knowledge and derstanding	3
	- An	appropriate explanation/ argument demonstrating basic knowledge and understanding, OR or more brief explanations/ arguments demonstrating basic knowledge and understanding	2
	- On	e brief explanation/ argument demonstrating elementary knowledge and understanding	1

Ques	stion 3	Marks
(a)	 dense buildings lack of open space, insufficient air circulation/ lighting narrow roads 	1 1
	- intercrossing road network/ numerous crossroads	1
	- numerous parking spaces in inner streets	1
	- easy to cause traffic congestion]
	- residential buildings close to railway line	1
	 land use conflict/ noise pollution bonus mark for illustrating with appropriate example(s) from map extract 	1 (4)
	- bolius mark for mustrating with appropriate example(s) from map extract	1 (4)
(b)	(i) - clear land use zoning	1
	- separation of industrial and residential land uses	1
	- vast industrial land use (Tai Po Industrial Estate/ Science Park)	1
	 abundant open space (Waterfront Park, golf course) low density housing at outskirt (Hong Lok Yuen) 	i
	- row density nousing at outskirt (Flong Lok Yuen) - coexistence of private and public housings (Tai Po Centre, Tai Yuen Estate)	l 1
	- preserving old market in new town (Tai Po Market, Tai Po Old Market)/ declared monuments	I
	(Old District Office North)	1
	- facilities to protect environment (water treatment works)	1
	- external linkage by railway and highway (Tai Po Market Station, roads linking Tolo	•
	Highway)	1
	 various types of community facilities (Nethersole Hospital, swimming pool) 	1
	- bonus mark for illustrating with appropriate example(s) from map extract	1 (5)
	(ii) - industrial estate and Science Park: facilitating economic development and providing job opportunities	1
	- housing of different income levels: balancing social structure	1
	- quality living and working environment: recreational land use, community facilities	1
	- land use zoning: reducing land use conflict/ providing quality living environment	1
	- rapid and efficient mass transport: providing convenient commuting mode	1
	 highway bypass: reducing traffic congestion at town centre 	I
	- promoting health and environmental protection; protecting Tolo Harbour from	
	contamination of urban sewage	1
	- cultural conservation: preserving old market and declared monuments	1 (5)
(c)	Relevant concepts/ arguments:	
	- people-environment relationship and sustainable development	
	- hindrance to development (land resumption, compensation, views from different stake holders)	
	- area of land available for development	
	 costs of development (time, money, social cost, etc.) concerns of ecology, environmental impact and social impact 	
	- concerns of transport demand and capacity of transport infrastructure	
	- complementary/ synergy with adjacent land uses	
	Marking criteria:	
	- Logical and well-elaborated explanation(s)/ argument(s) with reference to the information	4
	provided, demonstrating good knowledge and understanding With appropriate judgment by comparing the present consected developing group Y and Y	4
	 With appropriate judgement by comparing the pros and cons of developing areas X and Y A sound explanation/ argument in greater detail with reference to the information provided, 	
	demonstrating adequate knowledge and understanding, OR	_
	- Two or more appropriate explanations/ arguments demonstrating adequate knowledge and	3
	understanding	
•	- An appropriate explanation/ argument demonstrating basic knowledge and understanding, OR	2
	- Two or more brief explanations/ arguments demonstrating basic knowledge and understanding	2
	- One brief explanation/ argument demonstrating elementary knowledge and understanding	1

Max, 18

(ii)

(a)	(i)	Description (Max. 3)	Explanation	
		- low annual rainfall (1)	- drought/ water deficit throughout the year	
		- rainfall concentrates in May to Oct (1)	(1)	
		- high evaporation amount (1)	- short growing season (1)	
		- induced by high annual temperature (1)	- low land carrying capacity (1)	
		- annual potential evapotranspiration exceeds	- limited scale of farming (1)	
		annual rainfall (1)	- limited choices of crops/ livestock (1)	(Max. 6

Climatic conditions	Adaptation
	- extensive farming (1)
Low annual rainfall	- drought-tolerant livestock (1)
	- limiting number of livestock (1)
	- nomadic herding (1)
Seasonal rainfall	- shifting with rainfall/ practising transhumance (1)
	- searching for water and pasture (1)

(Max. 4)

(b)	Farming method	Tackling climatic constraints	Long-term effects
	Digging pits in soil	 rainwater collected in pits (1) reducing loss of rainwater through surface runoff (1) crops absorb rainwater more efficiently (1) 	- helps retain water in soil (1) - replenishing
	Adding organic matter	- organic matter improves infiltration (1)	underground water (1)
	Covering pits with thin soil	- increasing water-holding capacity (1)	
	Planting crops	 growing drought-resistant crops (1) providing shading effect (1) reducing moisture evaporation (1) 	

(Max. 4)

(c) Relevant concepts/ arguments:

- Nomadic herding versus sedentary farming (in terms of resource management in agriculture and sustainable agricultural development): water and soil conservation, rehabilitation of degraded land, reclamation of abandoned land, adaptation to climate change, etc.
- Causes of food supply instability in relation to economic, technological, social and physical conditions
- People-environment relationship and factors affecting agricultural production:
 - · physical constraints: unreliable rainfall; prolonged drought
 - human constraints: labour, technological level, etc.
- Factors affecting sustainability:
 - population increase
 - · environmental degradation
 - adaptation to climate change
 - · soil and water conservation

Marking criteria:

- Logical and well-elaborated explanation(s)/ argument(s) with reference to the information	
provided, demonstrating good knowledge and understanding	4
- With appropriate judgement by comparing the two agricultural activities	
- A sound explanation/ argument in greater detail with reference to the information provided,	
demonstrating adequate knowledge and understanding, OR	3
- Two or more appropriate explanations/ arguments demonstrating adequate knowledge and understanding	J
- An appropriate explanation/ argument demonstrating basic knowledge and understanding, OR	
- Two or more brief explanations/ arguments demonstrating basic knowledge and understanding	2
- One brief explanation/ argument demonstrating elementary knowledge and understanding	1

Ques	stion 5			Marks
(a)	(i)	 increase in total carbon dioxide emissions rise in GDP per capita economic development/ rising living standard/ increasing use of vehicles/ electrical appliances increase in energy consumption burning of fossil fuels emits carbon dioxide 	ncrease in industrial activities	1 (1) 1 1 1 1 1 (3)
	(ii)	 higher temperature from the mean with increasi carbon dioxide is a kind of greenhouse gas absorbs terrestrial radiation/ long wave radiation counter radiation more heat trapped in the atmosphere intensifying greenhouse effect (*This point should be included in answers of magnetic properties) 	n*	1 (1) 1 1 1 1 1 (3)
(b)	- ri: - ri: - ca - m - di <u>Eco</u> - de	system: (Max. 2) se in seawater temperature se in seawater acidity/ fall in pH value ausing coral bleaching narine life losing habitats isrupting food chain/ reducing biodiversity/ lowering nomic activities: (Max. 2) ecreasing catches in fishery industry indering development of tourism	stability of ecosystem	1 1 1 1 1 1 1 (3)
(c)	(i)	Description - large area located at low latitudinal region (1) - large angle of the sun (1) - desert area in central/ western region (1) - little cloud cover (1) - higher GDP per capita (1)	Explanation - abundant solar energy received/ stronger insolation intensity (1) - more capital to develop solar energy (1)	(Max. 3)

(ii) Relevant concepts/ arguments:

- Use of solar energy as a measure to tackle global warming: reducing use of fossil fuels
- Cost-effectiveness of developing solar energy:
 - spatial distribution of regions with abundant solar energy and high energy consumption regions
 - other energy sources (fossil fuels) available
- Effectiveness of alleviating the adverse impacts:
 - global warming as a global issue, limited effects from measures taken by a single country
 - · international cooperation to reduce emissions of greenhouse gases

Marking criteria:

- Logical and well-elaborated explanation(s)/ argument(s) with reference to the information provided, demonstrating good knowledge and understanding	4
- With appropriate judgement	
 A sound explanation/ argument in greater detail with reference to the information provided, demonstrating adequate knowledge and understanding, OR Two or more appropriate explanations/ arguments demonstrating adequate knowledge and understanding 	3
 An appropriate explanation/ argument demonstrating basic knowledge and understanding, OR Two or more brief explanations/ arguments demonstrating basic knowledge and understanding 	2
- One brief explanation/ argument demonstrating elementary knowledge and understanding	1

Max, 18

Section C

Question 6

Explain why wave erosion and deposition occur simultaneously along the southeastern coast of Hong Kong. Discuss whether hard coastal management strategies should be adopted to protect this part of the coast in Hong Kong.

Notes:

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines	
Explain why wave erosion and deposition occur simultaneously along the southeastern coast of Hong K	ong
Relevant concepts:	
 Wave energy, types of waves and coastal processes: erosion, deposition 	
 Physical factors influencing the rate and location of coastal processes: 	
- coastal factors: headlands, sheltered bays; wave refraction; offshore gradient	
- marine factors; roughness of seabed; types of waves; depth of water; fetch	
- atmospheric factors: prevailing easterly wind, wind speed	
- geological factors: rock resistance, presence of lines of weakness	,
Performance of Candidates	Marks
 Comprehensive knowledge and understanding of the interactions among the factors affecting wave energy and coastal processes along the southeastern coast of Hong Kong Systematic and logical explanation of the simultaneous occurrence of these two processes with reference 	6
to the factors	
 Adequate to good knowledge and understanding of the factors affecting wave energy and coastal processes along the southeastern coast of Hong Kong 	2 5
 Appropriate explanation of these factors, such as atmospheric factors, coastal factors Award higher marks to more systematic and/ or more in-depth explanations 	3 – 5
• Elementary to basic knowledge and understanding of the factors affecting wave energy and coastal processes along the southeastern coast of Hong Kong	1-2
 Brief description of one or two factors affecting wave energy/ coastal processes Discuss whether hard coastal management strategies should be adopted to protect these parts of the coakong 	st in Hong
Relevant concepts:	
 Management of coast: people-environment interaction and the needs to protect the coast 	
 Management issues of hard coastal management strategies; cost-effectiveness, impacts and conflicts 	
Performance of Candidates	Marks
Comprehensive knowledge and understanding of the issues of coastal management	
 Clear and sound discussion with appropriate judgement referring to the needs and the pros and cons of hard coastal management strategies 	6
Systematic and logical discussion	
 Adequate to good knowledge and understanding of the issues of coastal management 	
 Appropriate discussion with reference to the pros and cons of hard coastal management strategies Award higher marks to more systematic and/ or more in-depth discussion 	3 – 5
Elementary to basic knowledge of the issues of coastal management	1-2
Brief description of some general pros and cons of hard coastal management strategies	1-2
	Max. 12

Account for the influences of raw materials and market on the distribution of the iron and steel industry in China before the mid-1970s. How may technological development change the influence of the above two factors on the distribution of the iron and steel industry in China?

Notes:

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines	, seeks seeks
Account for the influences of raw materials and market on the distribution of the iron and steel industr	y in China
before the mid-1970s	
Relevant concepts:	
 Spatial distribution and location of iron and steet industry in China before mid-1970s 	
• Influence of raw materials: nature of raw materials, technological level, transport infrastructure and trans	sport cost,
nature of product (weight-losing industry) and transport cost	•
Raw material-oriented: nearby coal in N/ NE/ W China, e.g. Baotou, Taiyuan, Anshan; iron ores in Hube	i, Sichuan,
northeast (e.g. Anshan)	
• Influence of market: nature of products; market-oriented	
• Major transport hubs, e.g. Beijing, Shanghai, Wuhan or areas with agglomeration of some heavy industries	(e.g. NE)
Performance of Candidates	Marks
 Comprehensive knowledge of distribution of iron and steel industry in China before mid-1970s 	
• Thorough understanding of influence of raw materials and market while explaining the greater influence	
of raw materials	6
• Accurate and logical description and explanation of influence of raw materials and market with example(s)	
• Adequate to good knowledge of distribution of iron and steel industry in China before mid-1970s with the	
distribution described generally correct	
• Adequate to good understanding of influence of raw materials and market, e.g. bulky raw materials, large	2 5
amount of raw materials, transport cost, industrial areas as market, etc.	3 - 5
Appropriate description and explanation of influence of raw materials and market	
Award higher marks to answer with more systematic and/ or more in-depth descriptions and explanations	
• Elementary to basic knowledge of distribution of iron and steel industry in China before mid-1970s,	
generally describing the distribution	1 2
Elementary to basic understanding of influence of raw materials and market	1 - 2
Brief description of factor(s)	
How may technological development change the influence of the above two factors on the distribution of	of the iron
and steel industry in China?	15.3
Relevant concepts:	
• Locational change of the iron and steel industry: shifted from interior to coast; near large urban centres	
Development of production technology: reducing amount of coal used; rising rate of scrap iron used	
• Development of transport technology: railway/ port/ large vessels; saving transport cost: moving coal in	interior to
coastal cities; importing raw materials; exporting iron and steel products	
• Influences of other technologies: environmental technology to lower consumption of raw materials/ energy	
Performance of Candidates	Marks
• Comprehensive knowledge and understanding of the influences of technology, explaining the influences	
of advancement in production and transport technologies on raw materials and market	
Making appropriate judgement from clear and sound analysis and discussion: from raw material-oriented	6
to market-oriented	
Systematic and logical explanation of technological development	
• Adequate to good knowledge and understanding of the influences of technology, explaining generally the	
changes in production and transport technologies	
Analyse and discuss appropriately the changes in the influences of raw materials and market	3 - 5
Appropriate explanation of technological development	
Award higher marks to answer with more systematic and/ or more in-depth explanation	
• Elementary to basic knowledge and understanding of the influences of technology, explaining in simple	
terms the influences of technology, e.g. lowering transport cost, etc.	1-2
Brief description of technological development	
	Max, 12

Account for the complexity of the tropical rainforest ecosystem. Explain why commercial logging has reduced significantly the complexity of the tropical rainforest ecosystem.

Notes:

- 1. Award according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

5. Award appropriate marks to relevant and reasonable answers not included in this marking solutio.	
Marking Guidelines	
Account for the complexity of the tropical rainforest ecosystem	
Relevant concepts:	1
• Tropical rainforest as a complex ecosystem in terms of community, structure, interrelationship of pro	ducers and
consumers	
• Results of interaction between abiotic and biotic components:	
- optimum growing environment for plants: climate, abundant solar radiation, long growing season	
 rapid cycling of nutrients keen competition among plants 	
- luxuriant vegetation/ layered structure provides diversified habitats	
- wide variety of food	
Performance of Candidates	Marks
• Comprehensive knowledge and understanding of the tropical rainforest ecosystem: environment,	
complexity and interrelationship between abiotic and biotic components	
• Accurate and logical description and explanation of the factors affecting the complexity of the tropical	6
rainforest ecosystem	
Adequate to good knowledge and understanding of the complexity of tropical rainforest ecosystem	
• Appropriate description and explanation of the factors affecting the complexity of the tropical rainforest	3 – 5
ecosystem, such as climate, competition	J-J
Award higher marks to answer with more detailed description and explanation	
Elementary to basic knowledge and understanding of the tropical rainforest ecosystem	
Brief description of the complexity of tropical rainforest ecosystem, such as biodiversity	1-2
• Brief description of the factors affecting the complexity of tropical rainforest ecosystem, such as hot and	1 -
wet climate	
Explain why commercial logging has reduced significantly the complexity of the tropical rainforest ecos	<u>ystem</u>
Relevant concepts:	
• Impact of large-scale deforestation on biosphere	
Common practice of commercial logging: clear-cutting/ selective cutting/ use of machinery/ scale	
• Results: loss of habitats, less food for animals, soil erosion and changes in microclimate, changes in nutri	ent cycling
and energy flow, etc.	
Secondary impacts: other people, e.g. farmers, illegal loggers come to TRF Performance of Candidates	Marks
Comprehensive knowledge of tropical rainforest ecosystem and understanding of the impact of commercial	14141 IV2
logging	
 Explain logically and systematically why commercial logging has reduced significantly the complexity of 	6
the tropical rainforest ecosystem	
Adequate to good knowledge of tropical rainforest ecosystem and understanding of the impact of	
commercial logging	
• Explain appropriately why commercial logging has reduced significantly the complexity of the tropical	3 – 5
rainforest ecosystem, such as clear-cutting, massive in scale, loss of habitats	
Award higher marks to answer with more reasonable explanations	
Elementary to basic knowledge of commercial logging	
• Explain briefly why commercial logging has reduced significantly the complexity of the tropical rainforest	1-2
appareture analy as vaduating bladityavatty	{

ecosystem, such as reducing biodiversity

Section D

(a) (i) - granite/ intrusive igneous rock/ plutonic rock 1 (- composed of quartz, feldspar and mica 1	(1)
- coarse-grained - crystalline - well-jointed - acidic	(2)
(ii) Description: (Max. 2) - rocks are partially weathered/ a zone with soil and rock - smaller corestones in upper zone/ larger corestones in lower zone - joints in rock allows penetration of rainwater Explanation: - spheroidal weathering - chemical weathering processes with examples - less water penetrates deep below the surface - weaker chemical weathering in the lower zone resulted in larger corestones 1 ()	(5)
(b) (i) - Reclamation material P: rock fill 1 - Reclamation material Q: public fill 1 ((2)
(ii) Description: - major type/ largest amount of reclamation material Explanation: - abundant supply of rock fill by levelling of islands - weathered materials near the land surface - easy to be excavated - reducing transport cost of reclamation materials 1 (2)	
(iii) Relevant concepts/ arguments: Marine sand fill: brings about less air pollution less toxic materials Reclamation material Q (Public fill): less damage on marine ecosystem helps alleviate pressure on landfills Marking criteria: - Logical and well-elaborated explanation(s)/ argument(s) with reference to the information provided and citing relevant examples in Hong Kong, demonstrating good knowledge and understanding With appropriate judgement by comparing the two types of reclamation materials A sound explanation/ argument in greater detail with reference to the information provided and citing appropriate examples in Hong Kong, demonstrating adequate knowledge and understanding, OR Two or more appropriate explanations/ arguments demonstrating adequate knowledge and understanding - An appropriate explanation/ argument demonstrating basic knowledge and understanding - Two or more brief explanations/ arguments demonstrating basic knowledge and understanding - One brief explanation/ argument demonstrating elementary knowledge and understanding	; ;

Ques	tion 2		Marks
(a)	(i)	Description: (Max.1) - low annual rainfall - maximum rainfall in summer/ July and August - minimum rainfall in winter/ December and January	1 1 1 (1)
		Explanation: (Max.3) - inland location/ moisture from the sea cannot reach - summer onshore monsoon hardly brings moisture to interior location - convection rain/ rain formed by low pressure system in summer - winter offshore monsoon unfavours rain formation	1 1 1 1 (3)
	(ii)	 sandstorm desert nearby provides plenty of sand and dust low annual rainfall unfavours vegetation growth causing barren land surface rising temperature in March lead to melting of frozen soil and snow, exposing barren land surface intense high pressure centre/ continental anticyclone causing strong winds steep pressure gradient leads to high wind speed 	1 (1) 1 1 1 1 1 (4)
	(iii)	 loss of soil nutrients and organic matter/ land degradation sand and dust block sunlight, hindering photosynthesis by crops physical damage of crops uproot/ bury crops crop failure/ lowering crop yield 	1 1 1 1 (3)
(b)		akening wind speed unfavoured dispersing of PM ₁₀ ibility lowered as concentration of PM ₁₀ increased	1 1 (2)
(c)	Change - wire - wire - wire Change - fewer - loc	rant concepts/ arguments: ge in visibility in HK related to climatic hazard: nter monsoon/ relatively higher pressure at continental interior/ relatively lower pressure on sea nd blew from land to sea under pressure gradient force nd deflected to the right of its path/ followed a clockwise direction under Coriolis force in northern nisphere towards HK nd carried dust particles to HK ge in visibility in HK not related to climatic hazard: ver dust particles being blown to HK: distance between the two areas/ topographic factors al pollution sources increase concentration of PM ₁₀ hienced by other weather phenomena, e.g. temperature inversion	
	- Log pro - Wi - A : den - Tw	cing criteria: gical and well-elaborated explanation(s)/ argument(s) with reference to the information vided, demonstrating good knowledge and understanding th appropriate judgement sound explanation/ argument in greater detail with reference to the information provided, nonstrating adequate knowledge and understanding, OR o or more appropriate explanations/ arguments demonstrating adequate knowledge and derstanding	3
	- An - Tw	appropriate explanation/ argument demonstrating basic knowledge and understanding, OR or more brief explanations/ arguments demonstrating basic knowledge and understanding e brief explanation/ argument demonstrating elementary knowledge and understanding	2 1

Que	stion 3		Marks
(a)	(i)	 route Q the fastest routes P and R about three times slower than route Q 	1 1 (2)
	(ii)	Route P: (Max. 2) - twisting route along fringe of high relief areas of HK Island - longest route - more stops for loading and unloading passengers - affected by traffic congestion in Central Route R: (Max. 2) - overcoming constraint of relief by construction of tunnel - more direct route through tunnel/ less stops - but more affected by traffic congestion - e.g. at southern entrance of tunnel/ near Central/ near Cross Harbour Tunnel Route Q: (Max. 2) - unrestrained by relief - least number of stations/ less time for stopping - dedicated route/ not affected by traffic congestion - speed of train higher than bus	1 1 1 (2) 1 1 1 (2) 1 1 1 (2)
(b)	(i)	 average loading rates of both routes decreased/ by 37.3 % and 27.2 % respectively both routes maintaining certain loading though some passengers attracted by SIL route P serving areas not covered by SIL/ more direct transit to Western District route R similar to SIL/ direct competition from railway route R much slower than railway/ most affected by traffic congestion but relatively smaller decrease in average loading rate of route R due to lower frequency 	1 (1) 1 1 1 1 1 1 (3)
	(ii)	 increase in loading rate route serving local region/ western part of Southern District not covered by SIL providing multi-modal transport feeder transit/ linked to SIL at Wong Chuk Hang Station 	1 (1) 1 1 1 (1)
(c)	Susta - env em	vant concepts/ arguments: inable: vironmentally friendly: higher energy efficiency/ carrying larger amount of passengers; no direct issions from using electricity	

- serving large population in western part of Southern District
- more reliable/ not affected by traffic congestion

Not sustainable:

- high construction cost/ long years of planning and construction
- disturbance to residents nearby during construction
- large consumption of electricity/ indirect carbon emissions
- less flexible in frequency/ routes
- technical/ mechanical problems during operation
- intensifying burden of already saturated Island Line

Marking criteria:

 Logical and well-elaborated explanation(s)/ argument(s) with reference to the information provided, demonstrating good knowledge and understanding With appropriate judgement of environmental and socio-economic impacts 	4
 A sound explanation/ argument in greater detail with reference to the information provided, demonstrating adequate knowledge and understanding, OR Two or more appropriate explanations/ arguments demonstrating adequate knowledge and understanding 	3
 An appropriate explanation/ argument demonstrating basic knowledge and understanding, OR Two or more brief explanations/ arguments demonstrating basic knowledge and understanding 	2
- One brief explanation/ argument demonstrating elementary knowledge and understanding	1

(a)	Climatic characteristics	Farming calendar
•	- hot and wet most of the year (1)	- double-cropping of rice per year (1)
	- warm climate from March to November (1)	- growing period of rice from March to November (1)
	- low temperature and little rainfall in winter (1)	- rice cannot be cultivated all year round (1) - vegetable grown in winter as catch crop (1)

(Max. 5)

Description	Explanation (At least 2)
- output of rice, vegetable and fruit increased (1)	 increase in irrigated area, providing stable supply of irrigation water (1) improved transport networks favour cultivation/ transport of perishable crops (1)*
- % shares of vegetable and fruit in total output increased (1)	 improved transport networks favour cultivation/ transport of perishable crops (1)* increase in GDP per capita/ rise in incomes, increasing purchasing power for farm products with higher prices/ increasing demand for vegetable and fruit (1) higher profits for vegetable and fruit (1)^
- % share of rice in total output decreased (1)	- lower profits for rice (1)^

(Max. 4)

(Award marks once only to the explanations indicated with * and ^)

- (c) (i) mechanisation replacing manual labour
 - raising farm work efficiency/ improving farm work quality
 rice seedlings more evenly distributed with the use of transplanter
 - facilitating rice plants to absorb sufficient nutrients
 - shortening of harvesting time with the use of harvester
 - reducing loss of ripen rice from pests/adverse weather
 - may raise intensity of farming/ yield per capita

1 (5)

(ii) Relevant concepts/ arguments:

Farming methods applicable:

- vegetable: mechanisation can be carried out in different ways; hydroponics/ greenhouse farming
- fruit: mainly for trimming, fertilising and irrigation
- for larger scale of farming and higher level of specialisation

Farming methods inapplicable:

- fruit: planting modes/ spatial patterns of fruit trees more diversified; limited level of mechanisation as farms mostly on undulating ground
- transplanter and harvester of rice farming not suitable for vegetable and fruit
- for smaller scale of farming and lower level of specialisation

Marking criteria:

provided, demonstrating good knowledge and understanding

With appropriate judgement referring to the different nature of crops and mechanisation

A sound explanation/ argument in greater detail with reference to the information provided, demonstrating adequate knowledge and understanding, OR

Two or more appropriate explanations/ arguments demonstrating adequate knowledge and understanding

An appropriate explanation/ argument demonstrating basic knowledge and understanding.

- Logical and well-elaborated explanation(s)/ argument(s) with reference to the information

- An appropriate explanation/ argument demonstrating basic knowledge and understanding, OR
- Two or more brief explanations/ arguments demonstrating basic knowledge and understanding
- One brief explanation/ argument demonstrating elementary knowledge and understanding

Max. 18

1

4

3

2

Section E

Question 5

Account for the relationship between water and mass wasting in Hong Kong. Discuss the impact of human activities on this relationship.

Notes:

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines

Account for the relationship between water and mass wasting in Hong Kong

Relevant concepts:

- · Common types of mass wasting in Hong Kong: landslides and rockfalls
- · Risk of mass wasting depends on the amount of water in slope
- · Excessive water brought about by heavy rainstorms in summer increases the risk of mass wasting:
 - increasing shear stress: water adds weight to slope materials; increase in pore water pressure
 - decreasing shear strength: reduction in cohesion of slope materials and friction along the slope surface
 - when shear stress exceeds shear strength, slope materials move downslope under gravity
- Water also facilitates chemical weathering and reduces shear strength of slope materials
- · Appropriate amount of water lowers the risk of mass wasting:
 - increasing cohesion of slope materials
 - increasing shear strength and raising slope stability

Performance of Candidates	Marks
Good knowledge of shear stress and shear strength on slopes	
 Correct and detailed description and explanation of the relationship between water and mass wasting in HK with reference to the factors affecting shear stress and shear strength 	6
 Appropriate understanding of shear stress and shear strength on slopes Appropriate description and explanation of the relationship between water and mass wasting in HK Award higher marks to answer with more detailed explanations 	3 – 5
Brief description of the influence of water on mass wasting	1-2
Discuss the imaget of human activities on this valetienship	

Discuss the impact of human activities on this relationship

Relevant concepts:

- Human activities increasing occurrence of mass wasting with excessive water in slope:
 - lack of maintenance on slopes leads to seepage of water; leakage from underground water pipelines; removal of vegetation during development; over-irrigation on slopes, etc.
- Human activities reducing occurrence of mass wasting by maintaining appropriate amount of water in slope:
 - engineering measures to reduce infiltration, e.g. surface and subsurface drainage channels to drain excess water; planting of vegetation/ grass, etc.

Performance of Candidates	Marks
 Comprehensive knowledge of human activities on slopes Coherent and logical discussion of both the positive and negative impact of human activities on the relationship between water and mass wasting in HK 	6
 General knowledge of human activities on slopes Appropriate discussion of the impact of human activities on the relationship between water and mass wasting in HK 	3 – 5
 Brief description of human activities on slopes No discussion of the impact of human activities on the relationship between water and mass wasting in HK 	1-2
	Max. 12

Account for the differences in insolation received between the high and low latitudinal regions. Explain why the air temperature characteristics may vary along the same latitude.

Notes:

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines	
Account for the differences in insolation received between the high and low latitudinal regions	
Relevant concepts:	
• Description:	
- insolation received decreases with increasing latitudes in general (higher insolation received in low	latitudinal
regions; lower insolation received in high latitudinal regions)	
- maximum insolation received at around 23.5° N and S (the tropics) but not only at the equator; minimum	n insolation
received at the poles	
 larger seasonal differences in insolation received in high latitudinal regions 	
• Explanation:	
- latitudinal differences in angle of the sun (angle of insolation); thickness of atmosphere sun's ray passi	ng through;
nature of earth surface (albedo); cloud cover	
- seasonal differences (position of overhead sun; duration of daylight)	
Performance of Candidates	Marks
 Accurate and comprehensive knowledge of the differences in insolation received in different latitudes 	
• Detailed descriptions and correct explanations of the differences in insolation received between the high	6
and low latitudinal regions with seasonal variations	
Adequate knowledge of the insolation received in different latitudes	
• Appropriate descriptions and explanations of the differences in insolation received between the high and	2 5
low latitudinal regions	3 – 5
 Award higher marks to answers with more correct explanations and concepts 	
Brief description of the insolation received in different latitudes	
Brief explanations of factors affecting insolation received	1 0
• No/ Irrelevant explanation of the differences in insolation received between the high and low latitudinal	1 – 2
regions	
Explain why the air temperature characteristics may vary along the same latitude	
Relevant concepts:	
• Differences in air temperature characteristics along the same latitude: annual mean temperature; annual	ıl range of
temperature; diurnal range of temperature	
 Factors affecting air temperature characteristics along the same latitude; 	
- continental versus maritime influence: distance from the sea; ocean currents	
- influence of relief: altitude; slope aspect	
- influence of weather elements: cloud cover; weather systems; winds/ air masses	
Performance of Candidates	Marks
Accurate and comprehensive knowledge of the factors affecting air temperature characteristics	
• Comprehensive and logical explanation of two or more of the factors leading to different air temperature	6
characteristics along the same latitude	
Adequate knowledge of the factors affecting air temperature characteristics	
• Appropriate explanation of two or more of the factors leading to different air temperature characteristics	3 - 5
along the same latitude	
• Brief explanation of one of the factors leading to different air temperature characteristics along the same	
latitude	1-2
	Max. 12

Account for the challenges encountered by the Hong Kong container port within the Zhujiang Delta Region. Discuss whether Hong Kong should enhance the development of other transport modes in logistics to lessen the impact brought about by these challenges.

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines Account for the challenges encountered by the Hong Kong container port within the Zhujiang Delta Region Relevant concepts:

- Changes in freight volume of HK container port in recent years
- HK container port facing competition brought about by logistics transport development in ZDR
- Port logistics transport development in ZDR in recent years:
 - port development: e.g. Yantian Port in Shenzhen and Nansha Port in Guangzhou
 - large scale development of port infrastructure, improving linkage between ports and hinterland
- Decreasing competitiveness of HK container port:

- distance from industrial areas in ZDR, costs of land transport, higher operation cost of terminals

Performance of Candidates	Marks
 Comprehensive knowledge and accurate understanding of changing competitiveness of HK container port in ZDR and port logistics transport development in ZDR in recent years Clearly and accurately accounting for the challenges brought about by the logistics transport development in ZDR in recent years to HK container port 	6
 Accurate knowledge and understanding of changing competitiveness of HK container port in ZDR and port logistics transport development in ZDR in recent years Accurately accounting for the challenges brought about by the logistics transport development in ZDR in recent years to HK container port 	3 – 5
 Elementary knowledge and understanding of changing competitiveness of HK container port in ZDR and port logistics transport development in ZDR Briefly describe the challenges brought about by the logistics transport development in ZDR to HK container port 	1-2

Discuss whether Hong Kong should enhance the development of other transport modes in logistics to lessen the impact brought about by these challenges

Relevant concepts:

- · Rooms for development in other transport modes of logistics:
 - railway: limited development with mainly passenger transport
 - road: developing cross-border road network and enhancing capacity of customs clearance to raise efficiency of crossborder land transport linking container port
 - air transport; may make use of the advantages of HK International Airport in response to the development of high value-added industry in ZDR
- Limitations and possibilities of further development of HK container port:
 - geographical constraints; possibility of cooperating with other container ports within the region; possibility of expanding logistics transport networks with other regions in the Mainland, SE Asia, the world

Performance of Candidates	Marks
 Comprehensive and accurate knowledge of different transport modes of logistics in HK Coherent and logical discussion Discuss in multiple perspectives the transport mode suitable for the development of logistics in HK with reference to the challenges encountered by HK container port within ZDR 	6
 Accurate knowledge of different transport modes of logistics in HK Logical discussion Award higher marks to answers with discussion from more perspectives 	3 – 5
 Elementary knowledge of different transport modes of logistics in HK Brief explanation of whether Hong Kong should enhance the development of other transport modes in logistics to lessen the impact brought about by the challenges encountered by the container port 	1-2
	Max. 12

Account for the changes brought about by the policy of 'Emptying the Cage for New Birds' to the manufacturing industry in the Zhujiang Delta Region. Discuss whether these changes are responding to the environmental management strategies in the region.

Notes:

- 1. Award marks according to the QUALITY and DEPTH of answer; do not count the number of points only.
- 2. Max. marks should be given to good quality answers with well-elaborated arguments and demonstrating good knowledge on relevant geographical concepts.
- 3. Award appropriate marks to relevant and reasonable answers not included in this marking scheme.

Marking Guidelines Account for the changes brought about by the policy of 'Emptying the Cage for New Birds' to the manufacturing industry in the Zhujiang Delta Region

Relevant concepts:

- · Changing from low value-added to high value-added manufacturing industry
- Related government policies: research and development/ branding and product design/ establishment of science park and high-tech industrial park
 - adopting green production technology; favouring development of high-tech industries
 - setting emissions targets to relocate polluting industries
- Related changes
 - rising production costs; involuntary closing down or relocation of low value-added/ high polluting industries; relocating low value-added/ high polluting industries shifted to E & W parts/ mountainous regions in N part of Guangdong Province

Performance of Candidates	Marks
• Comprehensive understanding and knowledge of the changes brought about by the policy of 'Emptying the	
Cage for New Birds' to the manufacturing industry in ZDR	6
Citing of relevant examples of industries with detailed explanation	
• Adequate knowledge of the changes brought about by the policy of 'Emptying the Cage for New Birds' to	
the manufacturing industry in ZDR	3 – 5
Citing of appropriate examples of industries in description and explanation	
• Brief description and explanation of the changes brought about by the policy of 'Emptying the Cage for	1 2
New Birds' to the manufacturing industry in ZDR	1 Z

Discuss whether these changes are responding to the environmental management strategies in the region

Relevant concepts:

- · Purpose of environmental management: implementing emissions reduction measures to alleviate pollution problems
- · Environmental management strategy: prevention
 - Changes responding to the strategy: some targets of strategies attained, e.g. high value-added industries usually release less pollutants; use mainly electricity generated by cleaner energy; with more capital to implement environmental protection policies in the production processes; closing down of some high polluting industries
 - Changes not responding to the strategy: some changes not based on environmental concerns/ some targets of strategies not attained, e.g. development of manufacturing industries increases demand for electricity and transport, thus increasing emissions of pollutants
- · Environmental management strategy: treatment
 - Changes responding to the strategy: local government gets more revenue to build pollution treatment facilities

Factors affecting effectiveness

Performance of Candidates	Marks
 Comprehensive knowledge of the environmental management strategies in ZDR Coherent, logical and in-depth discussion of whether the changes in manufacturing industries are responding to the environmental management strategies in ZDR 	6
 Accurate knowledge of the environmental management strategies in ZDR Appropriate discussion of whether the changes in manufacturing industries are responding to the environmental management strategies in ZDR 	3 – 5
 Brief description of the environmental management strategies in ZDR Brief explanation of whether the changes in manufacturing industries are responding to the environmental management strategies in ZDR 	1-2
	Max. 12

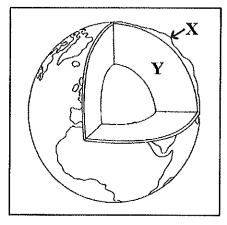
Candidates' Performance

Paper 1 Section A

The average number of questions answered correctly by candidates was 10 out of the 20 multiple-choice questions. The overall performance of candidates was about the same as last year. Five questions in which distractors were more popular than the key have been selected for further discussion.

In Item 7, the most popular answer was Option C. Candidates choosing this option might have wrongly interpreted the semi-molten state of part of layer Y (mantle) to be liquid for the whole layer Y.

Q.7 Refer to the figure below which shows the structure of the earth.



(Figure not drawn to scale)

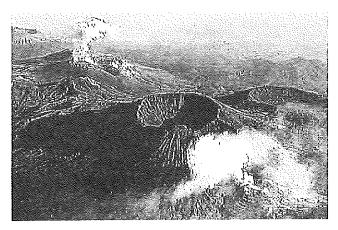
Which of the following pairs of comparison between layers X and Y in the above figure is/ are correct?

		Layer X	Layer Y
(1)	Density	lower	higher
(2)	Physical state	solid	liquid
(3)	Chemical composition	magnesium	aluminum

*A.	(1) only	(35%)
В.	(3) only	(5%)
C.	(1) and (2) only	(50%)
D,	(2) and (3) only	(10%)

In Item 8, the most popular answer was Option D. Candidates choosing this option might have mistaken magma for lava in the formation of a volcano.

Q.8 Refer to the photograph below which shows a tectonic feature.



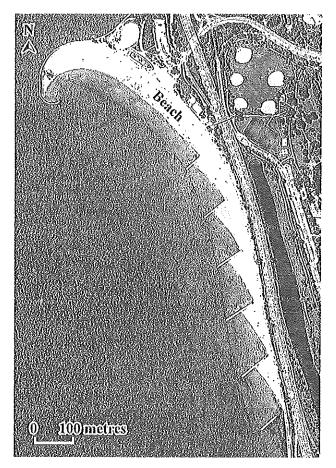
Which of the following statements about the formation of the tectonic feature is/ are correct?

- (1) It is resulted from the collision of two continental plates.
- (2) It is formed by the cooling and solidification of magma.
- (3) It is a resultant landform of extrusive vulcanicity.

A.	(1) only	(5%)
*B.	(3) only	(23%)
C.	(1) and (2) only	(7%)
D.	(2) and (3) only	(65%)

In Item 10, more candidates chose options other than the answer key of Option C. They demonstrated an incorrect concept of longshore drift.

Q.10 Refer to the aerial photograph below.



The direction of the prevailing wind in this area is ______.

Α,	northeast	(28%)
В,	southeast	(25%)
*C.	southwest	(18%)
D,	northwest	(29%)

In Item 12, the most popular answer was Option C. Candidates choosing this option might have wrongly concluded that transnational enterprises would intentionally shift pollution problems to less developed countries by setting up production lines there.

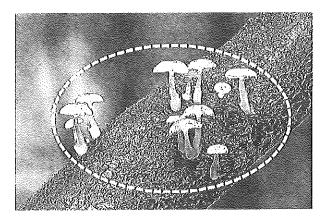
Q.12	The	reasons	transnational	enterprises	set	up	production	lines	in	less	developed	countries	
	are												

- (1) to expand the market
- (2) to lower the costs of production
- (3) to shift the pollution problems to less developed countries

*A.	(1) and (2) only	(30%)
	(1) and (3) only	(1%)
	(2) and (3) only	(38%)
	(1), (2) and (3)	(31%)

In Item 17, the most popular answer was Option C. Candidates choosing this option might have confused the characteristics of decomposers and parasitic plants.

Q.17 Refer to the photograph below which shows one of the biotic components in the tropical rainforest ecosystem.



Which of the following is/ are the role(s) of this biotic component in the nutrient cycle?

- (1) breaking down organic matters
- (2) absorbing nutrients from the host
- (3) producing food by photosynthesis

*A.	(1) only	(31%)
B.	(3) only	(6%)
C.	(1) and (2) only	(46%)
D.	(2) and (3) only	(17%)

Paper 1 Section B

	Question Number		Popularity %	Performance in General
1.	(a)	(i)	2	Satisfactory. Candidates commonly understood the basic principles of selecting a field study site. They explained the selection of area X as an appropriate field study site in terms of safety and accessibility with reference to the information in the question. However, some candidates failed to see the geographical setting related to the study in the question. Some candidates raised unsound reasons such as 'different land uses in the area' or 'each type of land use is more average in size'.
		(ii)		Fair. Most candidates did not adequately understand the procedure of data collection. Most of them failed to specifically describe the methods of sampling and data collection. Candidates were commonly better in describing the procedure of mapping, namely the division of area X into grids, categorisation of land uses and assigning codes.
	(b)			Satisfactory. Candidates commonly understood the basic method of collecting data by interviews. They were able to describe the method of selecting interviewees and determining the mode of interviews. However, some candidates listed only a few interviewing questions.
	(c)	- Constraints of the Constraints		Poor. Candidates commonly did not realise the land uses involved in this study would be changing with time and therefore did not have any ideas about the secondary data required. Most candidates simply listed the sources of some common secondary data, such as the Internet, government departments and newspapers, etc. They did not elaborate specifically on the processing of the secondary data and the utilisation of processed secondary data in hypothesis testing.

Question Number	Popularity %	Performance in General
2. (a) (i)	57	Good. Most candidates correctly identified landform X as a fold mountain. Some candidates in the Chinese version of the paper used the wrong word to name the landform.
(ii)		Good. Most candidates showed adequate knowledge of the formation of a fold mountain. They were able to explain the movement of plates and the formation of folds resulting from plate collision and compression according to the plate tectonics theory. However, quite a number of candidates did not have the concept of 'prolonged compression and uplifting'. Some candidates inaccurately stated that fold mountains were formed by the folding of 'plates' or 'sediments'.
(iii)		Satisfactory. Most students were able to explain the occurrence of earthquakes in regions of landform X. However, some candidates wrongly stated that the breaking of 'plates' or 'crust' would trigger earthquakes. Candidates commonly failed to explain more specifically why earthquakes are 'common' in regions of landform X and the relationship between tectonic activities and earthquakes. They also failed to account for the tremendous energy accumulated in the rock layers.
(b)		Good. Most candidates were able to explain why town P was seriously damaged according to the nature of the earthquake and the features of the buildings shown in Figures 2b and 2c. However, candidates commonly did not have the concept of earthquake 'energy', thus they failed to explain clearly the relationship between the destructive power of an earthquake and the depth of focus or earthquake intensity. Furthermore, some candidates mixed up 'epicentre' and 'focus'. Some candidates gave irrelevant answers such as 'poor rescue team' or 'lack of warning system', etc. They might have given answers without referring to the question.
(c)		Satisfactory. Candidates were commonly able to raise arguments related to the constraints imposed by the physical settings, such as frequent earthquakes, rugged relief affecting accessibility, etc. However, many candidates did not understand adequately the meaning of 'altitude' and described the relief of 955 m as a high mountain. Candidates commonly raised single-sided arguments without discussing the major constraints imposed by the human settings, e.g. insufficient incentives for reconstruction caused by low economic benefits. Some candidates listed a few human constraints commonly found in less developed countries that were irrelevant here.

_	uestion	Popularity	Performance in General
3.	lumber (a)	10	Good. Most candidates demonstrated a basic understanding of urban problems. They were able to explain the problems related to the urban
			planning of Tai Po Market according to map information. However, some candidates might have misinterpreted 'deficiency' and described the merits of urban planning.
	(b) (i)		Poor. Most candidates did not answer according to the question. Many candidates described the geographical site or locational characteristics of Tai Po, such as coastal location, reclaimed land, etc. Some candidates explained the general merits of urban planning without referring to the settings of Tai Po. Some candidates listed only different types of land uses in Tai Po from the map extract. Candidates commonly did not adequately understand urban planning in new towns. They were also weak in the concepts of 'land use zoning' and 'self-contained'.
	(ii)		Poor. Candidates commonly did not understand accurately and comprehensively the concept of 'sustainable city'. Most of them explained only generally the provision of 'green space', but with an incomplete understanding of the term. Some candidates mixed up 'green belt' with 'green space', or inappropriately cited the 'country park' and 'nature reserve' surrounding Tai Po as examples of urban 'green space'. Some candidates put forward far-fetched explanations of 'green space', such as 'to increase biodiversity' or 'to slow down global warming'. Only a few candidates explained the role of sewage treatment facilities in environmental protection. Candidates' understanding of the social and economic aspects of a sustainable city was rather poor. They put forward explanations with weak reasoning like 'building railways and shopping malls to promote tourism'.
	(c)		Fair. Most candidates compared the transportation facilities and accessibility of areas X and Y. Some candidates also considered the difficulty of land resumption in area X. However, some candidates answered from the perspective of real estate developers with irrelevant arguments, such as 'sea view is a favourable factor of constructing expensive and luxury apartments'. Some candidates suggested the favourable factor of 'proximity of area Y to the Chinese University of Hong Kong and the Science Park', but without further elaboration.

Question Number	Popularity %	Performance in General
4. (a) (i)	67	Good. Most candidates demonstrated adequate knowledge of the climatic settings in the Sahel region with a detailed description of the local climatic characteristics according to the information in Figure 4a. However, most candidates were not so good at explaining how the climate limited agricultural development. Most of them mentioned water shortage in the region, but did not have an in-depth explanation of how the climate affected the growing seasons of crops, crop selection and farming scale. Candidates commonly mixed up 'seasonal rainfall' with 'unstable rainfall' or 'unreliable rainfall', or wrongly regarded water shortage as a cause of inadequate soil fertility and high temperature to be a farming constraint.
(ii)		Satisfactory. Most candidates described some of the characteristics of nomadic herding in the Sahel region. However, they were comparatively weak in the explanation of how this type of agricultural activity adapted to the local climate. Many candidates mixed up 'transhumance' with 'fallowing'. Although many candidates described the migratory path of the herders in the Sahel region, they did not explain how the seasonal migration adapted to water shortage or seasonal rainfall in the region. Only a few candidates were able to stated the adoption of extensive farming by the herders, which enables them to adapt to the climatic conditions by limiting the number of livestock.
(b)		Poor. Most candidates did not demonstrate adequate understanding of 'soil and water conservation' and 'management of agricultural resources'. They were only able to identify millet and sorghum as drought-resistant crops. Many candidates wrongly explained how the farming method could improve soil fertility; some others wrongly interpreted it as irrigation farming. They might not have studied the question carefully enough.
(c)		Fair. Most candidates did not demonstrate adequate understanding of 'sustainable agricultural development'. They repeated their answers in (a) (ii) and (b) as arguments in discussing which agricultural activity is better adapted to the local environment; or discussed the impracticability of the agricultural activity shown in Figure 4c. A number of candidates focused their discussion on raising agricultural productivity, not on maintaining a stable food supply. Some candidates raised general arguments of overgrazing and soil degradation without further explaining their causes and processes.

	Questic Numbe		Popularity %	Performance in General
5.	(a)	(i)	64	Satisfactory. Most candidates correctly described the rising trend of total carbon dioxide emissions but some described the detail of changes instead. Many candidates explained the rising trend of total carbon dioxide emissions with the increase in energy consumption but a number of them did not account for the causes of the increase.
		(ii)		Satisfactory. Most candidates demonstrated a basic understanding of the greenhouse effect. However, some of them failed to explain the mechanism of the greenhouse effect with the processes of absorption and rediction

Paper 1 Section C

Question Number	Popularity %	Performance in General
6	15	Fair.
		In the first part of the question, most candidates demonstrated a basic understanding of the coastal processes. They were able to describe and explain briefly the general factors affecting wave energy and coastal processes, such as wind speed and fetch. However, candidates commonly failed to respond to the two main points of 'southeastern coast of Hong Kong' and 'wave erosion and deposition occur simultaneously' stated in the question when giving answers. A number of candidates mentioned 'monsoon winds' in their explanation which was irrelevant to 'wave erosion and deposition occur simultaneously'.
		In the second part of the question, most candidates demonstrated a basic understanding of coastal management strategies. They listed some hard management strategies and briefly described the nature, functions and common pros and cons of these strategies, such as high cost and ecological impact. However, commonly candidates did not understand sufficiently the interaction between people and the environment on the southeastern coast of Hong Kong. Thus, they failed to discuss accurately the necessity of hard coastal management strategies and the potential conflicts brought about by their adoption.
7	40	Poor.
		In the first part of the question, candidates commonly demonstrated a basic understanding of the distribution of the iron and steel industry in China. They were able to explain briefly the importance of raw materials to the location of the iron and steel industry in northeast China, but they failed to account for the location of the iron and steel plants in the interior region with reference to raw materials and market. Many candidates explained generally the location of the iron and steel industry with government policies or strategic reasons, including some irrelevant government policies such as the reform and opening-up policy, 'Go West' policy and the Belt and Road Initiative. Candidates commonly did not have a good understanding of the influence of market. They did not explain the influence of industrial agglomeration on the location of iron and steel plants in coastal cities. Some candidates wrongly defined market as the 'overseas market'.
		In the second part of the question, most candidates demonstrated only an elementary to basic understanding of the impact of technological development. They stated briefly the use of scrap iron as raw material, but failed to further discuss how this development affected the relative importance of raw materials and market, and how it changed the distribution of the iron and steel industry in China. Many candidates described and explained the improvement of transport infrastructure, but not the advancement of transport technology in China. Some candidates put forward examples irrelevant to the transport of iron and steel, such as high-speed rail and air transport.

Question Number	Popularity %	Performance in General
Number 8	45	Fair. In the first part of the question, most candidates demonstrated a basic understanding of the tropical rainforest ecosystem. They were able to describe briefly the climatic environment of the tropical rainforest and its characteristics, such as stratification of trees and biodiversity. However,
		they commonly did not demonstrate the concept of complicated ecosystems. Candidates also demonstrated insufficient understanding of the interrelationship between abiotic and biotic components in the tropical rainforest ecosystem. They failed to explain the complicated structure of the tropical rainforest and the interrelationship of different components. Many candidates described the energy flow, nutrient cycling or the characteristics of plants, which were irrelevant.
		In the second part of the question, candidates commonly demonstrated a basic understanding of the impact of commercial logging on tropical rainforests. They were able to explain briefly the impact of large-scale and comprehensive logging on the habitats of animals and the food chain. Many candidates explained the impact of commercial logging on the microclimate or soil and water loss in the tropical rainforest. However, most of them failed to further explain how these environmental changes reduced the complexity of the tropical rainforest ecosystem.

General comments and recommendations

- Candidates demonstrated inadequate knowledge and understanding of basic geographical concepts, such as
 the people-environment interrelationship, factors of industrial location, sustainable city and sustainable
 agriculture, etc. They should take note of the key concepts and learning points of each unit.
- 2. Candidates should understand the dynamic people-environment interactions and the changes of physical and human environments in time and space.
- 3. Candidates should pay attention to the balance of breadth and depth of content in answering questions, particularly the short essay questions. They should have a better performance if they could further elaborate on the major arguments and analyse the major factors in greater depth. They should not expect to obtain higher marks with unimportant factors and trivial facts.
- 4. Candidates showed improvement in answering questions with open-ended discussion. They were commonly able to make judgements and draw conclusions. However, they should respond to the question appropriately in the discussion. They should understand that there is no common mode of answering this type of question.

Paper 2 Section D

Question Number	Popularity %	Performance in General
1. (a) (i)	41	Excellent. Most candidates were able to identify rock type K and describe its characteristics correctly. Only a few candidates misspelt the keyword or wrongly described the formation of the rock.
(ii)		Satisfactory. Most candidates described and explained correctly in detail the formation of the regolith shown in Figure 1c. However, very few candidates described explicitly the well-jointed structure of rock type K and explained the changing characteristics of zone M with increasing depth. Some candidates wrote a lengthy account of the process of spheroidal weathering without referring to zone M specifically. They often ended up their answers with the formation of tors, which was irrelevant. Many candidates mixed up the concepts of 'weathering' and 'erosion' in their answers.
(b) (i)	THE ACCOUNT OF THE PROPERTY OF	Good. Many candidates correctly identified the reclamation materials, but quite a number of them omitted the keyword 'fill' in their answers. A small number of candidates mixed up reclamation materials P and Q or wrongly named the reclamation materials as different rock types. They might be unfamiliar with the topic.
(ii)		Fair. Candidates found no difficulty in identifying P as the major type of reclamation material from its percentage figure, but most explanations were not based on the information provided, such as the abundance of the material in Hong Kong, its resistance to erosion or the demerits of the other two types of reclamation materials. Only a few candidates answered well by referring to the information provided, particularly in relation to the availability of reclamation material P at Chek Lap Kok shown in Figure 1a.
(iii)		Satisfactory. Most candidates wrote lengthy descriptions of why marine sand fill was harmful to the marine ecosystem, but their preference for reclamation material Q was not well-justified. Some candidates wrote irrelevant answers which were not based on environmental concerns or were comparing the engineering properties of the two types of reclamation materials. A few candidates discussed the topic well by comparing comprehensively the respective impacts of the two types of reclamation materials on the biotic, land and air environments.

Question Number	Popularity %	Performance in General
2. (a) (i)	31	Satisfactory. Most candidates described the rainfall pattern of city X correctly. They explained the low rainfall and its seasonal pattern with continental influence and monsoon effect. However, some candidates mixed up different concepts of weather and climate as they tried to explain the annual rainfall conditions according to the pressure pattern of the specific day in Figure 2b. A few candidates answered in an inappropriate way by explaining the rainfall pattern with temperature data. They related the summer rain of city X incorrectly to the high evapotranspiration rate in that season. Some other candidates explained the low rainfall incorrectly with its desert location.
(ii)		Satisfactory. Most candidates were able to identify the climatic hazard correctly. However, a few candidates mistook low rainfall condition as 'drought hazard'. Some other candidates wrongly named the hazard as 'haze' or 'desertification'. They might not have studied Figure 2b carefully enough. Some candidates listed irrelevant human activities like overgrazing or overcultivation as the cause of the climatic hazard. Some candidates explained well the favourable conditions of the formation of the climatic hazard by referring to the information provided, but others answered poorly by simply recalling textbook content.
(iii)		Good. Most candidates gave a full account of the impacts of sandstorms on local agriculture. A few candidates mentioned the impacts on human health or the 'positive' impacts of the climatic hazard on agriculture, which were irrelevant.
(b)		Poor. Very few candidates correctly identified the increasing level of PM ₁₀ and decreasing wind speed as the two reasons for the lowering of visibility. Many candidates vaguely mentioned that the air mass brought sand and dust to Hong Kong. Most candidates simply copied the weather information from Figure 2c as their answers. They might have no ideas of the meaning of the question.
(c)		Fair. Most candidates simply cited the path of the air mass or the wind direction in Hong Kong as arguments without explaining the mechanisms involved. Some candidates were able to identify the pressure difference between city X and Hong Kong as causing wind to bring sand and dust. However, very few of them were able to explain the actual path of the air mass according to the steep pressure gradient and the effect of the Coriolis force. Most candidates correctly suggested the factor of 'long distance' in their counter argument, but some mistook air pollutants from the Mainland north of Hong Kong as the source of PM ₁₀ , possibly because they had overlooked the direction of the easterly wind. Many candidates listed arguments for both the 'pros' and 'cons', but did not have a clear stance in the discussion.

	Question Number	Popularity %	Performance in General
3.	(a) (i)	5	Satisfactory. All candidates compared the journey times of the three public transport routes correctly in a straightforward way, but only a few were able to identify the magnitude of their differences.
The state of the s	(ii)		Good. Most candidates answered well by referring to the information provided, including the length of routes, smoothness of road traffic, number of stops and the factor of relief. However, a few candidates did not understand the effect of relief on transport routes. They either mistook route P as climbing over high mountains, or overlooked the overcoming of relief constraints in the two other routes by building a tunnel. Candidates scoring lower marks in this part either failed to make full use of the information in Figure 3a and Table 3b or simply recalled the merits of the railway over franchised buses from past examination papers.
	(b) (i)		Fair. All candidates identified correctly the decrease in average loading rates of routes P and R after the opening of the MTR South Island Line (East). However, very few candidates accounted for the larger decreasing rate of route P, or noted the approximate 50% average loading rates still maintained by both routes after the opening of the new MTR route. Most explanations of the changing average loading rates by the candidates were therefore rather superficial, for instance: stating that railway transport is faster and more convenient than franchised buses in general, without noticing the different characteristics of the two routes. Apart from taking the journey time into consideration, the specific role of franchised buses to offer direct transit for certain commuters was rarely mentioned by the candidates.
	(ii)		Good. Nearly all candidates identified correctly the increase in the average loading rate of route S after the opening of the MTR South Island Line (East). Most candidates also explained the change correctly, although the role of route S to provide 'feeder transit' or 'multi-modal transport' was not specifically mentioned.
S	(c)		Poor. Only a small number of candidates answered well by having their arguments based on the benefits of railway transport to the environment and its role as the backbone of public transport planning. Most candidates did not have much idea of the sustainability of transport development and referred only to the concept of sustainable development in general. Their arguments were superficial, like the reduction of air pollution, huge investment in the project and benefit to the economy of the local region. They seldom discussed the impact on the connectivity of the region and living quality of the residents. A small number of candidates wrongly mentioned the proposed South Island Line (West) could help to ease the traffic on the Island Line. They might have overlooked the information in the question that the average loading rate of the Island Line has already been saturated.

Question Number	Popularity %	Performance in General
4. (a)	23	Good. Most candidates correctly described the climatic conditions of Jiangmen, but a few of them copied only the temperature and rainfall figures in Figure 4a without any description. Some candidates wrongly explained the influence of climate on local farming instead of the 'farming calendar', thus they overlooked the seasonal pattern of early-season rice and late-season rice cultivation. Some candidates wrongly regarded vegetables as crops preferring a 'cool, dry winter', whereas they should be grown as a catch-crop using irrigation water in winter in the farming calendar. A few candidates included irrelevant factors such as relief, soil and drainage in their answers.
(b)		Good. Most candidates correctly described the increasing output of all major farm products, the increasing share of vegetable and fruit and the decreasing share of rice. However, they did not use well or misused other information in Table 4b. A small number of candidates wrote lengthy descriptions of all the data in Table 4b without correctly relating them to the changes in output of the farm products. Some candidates explained by recalling textbook content instead of interpreting and analysing the relevant data provided, including the increases in 'GDP per capita', 'irrigated area' and 'total highway length'.
(c) (i)		Fair. Most candidates mentioned that mechanisation helped to save labour and to improve the efficiency of farm work. However, some candidates gave irrelevant explanations of how urbanisation caused the shortage and the rising cost of farm labour. Very few candidates were able to identify the transplanting and harvesting functions of the machines shown in Figure 4c, thus they failed to explain specifically how the machines improved the quality of farm work. Some candidates mentioned briefly that the machines helped to increase the rice yield, instead of correctly inferring the increase in yield per capita with less labour input.
(ii)		Poor. Most candidates discussed only generally the applicability of farm mechanisation to vegetable and fruit cultivation in Jiangmen as they failed to identify the farming machines in Figure 4c. Some candidates gave vague answers that farming machines would 'damage' the vegetables and fruits, or repeated their answers of the merits of farm mechanisation in (c) (i). Other candidates put forward far-fetched answers, such as the availability of capital and education level of farmers. Only a few candidates had a good discussion with reference to the different nature of the crops, the ways of mechanisation and the scale of farming.

Paper 2 Section E

Question Number	Popularity %	Performance in General
5	35	Fair.
		In the first part of the question, most candidates only provided a brief account of the relationship between weathering and mass wasting in Hong Kong. They commonly explained how rainstorms would lead to the occurrence of landslides. Some candidates cited correct examples of major landslides in Hong Kong in recent years. Most candidates mentioned 'increasing shear stress, decreasing shear strength' in their answers, but did not explain well the roles of water in different mechanisms. Only a few candidates stated that a small amount of water could increase the cohesion of slope materials. Some candidates cited rockfall, which is a less common form of mass wasting in Hong Kong, to explain its relationship with water. However, they mistook rainwater as being the triggering factor of rockfalls, but it indeed causes rocks to fall by acting as a chemical weathering agent to decrease the shear strength of slope materials. Some other candidates wrongly cited rockfalls in coastal areas as a form of mass wasting related to the work of water, but the primary agent involved should be wave erosion. Candidates commonly made the mistake of citing rainwater erosion in badland areas as a factor causing mass wasting. Some candidates had the misconception that physical weathering by heating and cooling of rocks due to daily temperature change was common in Hong Kong. These mistakes showed that candidates' knowledge of weathering, mass wasting and erosion was inadequate.
		In the second part of the question, many candidates discussed both the positive and negative impacts of human activities. However, some candidates overlooked the relationship between water and mass wasting, and cited some human activities like cutting or levelling of slopes, installing soil nails, building retaining walls, constructing squatters on slopes, planting trees to bind the slope materials, etc., which were irrelevant to the question. Candidates should explain how human activities affect slope drainage to prevent the increase in shear stress and decrease in shear strength in their discussion. Most candidates provided vague and contradictory answers of the role of vegetation, i.e. deforestation and afforestation, on the relationship between water and mass wasting. They mentioned that trees helped reduce mass wasting by holding the soil particles, and trees also favour rainwater infiltrating into the soil, which in fact could increase the occurrence of mass wasting. Very few candidates understood the role of vegetation in preventing mass wasting by reducing the amount of water entering the soil through interception, absorption and evapotranspiration. However, they may not be able to prevent the occurrence of deep-seated landslides.

Performance in General
Satisfactory. In the first part of the question, most candidates correctly explained the difference in the angle of insolation as the factor of latitudinal variation in the amount of insolation received. However, some candidate wrote wrong answers like 'the poles receive less insolation due to the longer distance from the sun than the equator' and 'the atmosphere is thicker at the pole than at the equator'. Many candidates explained the effect of seasons in detail, but some of them came to the wrong conclusion that 'more insolation is received at the poles than at the equator in summer'. They might have considered only the 24 hours of daylight at the poles in summer, but overlooked the larger angle of insolation at lower latitudes. Although many candidates cited high albedo at the snow-covered polar regions as the negative factor in the amount of insolation received, very few of them explained the larger amount of insolation received near the tropics than at the equator is due to the smaller amount of cloud cover to reflect solar radiation. In the second part of the question, most candidates comprehensively explained the non-latitudinal factors affecting temperature. However, very few of them were able to make comparisons among places along the same latitude as an illustration. For instance, many candidates explained correctly the different heating and cooling properties of land and sea but some of them wrongly cited Hong Kong and Urumqi, which are located at places of large latitudinal difference, as examples for comparison. Candidates also commonly cited monsoon wind as another factor. However, though most of them were able to correctly explain the influence of summer onshore winds and winter offshore winds on temperature in

Question Number	Popularity %	Performance in General
Number 7	5	Poor. In the first part of the question, most candidates did not have a good understanding of the challenges encountered by the Hong Kong container port within the Zhujiang Delta Region. Some candidates briefly mentioned the ports in the Mainland as competitors, but failed to elaborate clearly on their comparative advantages. A few candidates mentioned the problems
		of land shortage and rising labour cost in Hong Kong but failed to relate them specifically to the declining volume of cargo handled by the container port. Most candidates overlooked the fact that Hong Kong is a free port where, except for very low licence fees, no custom duties are required for most exports and imports when explaining customs clearance at the border as a factor of the above decline. Very few candidates were able to comprehensively explain that the challenges encountered by the Hong Kong container port were due to the recent changes in the Zhujiang Delta Region, including the changing industrial structure and improvement in port and transport infrastructure, as well as the higher handling cost of containers in Hong Kong, the problem of cross-border traffic and the efficiency of customs clearance, etc. Although some candidates suggested the concepts of 'overlapping of hinterlands between Hong Kong and the Mainland' or 'different policies of the governments', they did not claborate on them correctly.
		In the second part of the question, most candidates wrote brief and vague answers. Candidates who misinterpreted the first part of the question gave irrelevant answers in their discussion. For instance, some candidates cited the advancement of logistics management and IT applications, which are unrelated to transport when discussing 'the development of other transport modes in logistics'. A few candidates wrongly cited the passenger transport modes. Many candidates correctly mentioned the development of the Hong Kong International Airport and the third runway to promote air traffic. However, very few of them made further elaboration on the comparative advantage of the airport in cargo traffic and the trend of greater demand from the Zhujiang Delta Region for transport of high value goods. Some candidates named the Hong Kong-Zhuhai-Macao Bridge, river transport, the planned port railway and the High Speed Rail, etc. as alternative transport modes of logistics, without taking note of their respective functions and applicability. Candidates failed to answer satisfactorily in this part due to their poor knowledge of Hong Kong as a logistics transport hub and limited understanding of the characteristics of cargoes handled by different transport modes.

Question	Popularity %	Performance in General
Number 8	24	Fair.
8	24	In the first part of the question, most candidates gave a correct account of the changes in the industrial structure of the Zhujiang Delta Region in recent decades. They described correctly the changing trend from 'low technology', 'low value-added' and 'labour-intensive' to 'high technology', 'high value-added' and 'capital-intensive' industries in the region with some relevant examples. However, a few candidates did not take the implementation year of the policy of 'Emptying the Cage for New Birds' into account, but instead provided a lengthy description of the changes since the reform and opening-up policies in the late 1970s. Moreover, some candidates mentioned the shifting of polluting and labour-intensive industries to other provinces and other Asian countries in recent years, which was not the original objective of the policy. A few candidates wrongly stated that there was a change from 'material-oriented' to 'market-oriented' and from 'heavy' to 'light' industries. In the second part of the question, most candidates showed little understanding of the environmental management strategies in the Zhujiang Delta Region. Some candidates only repeated their answers from the first part of the question about the moving out of low technology, polluting industries and moving in of high technology, non-polluting industries. Some candidates gave an account of the pollution problems in the region in recent years and some environmental protection strategies to tackle the problems. However, only a few candidates discussed how the aforesaid changes in industrial structure are 'responding' to such strategies. Some candidates might have a poor understanding of the concept of 'region' and included the environmental problems and related management strategies of other places in China in their answers. A few candidates gave far-fetched arguments such as 'enterprises might not obey the pollution laws', 'economic growth due to industrialisation might aggravate environmental problems,' etc. Some candidates described environment

General comments and recommendations

- 1. Candidates should improve their knowledge of key geographical concepts to provide accurate, relevant and logical arguments.
- 2. Candidates should read the key terms of the questions carefully and interpret each question holistically before answering, instead of writing irrelevant materials learnt by rote.
- Candidates should make full use of the information provided when answering data-based questions.
 They should interpret the data rather than copying them as answers.

- 4. Candidates should choose to answer questions from modules which they have learnt properly. They should avoid attempting questions of unfamiliar modules by using only common knowledge, which may result in poor performance due to misinterpretation of the questions and wrong concepts.
- Candidates should continuously update their knowledge and information when studying the various modules.
- 6. Candidates may apply their knowledge of different modules to answer a question, if appropriate, particularly in the discussion part.
- Candidates should have a clear stance in discussion, instead of simply presenting arguments of pros and cons.
- 8. Candidates should cite relevant and precise examples to substantiate their answers when necessary.