

GEOGRAPHY PAPER 1

8.30 am – 11.00 am (2½ hours)

This paper must be answered in English

GENERAL INSTRUCTIONS

- This paper consists of **THREE** sections:
 - Section A** – consists of 40 multiple-choice questions. Answer **ALL** questions in this section.
 - Section B** – consists of 4 data / skill-based structured questions. Choose **TWO** questions only in this section.
 - Section C** – consists of 3 short essay questions. Choose **ONE** question only in this section.
- Draw sketch maps and diagrams to supply additional, relevant information when appropriate.
- A map extract is provided and to be returned to the HKEAA at the end of the examination.
- Answers to Section A should be marked on the Multiple-choice Answer Sheet. Answers to Sections B and C should be written in the Answer Book. In the Answer Book, start each question (not part of a question) on a new page. **The Answer Sheet for Section A and the Answer Book for Sections B and C must be handed in separately at the end of the examination.**

INSTRUCTIONS FOR SECTION A (MULTIPLE-CHOICE QUESTIONS)

- Read carefully the instructions on the Answer Sheet. After the announcement of the start of the examination, you should first stick a barcode label and insert the information required in the spaces provided. No extra time will be given for sticking on the barcode label after the 'Time is up' announcement.
- When told to open this book, you should check that all the questions are there. Look for the words '**END OF SECTION A**' after the last question.
- All questions carry equal marks.
- ANSWER ALL QUESTIONS.** You are advised to use an HB pencil to mark all the answers on the Answer Sheet, so that wrong marks can be completely erased with a clean rubber. You must mark the answers clearly; otherwise you will lose marks if the answers cannot be captured.
- You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.
- No marks will be deducted for wrong answers.

Section A: There are 40 questions in this section. Answer ALL questions in this section. All the answers must be marked on the Answer Sheet.

Refer to the map extract of Hong Kong (1:5 000) provided to answer Questions 1 to 8.

1. Which of the following facilities **cannot** be found in grid square 4512?
 - A. hotel
 - B. playground
 - C. sports ground
 - D. bus terminus

2. Which of the following is the reduced bearing of the Main Building of the University of Hong Kong (455123) from the pavilion at 452108?
 - A. E 80° N
 - B. S 10° W
 - C. W 80° S
 - D. N 10° E

3. Which of the following is the average gradient of the section of Hospital Road from spot height 22.3 (467127) to spot height 69.1 (475121)?
 - A. 1:7
 - B. 1:10
 - C. 1:13
 - D. 1:16

4. The area of the SunYat Sen Memorial Park Swimming Pool in grid square 4613 is approximately
 - A. 5 200 m².
 - B. 5 700 m².
 - C. 6 200 m².
 - D. 6 700 m².

5. Which of the following are possible reasons for the siting of the Western Wholesale Food Market (grid square 4513)?

- (1) convenient transport
- (2) plenty of open space
- (3) proximity to residents

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

6. Which of the following are correct descriptions of the Main Building of the University of Hong Kong (grid square 4512)?

- (1) it is constructed along a hill slope
- (2) it is located above 100 m
- (3) it is a declared monument

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

7. Which of the following places are intervisible with spot height 542.5 (467104)?

- (1) Realty Gardens (470118)
- (2) Hatton Road Fresh Water Service Reservoir (459109)
- (3) Conduit Road Service Reservoir Playground (482108)

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

8. Refer to the transect from 470137 to 470127 below.



Which of the following labels in the above transect is **incorrect**?

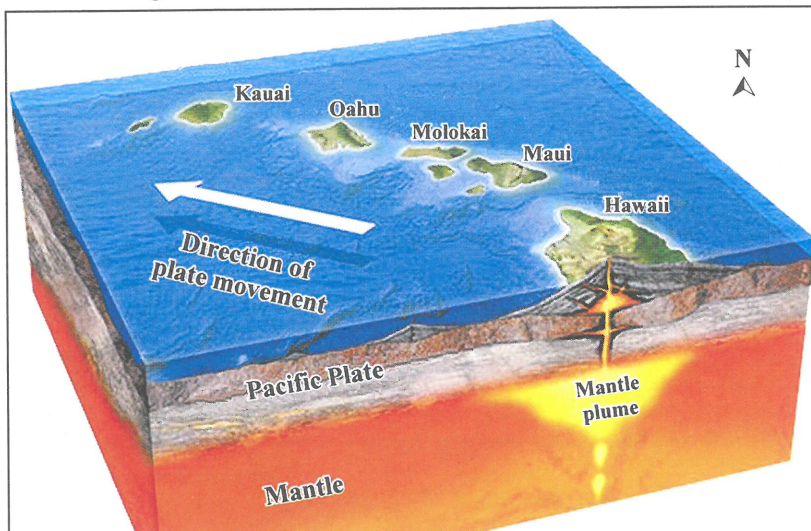
- A. Recreational land use
- B. Transportation land use
- C. Industrial land use
- D. Institutional land use

9. Which of the following tectonic processes have occurred in the Himalayan region?

- (1) folding
- (2) faulting
- (3) vulcanicity

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

10. Refer to the figure below which shows the chain of Hawaiian volcanic islands.



Which of the following are correct descriptions of the above figure?

- (1) Hot spot has created this chain of volcanic islands.
- (2) The chain of volcanic islands occurs along the conservative plate boundary.
- (3) The age of volcanoes increases from SE to NW.

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

11. Which of the following factors affect the intensity of earthquakes?

- (1) the number of aftershocks
- (2) the distance from the epicentre
- (3) the duration of shaking

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

12. Which of the following measures may help to reduce casualties in earthquakes?

- (1) earthquake-proof structures
- (2) well-equipped rescue teams
- (3) earthquake drills

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

13. Refer to the photograph below.

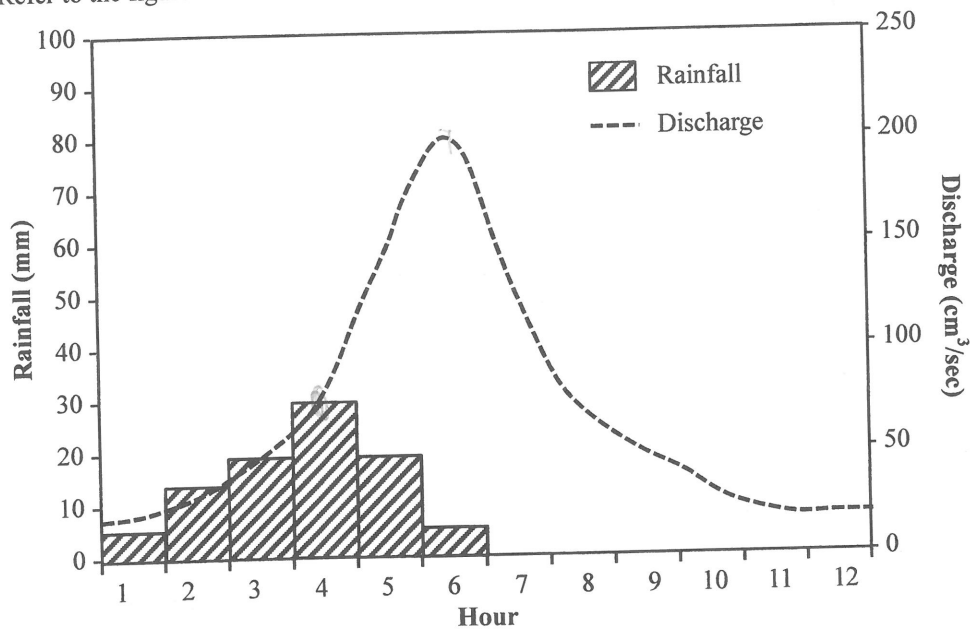


Which of the following explains the formation of the coastal landform feature shown in the above photograph?

- (1) long fetch
- (2) sheltered location
- (3) presence of lines of weakness

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

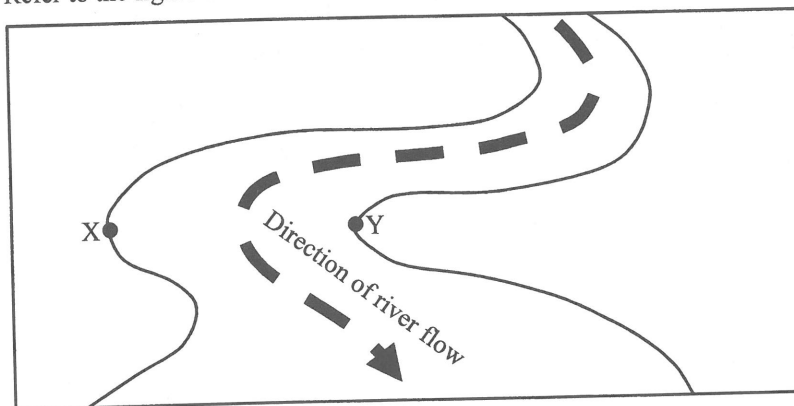
14. Refer to the figure below which shows the hydrograph of a river.



What is the time lag in the above hydrograph?

- A. 2 hours
- B. 3 hours
- C. 4 hours
- D. 5 hours

15. Refer to the figure below which shows the middle course of a river.



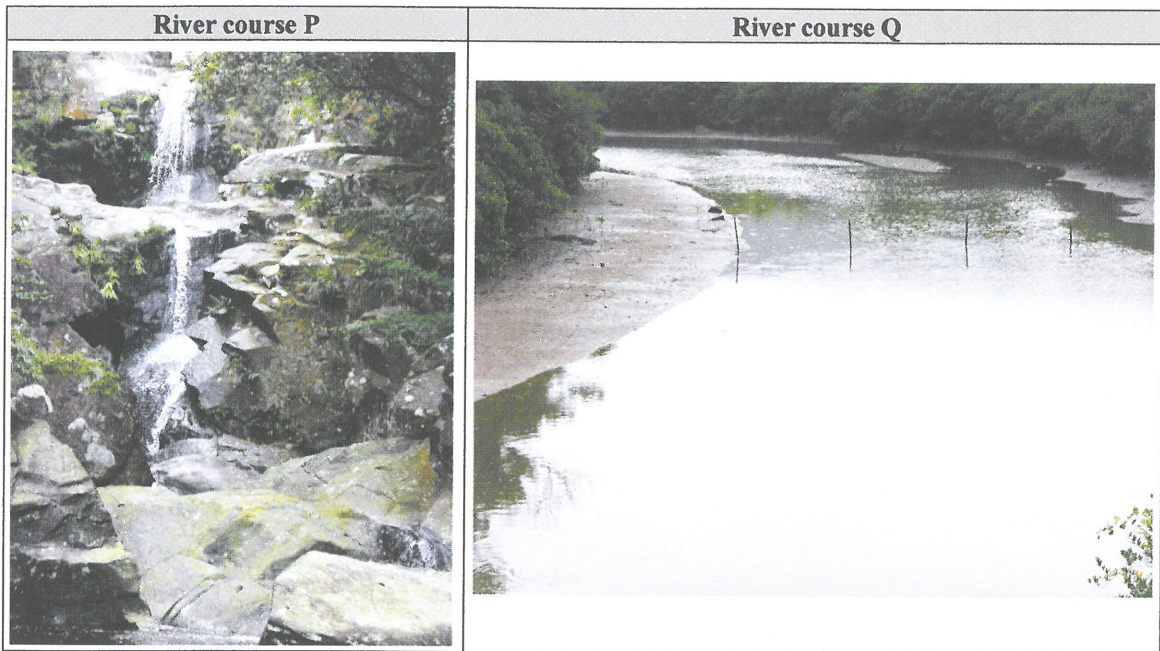
Which of the following descriptions of points X and Y are correct?

	Point X	Point Y
(1) <i>River velocity</i>	lower	higher
(2) <i>Work of river</i>	erosion	deposition
(3) <i>Landform resulted</i>	river cliff	slip off slope

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

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16. Refer to the photographs of river courses P and Q below.



Which of the following descriptions of river courses P and Q are correct?

	River course P	River course Q
(1) Channel gradient	steeper	gentler
(2) Particle size of load	larger	smaller
(3) Erosive power	higher	lower

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

17. Which of the following is the change brought about by afforestation to the water cycle?

- A. decrease in infiltration
- B. decrease in interception
- C. increase in transpiration
- D. increase in surface runoff

18. Which of the following is the reason for the relocation of the iron and steel industry in China from the inland to the coastal regions?

- A. to facilitate export
- B. to be closer to coal mine
- C. to enjoy tax incentives
- D. to benefit from lower labour cost

19. Which of the following is a market-oriented industry?

- A. textile
- B. aluminium smelting
- C. automobile manufacturing
- D. food processing

20. Which of the following was the major industrial area in Hong Kong in the 1950s?

- A. Tsuen Wan
- B. Tuen Mun
- C. Sha Tin
- D. Tai Po

21. Which of the following are the reasons for the occurrence of industrial inertia?

- (1) high relocation cost ✓
- (2) developing overseas markets
- (3) maintaining industrial linkages ✓

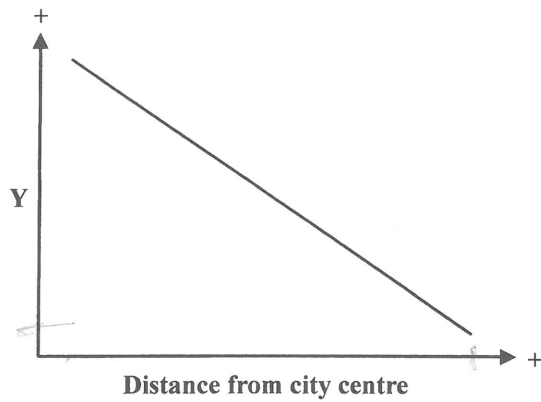
- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

22. Which of the following are the advantages of industrial agglomeration?

- (1) sharing of infrastructure ✓
- (2) lowering of pollution levels
- (3) enhancing information flow ✓

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

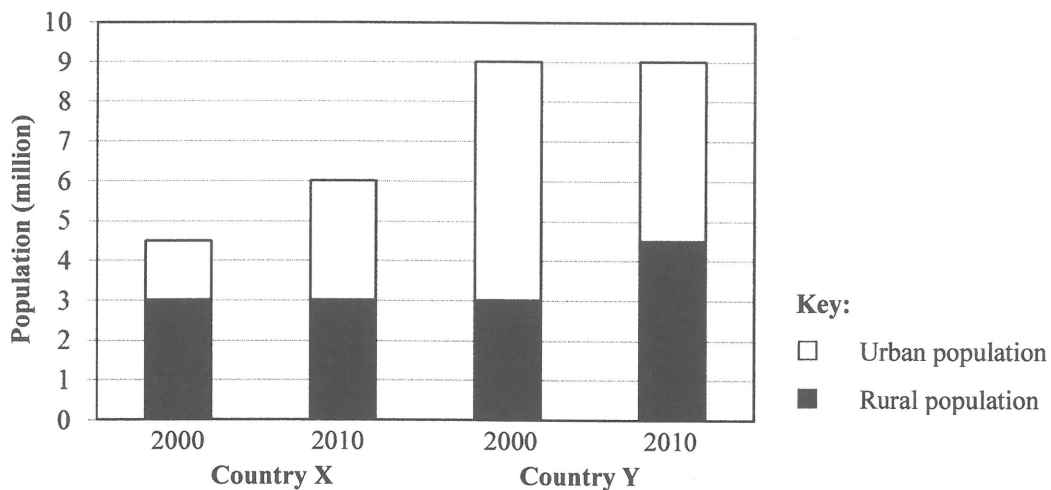
23.



Which of the following are possible labels for the Y-axis in the above graph?

- (1) Land rent
 - (2) Accessibility
 - (3) Building height
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

24. Refer to the graph below which shows the population composition of countries X and Y in 2000 and 2010.



Which of the following statements is (are) correct?

- (1) Country X experienced urbanisation in 2010.
 - (2) The degree of urbanisation in country X was lower than that of country Y in 2010.
 - (3) Urban growth occurred in country Y from 2000 to 2010.
- A. (1) only
 - B. (3) only
 - C. (1) and (2) only
 - D. (2) and (3) only

25. Of the following types of solid waste disposed of in Hong Kong landfills, which made up the largest amount in 2015?

- A. special waste
- B. domestic waste
- C. construction waste
- D. industrial and commercial waste

26. Refer to the photograph below which shows a measure to improve the road environment.



Which of the following are the merits of the measure shown in the above photograph?

- (1) improving traffic congestion
- (2) protecting pedestrian safety
- (3) reducing air pollution

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

27. Which of the following are considered green living?

- (1) taking a bath instead of a shower
- (2) purchasing food produced locally
- (3) using the mass transit system

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

28. Which of the following are measures farmers in Southern California use to tackle climatic constraints?

- (1) irrigation ✓
 - (2) dry farming
 - (3) crop rotation ✓
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

29. Refer to the photograph below.



Which of the following are characteristics of the agricultural activity shown in the above photograph?

- (1) arable farming
 - (2) intensive farming ✓
 - (3) commercial farming
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only ✓
D. (1), (2) and (3)

30. Which of the following are possible consequences of excessive use of insecticides?

- (1) soil contamination ✓
- (2) river eutrophication ✓
- (3) severe pest problem ✓

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

31. Which of the following methods help reduce soil erosion?

- (1) multiple cropping
- (2) drip irrigation
- (3) mulching

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

32. Which of the following are correct descriptions of the abiotic components in the tropical rainforest ecosystem?

- (1) fertile soil
- (2) small annual range of temperature
- (3) high relative humidity

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

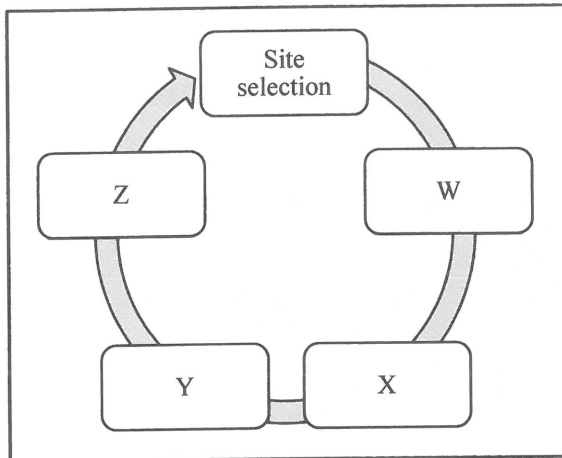
33. Refer to the photograph below which shows a type of plant in the tropical rainforest.



Which of the following is the type of plant shown in the above photograph?

- A. climber
 - B. epiphyte
 - C. liana
 - D. undergrowth
34. Which of the following changes to the food chain in a tropical rainforest is brought about by large scale deforestation?
- (1) a shortening of the food chain ✓
 - (2) an increase in trophic levels
 - (3) a decrease in number of producers ✓
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

35. Refer to the flow chart below which shows the process of shifting cultivation.



Which of the following is the correct labelling of the above flow chart?

	W	X	Y	Z
A.	Crop planting	Harvesting	Field abandoning	Slash and burn
B.	Crop planting	Slash and burn	Harvesting	Field abandoning
C.	Slash and burn	Crop planting	Harvesting	Field abandoning
D.	Slash and burn	Harvesting	Field abandoning	Crop planting

36. Which of the following are reasons limiting the effectiveness of reforestation in restoring the ecological environment of a tropical rainforest?

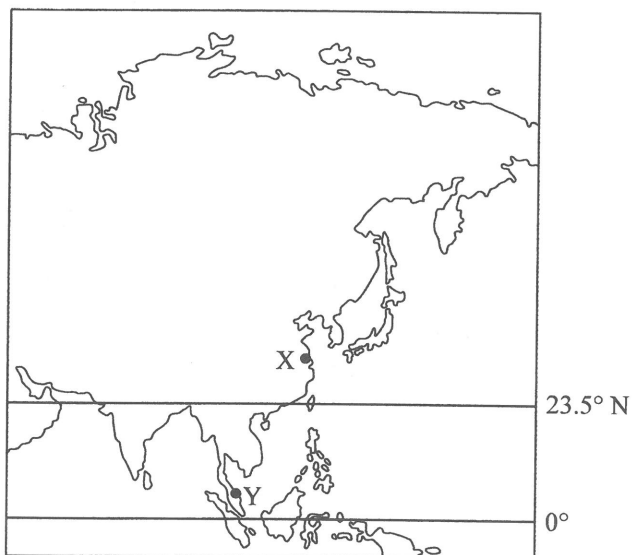
- (1) limited species
- (2) insufficient capital
- (3) confined area

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

37. Which of the following factors affect the temperature of an area?

- (1) altitude
 - (2) ocean current
 - (3) prevailing wind
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

38. Refer to the figure below.



Which of the following pairs of comparison between cities X and Y are correct?

	City X	City Y
(1) <i>Angle of insolation</i>	smaller	larger
(2) <i>Mean annual temperature</i>	lower	higher
(3) <i>Annual range of temperature</i>	smaller	larger

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

39. Which of the following human activities and the sources of greenhouse gases are correctly matched?

	Human activity	Source of greenhouse gas
(1)	agriculture	methane
(2)	waste incineration	carbon dioxide
(3)	manufacturing of chemical fertilisers	nitrous oxide

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

40. Which of the following are the impact of global warming on agriculture?

- (1) the intensification of global pest problem ✓
- (2) the lengthening of the drought period in semi-arid regions ✓
- (3) the extension of the growing season in high latitudinal regions ✓

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

END OF SECTION A

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Section B: Answer any TWO questions from this section. Each question carries 18 marks.

1. Figure 1a shows the plate boundaries and the location of some of the world's major volcanoes, including volcanoes X and Y. Figure 1b shows a photograph of the eruption of volcano X and a sketch map of its hazards. Figure 1c shows the information of the island where volcano Y is located.

Figure 1a

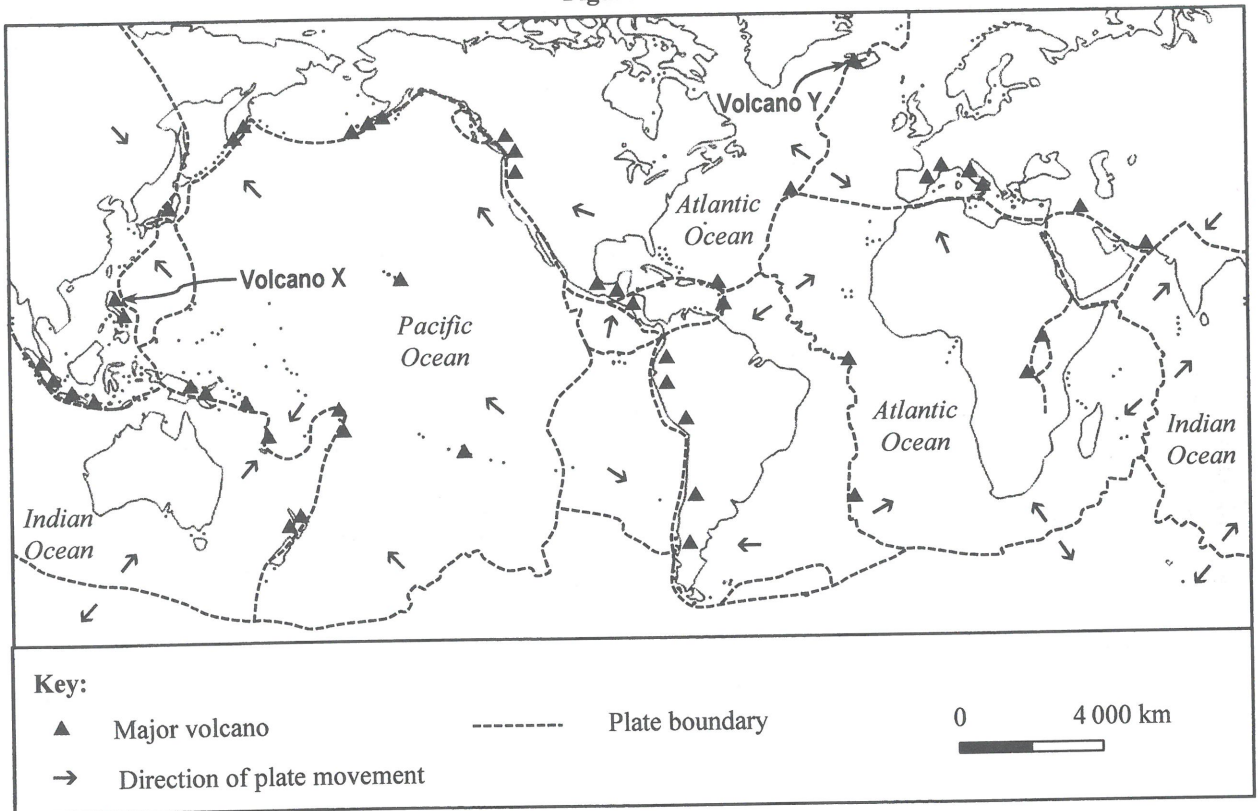
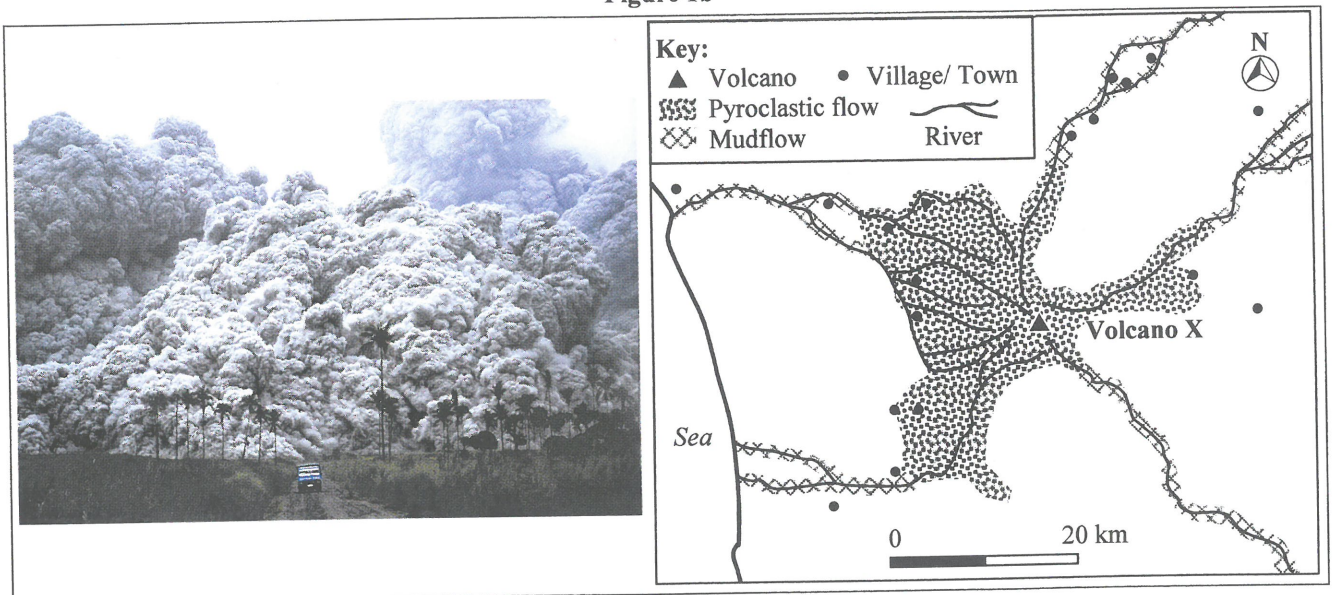
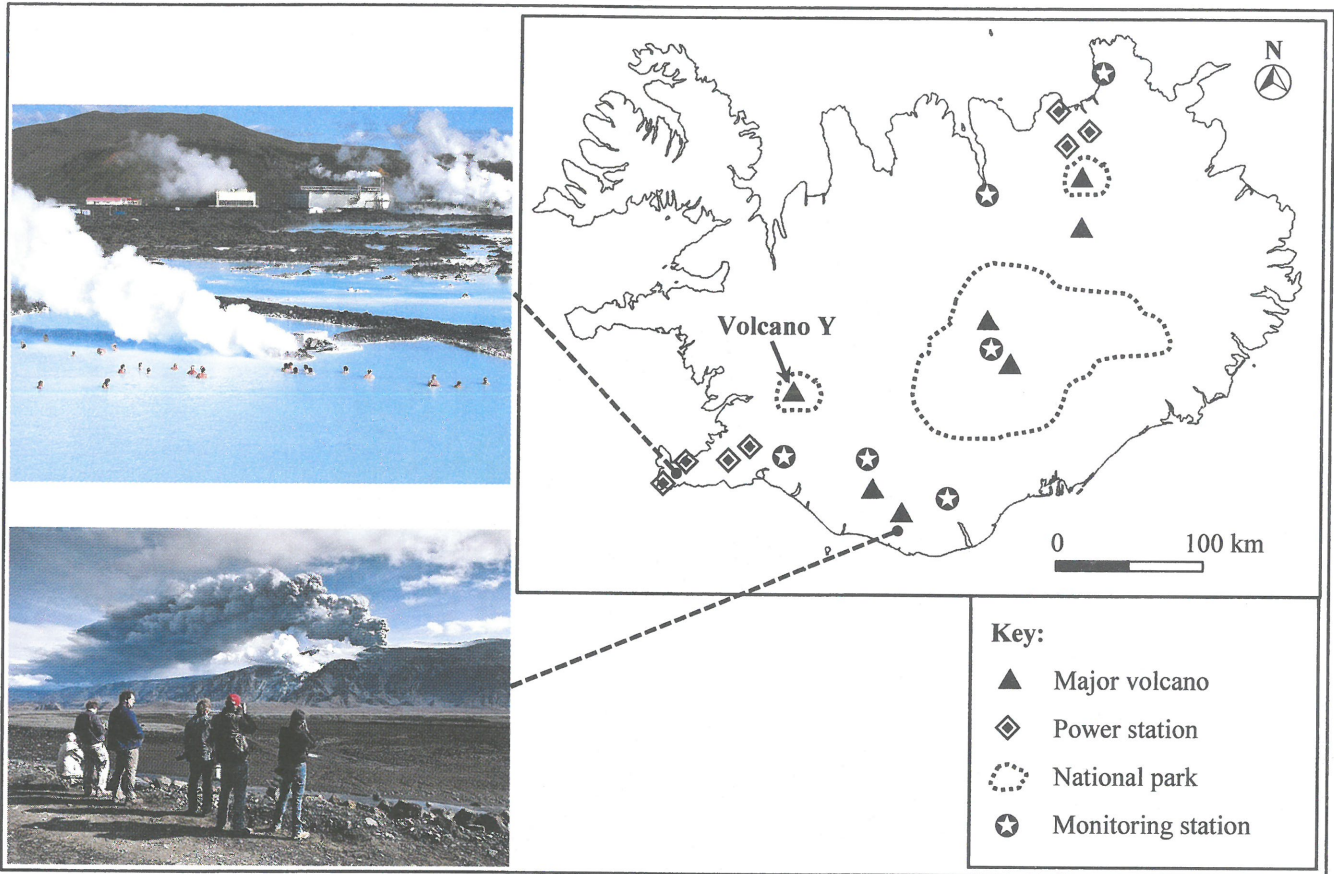


Figure 1b



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Figure 1c



(a) Refer to Figure 1a.

(i) Describe the spatial distribution of major volcanoes in the Pacific region. (2 marks)

(ii) Compare the formation of volcanoes X and Y. (6 marks)

(b) Refer to Figures 1b and 1c.

(i) What might be the negative impact of the eruption of volcano X? (3 marks)

(ii) Explain how technology may reduce the negative impact mentioned in (b) (i). (3 marks)

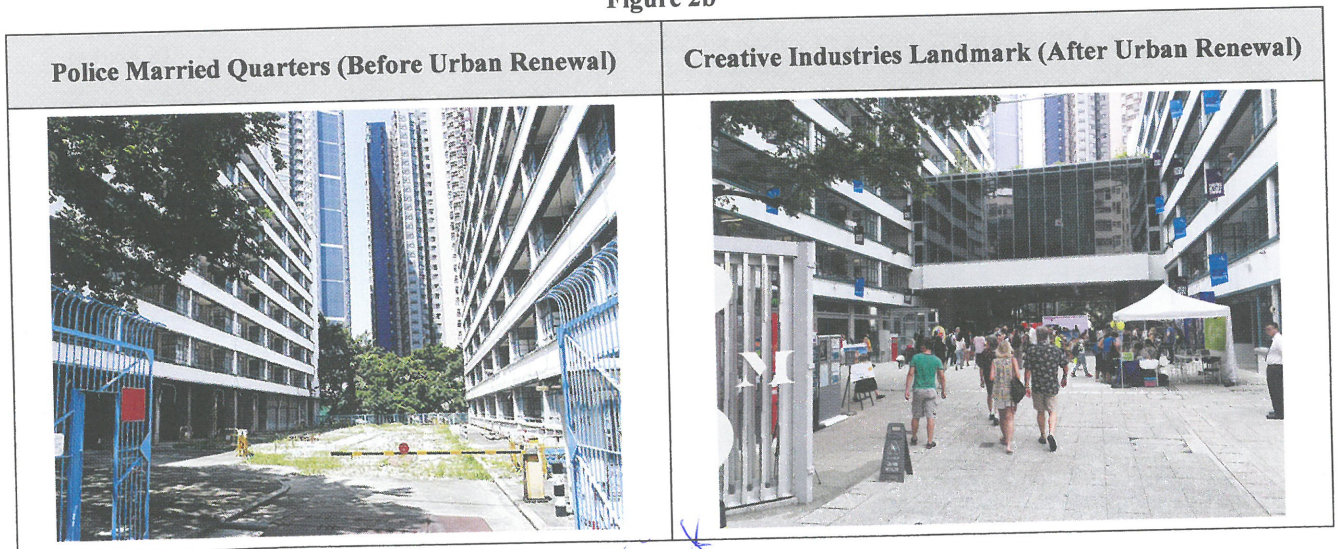
(iii) Discuss the opportunities and risks brought about by volcano Y. (4 marks)

2. Refer to the map extract (1:5 000) of Hong Kong which shows part of Sheung Wan and Sai Ying Pun. Photograph 2a shows area X in the map extract. Figure 2b shows the different appearances of site Y in the map extract before and after urban renewal.

Photograph 2a



Figure 2b



*preservation
rehabilitation
revitalization
development*

*up
rec.
water
heat island*

- (a) Refer to the map extract (1:5 000) of Hong Kong.

Describe the land uses of the area bounded by broken lines in grid squares 4711, 4712, 4811 and 4812. (3 marks)

- (b) Refer to Photograph 2a and the map extract (1:5 000) of Hong Kong.

(i) Describe the urban problems occurred in area X. (3 marks)

(ii) Explain how redevelopment may solve the urban problems in area X. (3 marks)

- (c) Refer to Figure 2b and the map extract (1:5 000) of Hong Kong.

(i) Identify the urban renewal strategy at site Y. (1 mark)

(ii) What are the merits of the urban renewal strategy mentioned in (c) (i)? (4 marks)

- (d) *Rehabilitation is another urban renewal strategy to solve the inner city problems.*

Discuss the merits and demerits of rehabilitation in Sheung Wan district. (4 marks)

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3. Figure 3a shows the location and the prevailing wind directions of the Sahel region. Table 3b shows the climatic conditions of area X in Figure 3a. Photograph 3c shows an agricultural activity in area X.

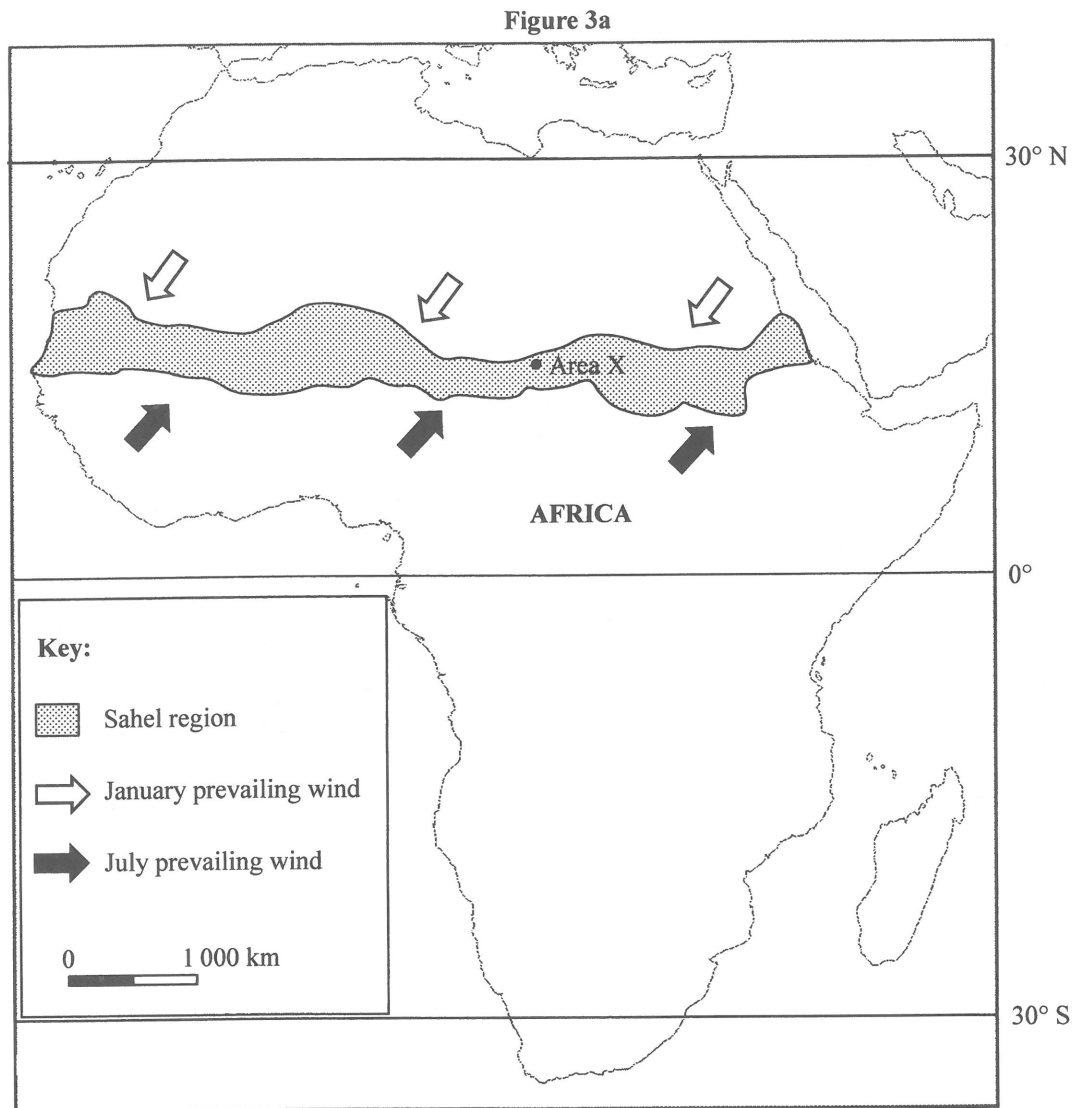
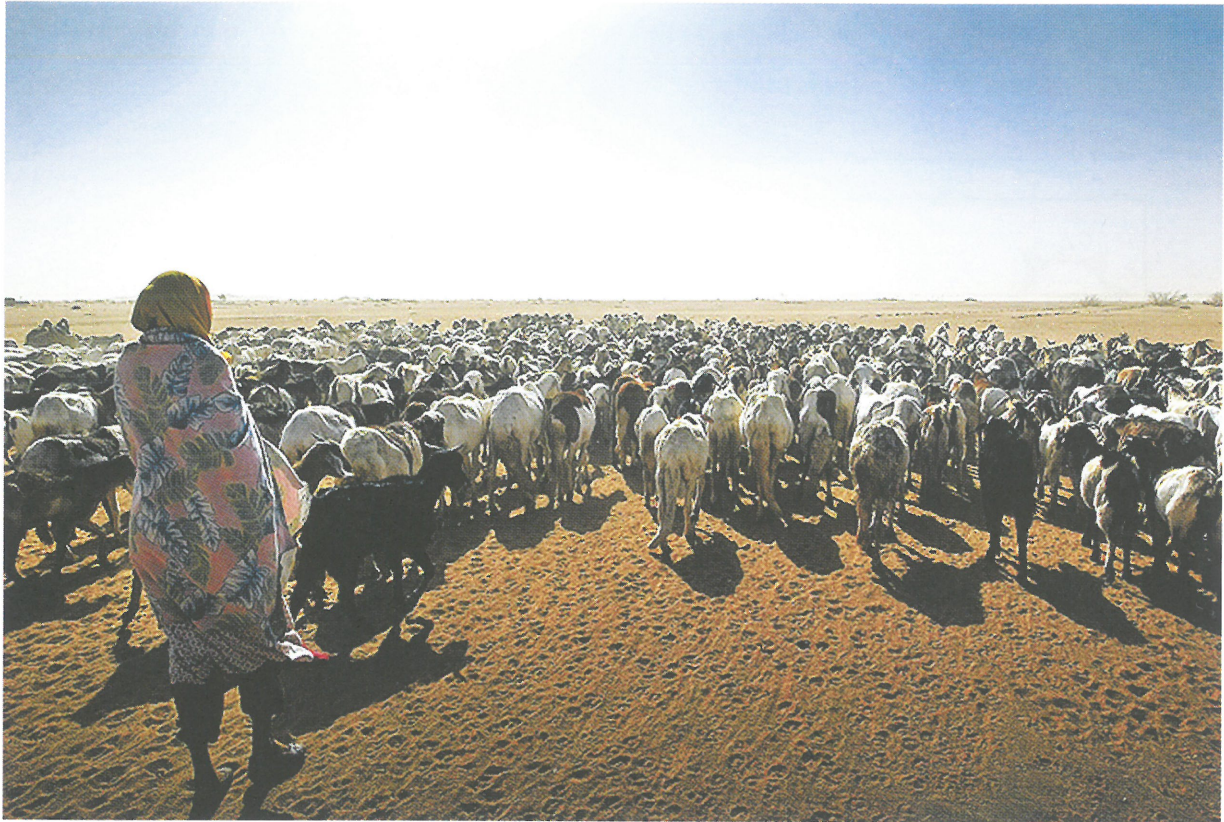


Table 3b

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	26.8	28.1	31.2	33.3	33.2	32.2	28.7	27.0	28.4	30.0	28.5	25.9
Rainfall (mm)	0	0	0	1	24	28	141	232	67	14	0	0
Potential Evapotranspiration (mm)	137	131	174	187	198	191	175	150	157	166	148	129

Photograph 3c



(a) Refer to Figure 3a, Table 3b and Photograph 3c.

(i) Describe and explain the climatic characteristics of area X. (4 marks)

(ii) Explain how the agricultural activity shown in Photograph 3c adapts to the climatic characteristics of area X. (5 marks)

(b) *The population in the Sahel region has increased by 30% in the last decade, leading to the shortage of food.*

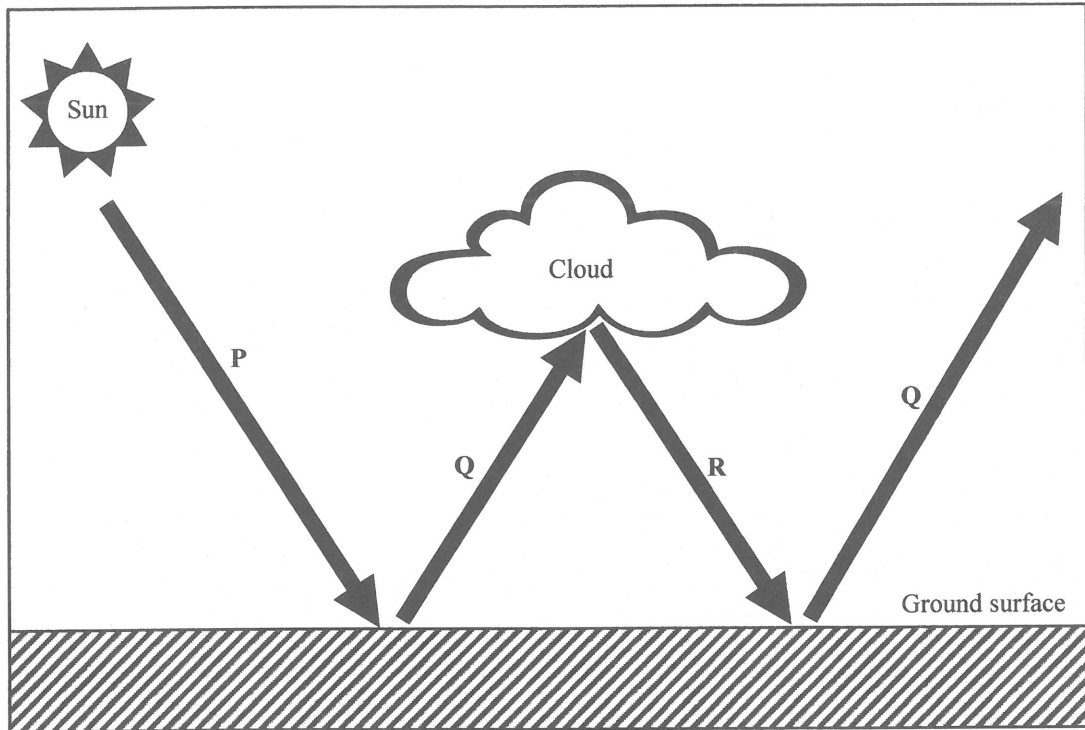
The agricultural activity shown in Photograph 3c cannot provide sufficient food. Account for the reasons. (5 marks)

(c) *It has been suggested that cash crops should be grown in area X to solve the food shortage problem.*

Discuss the reasons for and against such a suggestion. (4 marks)

4. Figure 4a shows the radiation activities in the atmosphere. Table 4b shows the data related to global temperature anomalies from 1990 to 2015. Table 4c shows the carbon dioxide emissions of four countries in 1994, 2004 and 2014.

Figure 4a



(Items in the figure not drawn to scale)

Table 4b

Year	Global forest area (thousand ha)	Global fossil fuel consumption (million tonnes oil equivalent)	Mean atmospheric carbon dioxide concentration (ppm)	Global temperature anomalies* (°C)
1990	4 128 269	7 906	354	+ 0.4
2000	4 055 602	8 152	369	+ 0.4
2010	4 015 673	10 601	389	+ 0.7
2015	3 999 134	11 306	399	+ 0.9

* Based on the mean temperatures from 1951 to 1980

Table 4c

Country	Carbon dioxide emissions					
	Total emissions (million tonnes)			Per capita emissions (tonnes)		
	1994	2004	2014	1994	2004	2014
USA	5 223	5 863	5 335	19.7	19.8	16.5
UK	555	556	415	9.6	9.3	6.5
China	3 143	5 787	10 541	2.6	4.4	7.6
India	809	1 205	2 342	0.9	1.1	1.8

(a) Refer to Figure 4a.

(i) Identify the atmospheric radiation represented by P, Q and R. (3 marks)

(ii) Explain how the radiation activities shown in Figure 4a maintain the atmospheric temperature. (3 marks)

(b) Refer to Figure 4a and Table 4b. Account for the relationship between human activities and global warming. (4 marks)

(c) International conferences suggest reducing carbon dioxide emissions to alleviate the phenomenon of global warming.

(i) Refer to Table 4c. Compare the effectiveness of reducing carbon dioxide emissions among different countries. (4 marks)

(ii) Discuss whether the more developed countries or less developed countries should bear a greater responsibility to alleviate global warming. (4 marks)

Section C: Answer any ONE question from this section. Each question carries 12 marks.

5. Explain the physical factors affecting the removal of beach materials in Hong Kong. Discuss whether beach nourishment is an effective coastal management strategy in Hong Kong. (12 marks)

6. Explain the characteristics of the global locational distribution of the IT industry. Using the US as an example, discuss how the government may expand the development of the IT industry in its own country. (12 marks)

7. Give an account of the nutrient cycling of the tropical rainforest ecosystem. Assess the impact of plantation on the nutrient cycling of the tropical rainforest. (12 marks)

END OF PAPER

Sources of materials used in this paper will be acknowledged in the booklet *HKDSE Question Papers* published by the Hong Kong Examinations and Assessment Authority at a later stage.