

GEOGRAPHY PAPER 1

8.30 am – 11.00 am (2½ hours)

This paper must be answered in English.

GENERAL INSTRUCTIONS

1. 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.
2. Draw sketch maps and diagrams to supply additional, relevant information when appropriate.
3. A map extract is provided and to be returned to the HKEAA at the end of the examination.
4. 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)

1. 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.
2. 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.
3. All questions carry equal marks.
4. **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.
5. You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.
6. No marks will be deducted for wrong answers.

Not to be taken away before the
end of the examination session

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 (1:20 000) provided to answer Questions 1 to 8.

1. Which of the following **cannot** be found in grid square 0266?

- A. power line
- B. monastery / temple
- C. declared monument
- D. church

2. The photograph below was taken from the bridge at 019667.



In which direction was the photograph taken?

- A. southeast
- B. southwest
- C. northeast
- D. northwest

3. The area of the golf course in grid squares 0270, 0271, 0370 and 0371 is approximately

- A. 90 000 m².
- B. 120 000 m².
- C. 150 000 m².
- D. 180 000 m².

4. Which of the following is the average gradient from spot height 482 (050674) to the North Lantau Highway at 050687?

- A. 1:1.8
- B. 1:2.6
- C. 1:3.4
- D. 1:4.2

5. Which of the following sites are intervisible with spot height 482 (050674)?

- (1) spot height 529 (047670)
- (2) spot height 574 (052666)
- (3) spot height 287 (059676)

- 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 the locational advantages of the AsiaWorld-Expo (grid square 0371)?

- (1) leisure facilities nearby
- (2) public housing estate nearby
- (3) MTR station nearby

- 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 factors are favourable to the formation of mud-flats in grid square 0167?

- (1) located in a bay
- (2) the depth of water being less than 5 m
- (3) proximity to a river mouth

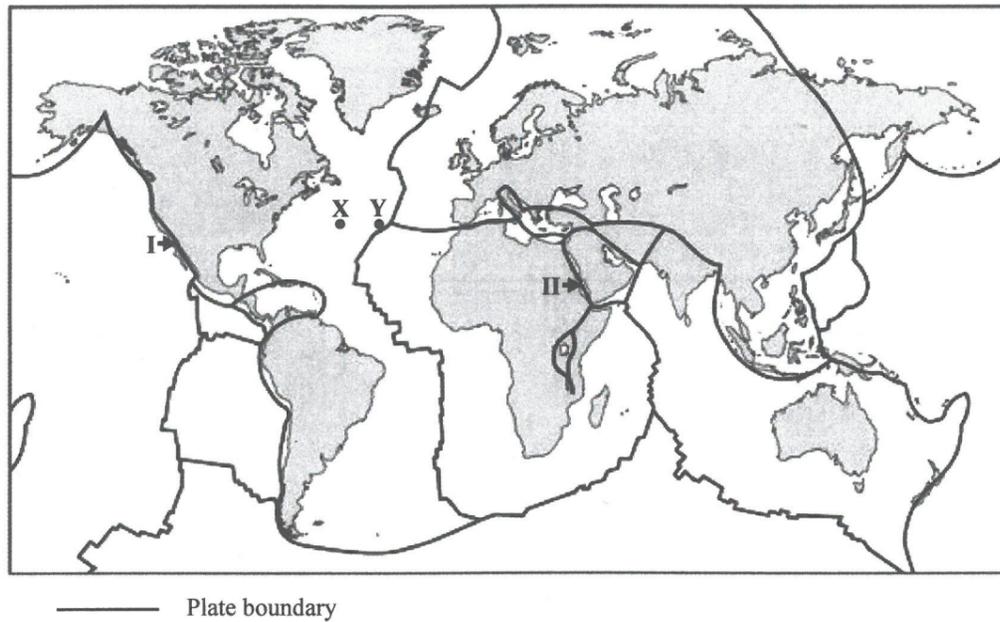
- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

8. Which of the following factors restrict the agricultural development in grid square 9866?

- (1) low accessibility
- (2) inadequate flat land
- (3) a lack of water source

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

Refer to the figure below to answer Questions 9 and 10.



9. Which of the following pairs of comparison between places X and Y are correct?

	Place X	Place Y
(1) <i>Rock age</i>	older	younger
(2) <i>Depth of ocean</i>	shallower	deeper
(3) <i>Tectonic activities</i>	less active	more active

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

10. Which of the following descriptions of plate boundaries I and II are correct?

	Plate boundary I	Plate boundary II
(1) <i>Internal force</i>	shearing	tensional
(2) <i>Tectonic hazard(s)</i>	volcanic eruption and earthquake	volcanic eruption
(3) <i>Effect on the lithosphere</i>	no new crustal materials formed	new crustal materials formed

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

11. Refer to the photograph below.

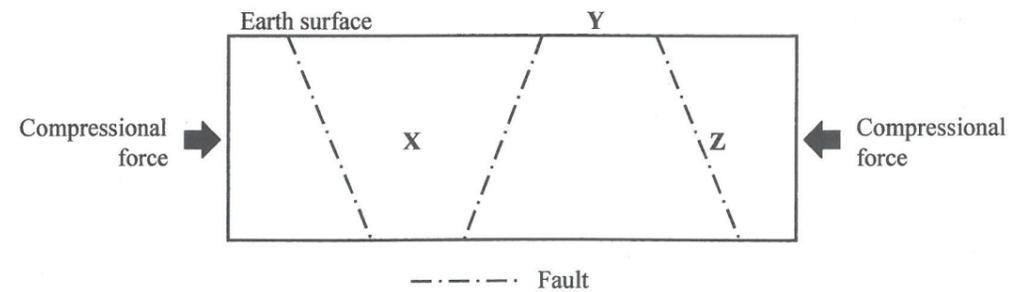


Which of the following are the **immediate** impact of the tectonic hazard shown in the above photograph?

- (1) higher agricultural outputs
- (2) people being buried by volcanic ash
- (3) lower visibility

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

12. Refer to the figure below.



Which of the following is (are) the result(s) of faulting shown in the above figure?

- (1) X slides down.
- (2) Rift valley is formed at Y.
- (3) Normal fault is formed at Z.

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

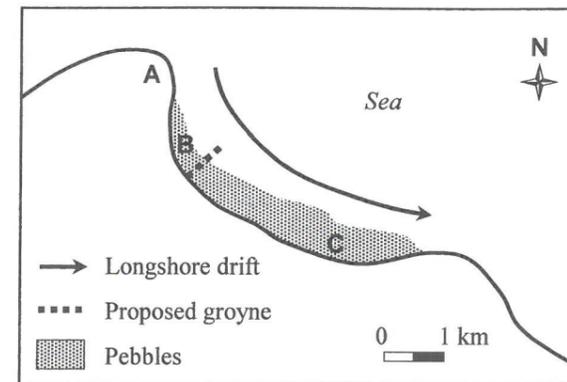
13. Refer to the photograph below.



Landform X is a

- A. wave-cut platform.
- B. tombolo.
- C. sea arch.
- D. stack.

Refer to the figure below to answer Questions 14 and 15.



14. Which of the following descriptions about the above figure are correct?

- (1) Depositional landform is found along the shore.
- (2) Pebbles are transported along the shore from NW to SE.
- (3) Pebbles at C are generally larger than those at B.

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

15. Which of the following are the possible changes brought about by the construction of a groyne near B?

- (1) less erosion at A
- (2) less pebbles removed from B
- (3) less pebbles deposited at C

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

16. Which of the following are factors affecting the magnitude of wave energy?

- (1) wave frequency
- (2) wind speed
- (3) fetch

- 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 are the examples of human utilisation of the floodplains?

- (1) building settlements
 - (2) generating hydro-electric power
 - (3) opening up farmland
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

18. Which of the following are the correct descriptions of mobile phone industry?

- (1) weight-losing industry
 - (2) fabricating industry
 - (3) high-tech industry
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

19. Which of the following is (are) the push factor(s) causing IT plants to relocate from the USA to China since 2000?

- (1) rising labour costs in the USA
 - (2) stricter carbon emission control in the USA
 - (3) more government incentives in China
- A. (1) only
B. (3) only
C. (1) and (2) only
D. (2) and (3) only

20. Which of the following will be brought about by globalisation to the IT industry?

- (1) multi-point location of manufacturing plants
 - (2) a worldwide network of component suppliers
 - (3) outsourcing of production
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

21. Which of the following are the advantages of clustering IT firms in Silicon Valley?

- (1) attracting professionals
 - (2) sharing ancillary services
 - (3) minimising competition
- 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 pairs of comparison of locational factors for industrial development between Hong Kong and South China in the 1980s are correct?

	Hong Kong	South China
(1) <i>Land rent</i>	higher	lower
(2) <i>Electricity supply</i>	less	more
(3) <i>Labour supply</i>	less	more

- 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 the impact brought about by urban encroachment?

- (1) a reduction in farmland area
 - (2) damage to wildlife habitats
 - (3) land use conflicts
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

24. Which of the following are the purposes of building rehabilitation?

- (1) to reduce building density
 - (2) to improve building quality
 - (3) to increase building safety
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

25. Which of the following is (are) the cause(s) of reurbanisation?

- (1) an expansion of the central business district
- (2) an improvement in the environmental quality of the inner city
- (3) a decrease in commuting costs

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

26. Which of the following means of increasing urban land supply align with the principles of sustainable development?

- (1) redeveloping vacant factory buildings
- (2) moving public facilities into rock caverns
- (3) resuming urban parks for development

- 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 the measures taken by the Hong Kong SAR Government to improve roadside air quality?

- (1) encouraging the use of biodiesel
- (2) subsidising the replacement of old diesel commercial vehicles
- (3) expanding railway networks

- 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 the physical inputs of livestock rearing?

- (1) fertilisers
- (2) vegetation
- (3) water

- 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 descriptions about the farming system shown in the above photograph are correct?

- (1) arable farming
- (2) low technology input
- (3) capital-intensive

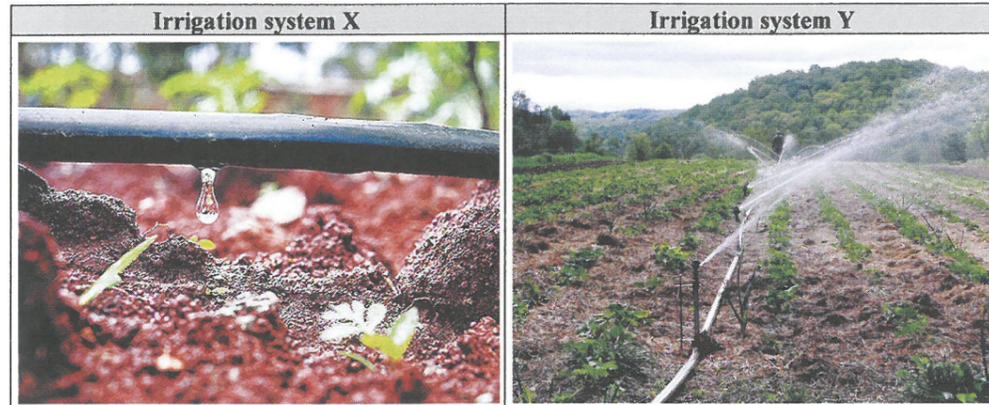
- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

30. Which of the following descriptions about the physical environment of Southern California are correct?

- (1) semi-arid to arid climate
- (2) rainfall decreasing generally towards inland
- (3) small annual range of temperature

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

31. Refer to the photographs below which show irrigation systems X and Y.



Which of the following descriptions of irrigation systems X and Y are correct?

	Irrigation system X	Irrigation system Y
(1) Amount of infiltration	less	more
(2) Amount of water wastage	less	more
(3) Risk of salinization	lower	higher

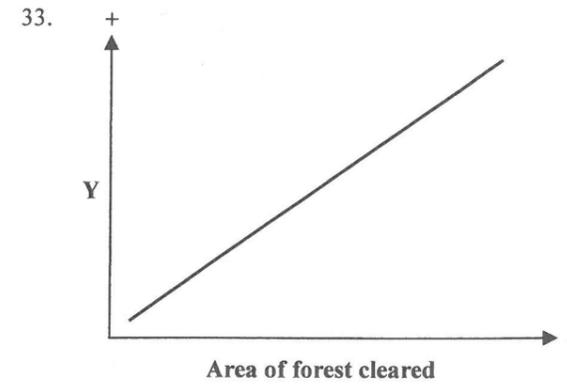
- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

32. Refer to the figure below.



Which of the following locations in the above figure has the smallest area of tropical rainforests?

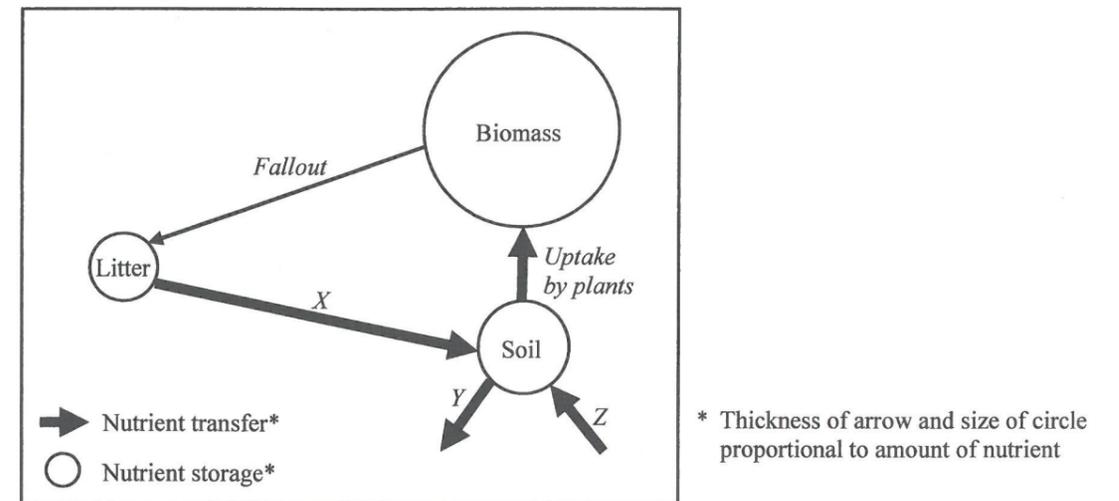
- A. (1)
- B. (2)
- C. (3)
- D. (4)



Which of the following is (are) the possible label(s) for the Y-axis in the above graph?

- (1) Soil erosion
 - (2) Evapotranspiration
 - (3) Biodiversity
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only

34. Refer to the figure below.



Which of the following are the correct labelling for X, Y and Z in the above figure?

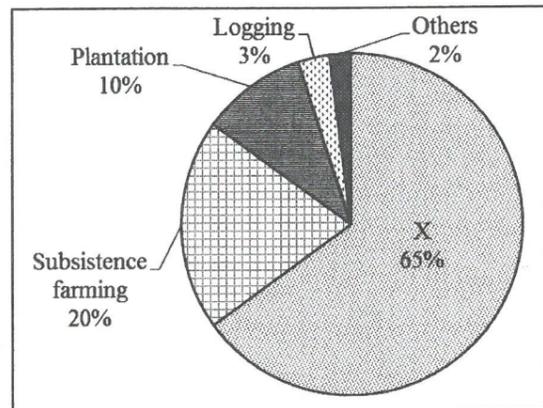
	X	Y	Z
A.	littering	surface runoff	leaching
B.	littering	leaching	weathering
C.	decomposition	surface runoff	leaching
D.	decomposition	leaching	weathering

35. Which of the following statements about the biomass in tropical rainforests is (are) correct?

- (1) Biomass refers to the weight of plants.
- (2) Biomass increases with the practice of large-scale commercial farming.
- (3) Biomass decreases with the practice of shifting cultivation.

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

36. The diagram below shows the percentages of forest clearing by different human activities in the Brazilian Amazon from 2000 to 2005.



Label X is

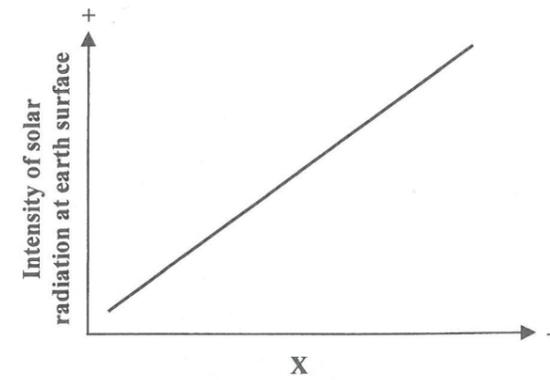
- A. mining.
- B. urbanisation.
- C. cattle ranching.
- D. dam construction.

37. Greenhouse gas emission may be reduced by

- (1) developing a mass transit system.
- (2) improving the efficiency of energy use.
- (3) promoting the use of renewable energy.

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

38.



Which of the following is (are) the possible label(s) for the X-axis in the above graph?

- (1) Angle of insolation
- (2) Amount of aerosol
- (3) Cloud cover

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

39. Refer to the photograph below which shows a building design.



Which of the following is (are) the purpose(s) of the design shown in the above photograph?

- (1) to reduce energy consumption
- (2) to enhance the absorption of carbon dioxide from the atmosphere
- (3) to lower maintenance costs of the building

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

40. Refer to the photograph below which shows a human activity.



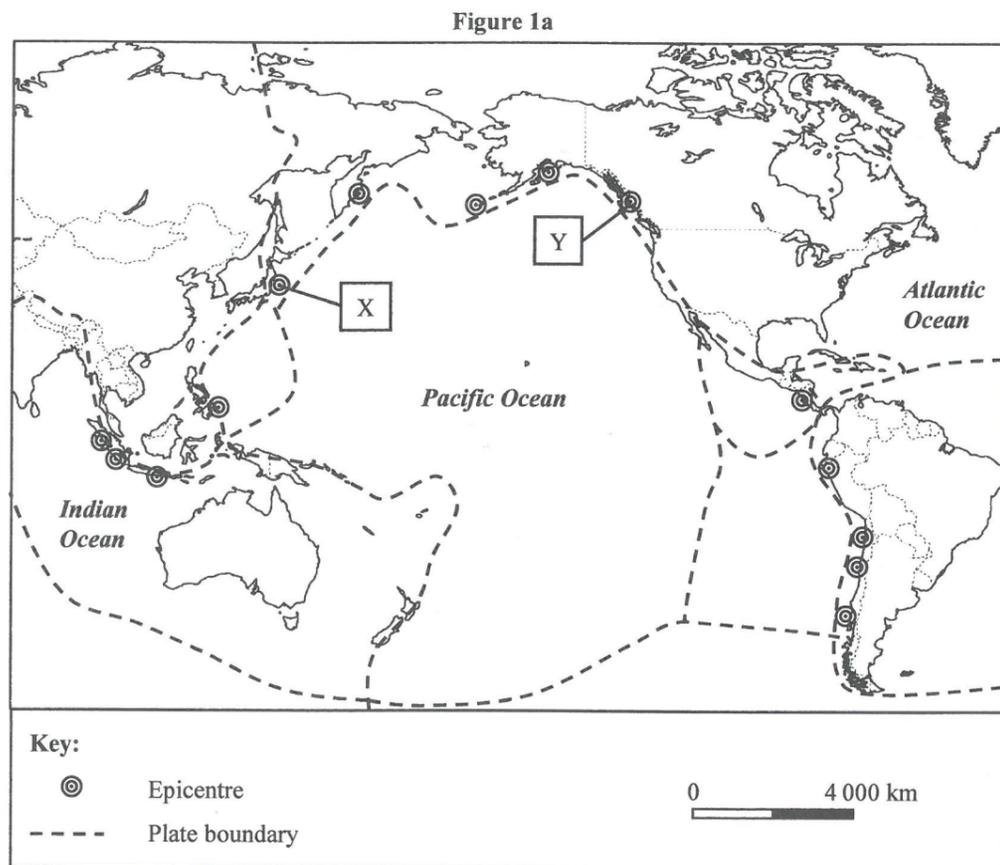
Which of the following greenhouse gases would be produced by the above human activity?

- (1) chlorofluorocarbons
 - (2) carbon dioxide
 - (3) nitrous oxide
-
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

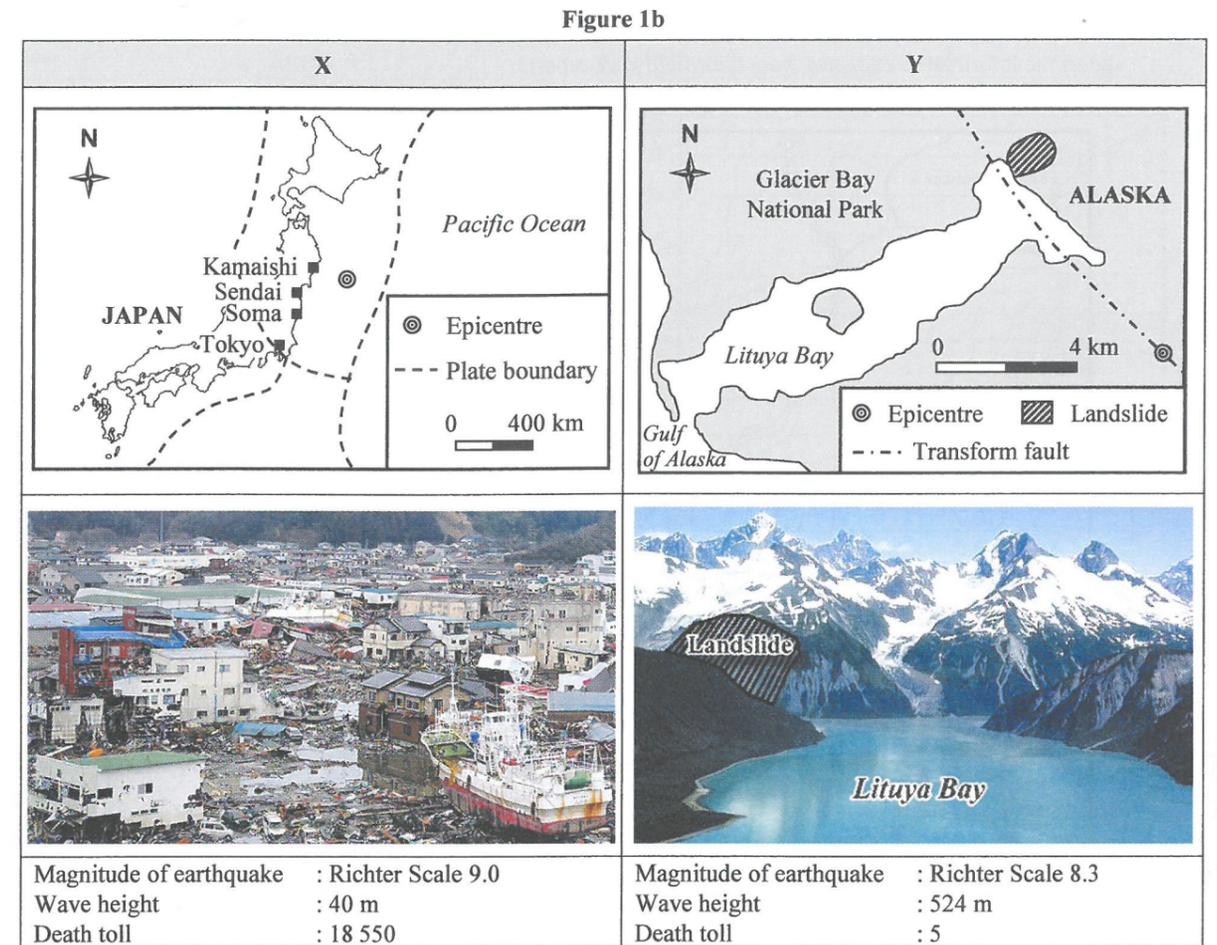
END OF SECTION A

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

1. Figure 1a shows the locations of the epicentres of some major earthquakes and tsunamis since 1900. Figure 1b shows the information of the earthquakes and tsunamis at X and Y in Figure 1a.

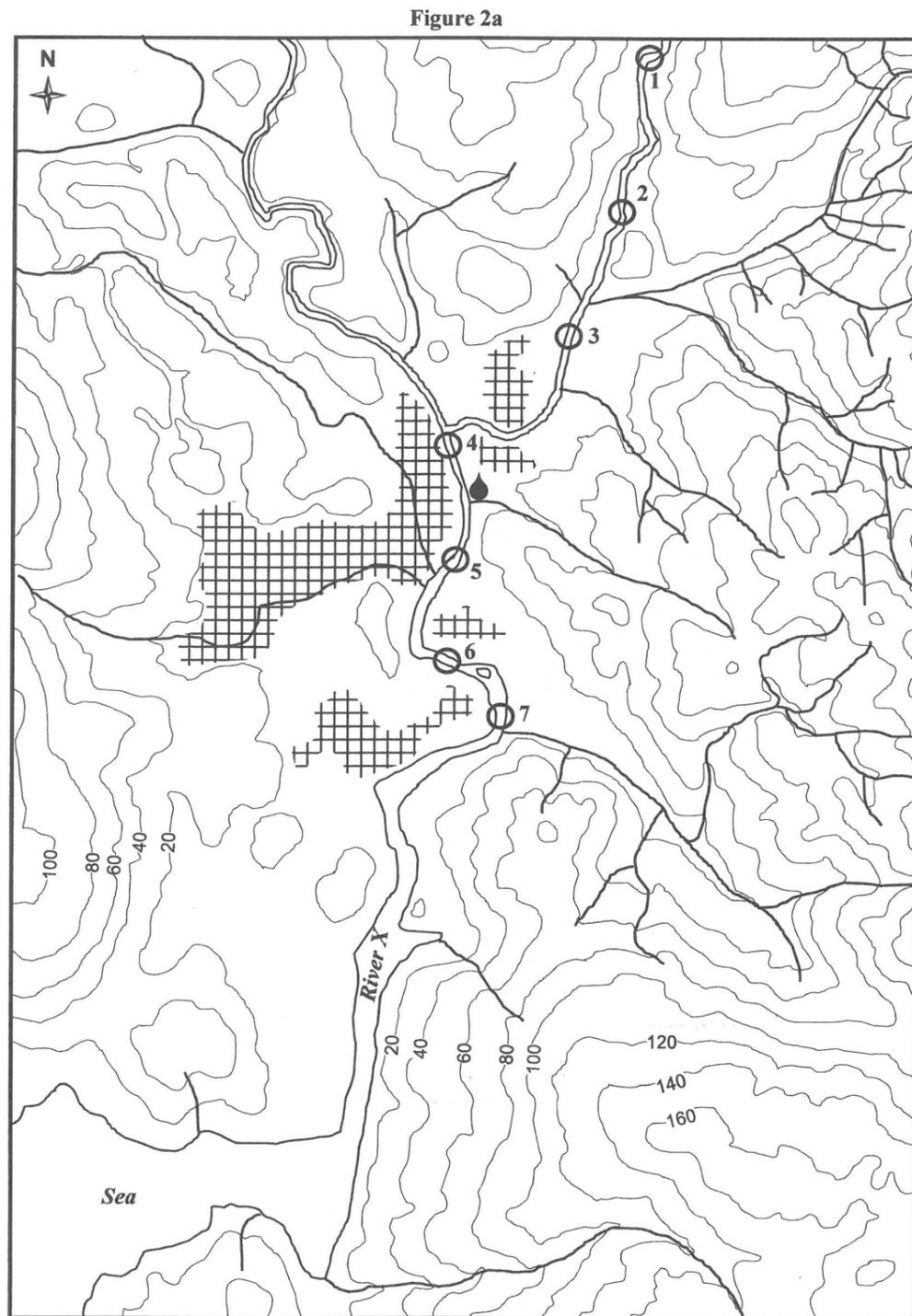


- (a) Refer to Figure 1a. Describe the spatial distribution of the epicentres. (3 marks)



- (b) Refer to Figures 1a and 1b.
- (i) Compare the causes of tsunami at X and Y. (6 marks)
- (ii) Explain the wave height in the tsunami at Y. (2 marks)
- (c) Refer to Figure 1b.
- (i) Account for the difference in the death toll between X and Y. (3 marks)
- (ii) Evaluate the effectiveness of 'land use zoning' as a measure to alleviate the damage caused by tsunami at X. (4 marks)

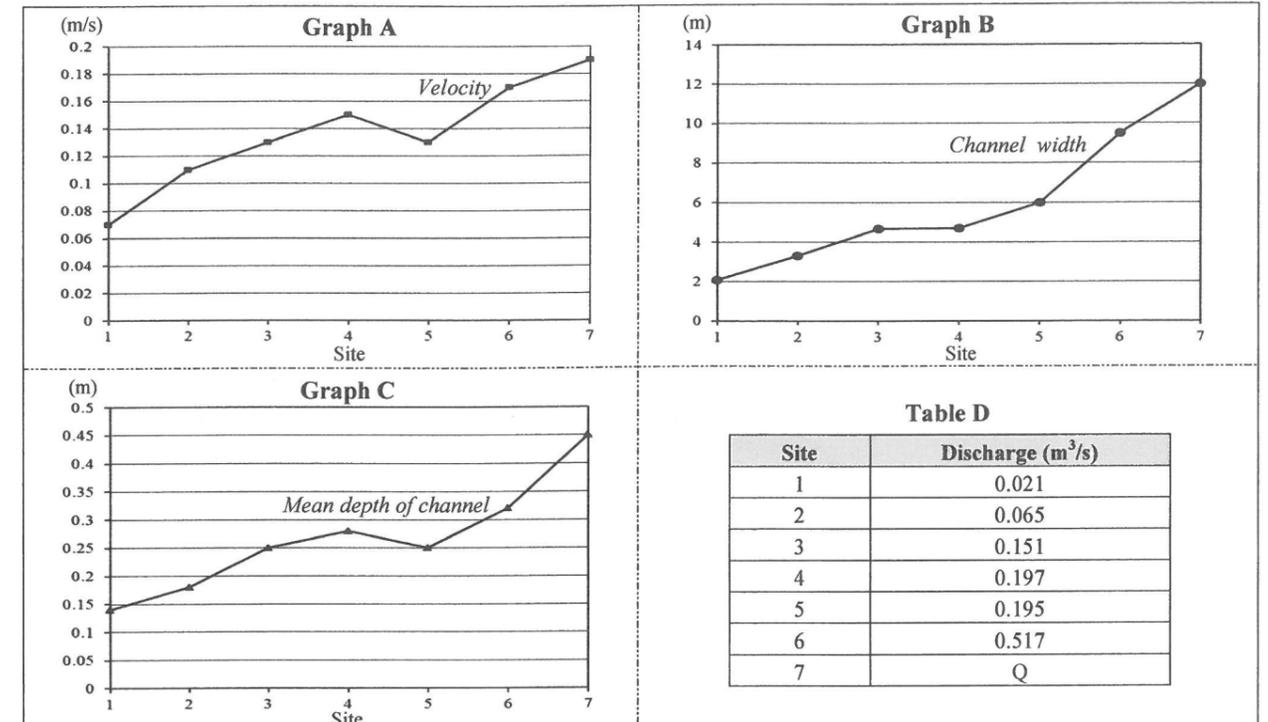
2. A group of students conducted fieldwork along river X and its tributaries as shown in Figure 2a. Figure 2b shows the information extracted from their fieldwork report.



Key:

- | | | |
|-------------------|----------|--------------------------|
| ○ Site of study | River | Contour line (V.I. 20 m) |
| ● Pumping station | Farmland | Scale 1:10 000 |

Figure 2b



- (a) Refer to Figure 2a and Graph A in Figure 2b.

- (i) Describe the changes in velocity from sites 1 to 7. (2 marks)
- (ii) Using map evidence, explain the changes you described in (a) (i). (5 marks)

- (b) Refer to Figures 2a and 2b.

- (i) Refer to the formulae below.

Discharge = Velocity × Cross-sectional area
 Cross-sectional area = Channel width × Mean depth

Calculate the discharge (Q) at site 7 in Table D of Figure 2b. (1 mark)

- (ii) Account for the downstream changes in channel width in terms of discharge and river processes. (6 marks)

- (iii) Explain the favourable physical conditions for the formation of depositional features downstream of site 4. Give map evidence to support your answer. (4 marks)

Go on to the next page

3. Refer to the map extract (1:20 000) of Hong Kong which shows part of Lantau Island. Area X is the proposed reclamation site in the Tung Chung New Town Extension Project, while area Y is another proposed reclamation site. The Government plans to increase the population by about 117 000 in area X. Figure 3a shows the proposed land use planning in area X. Table 3b shows the information of major land uses in area X.

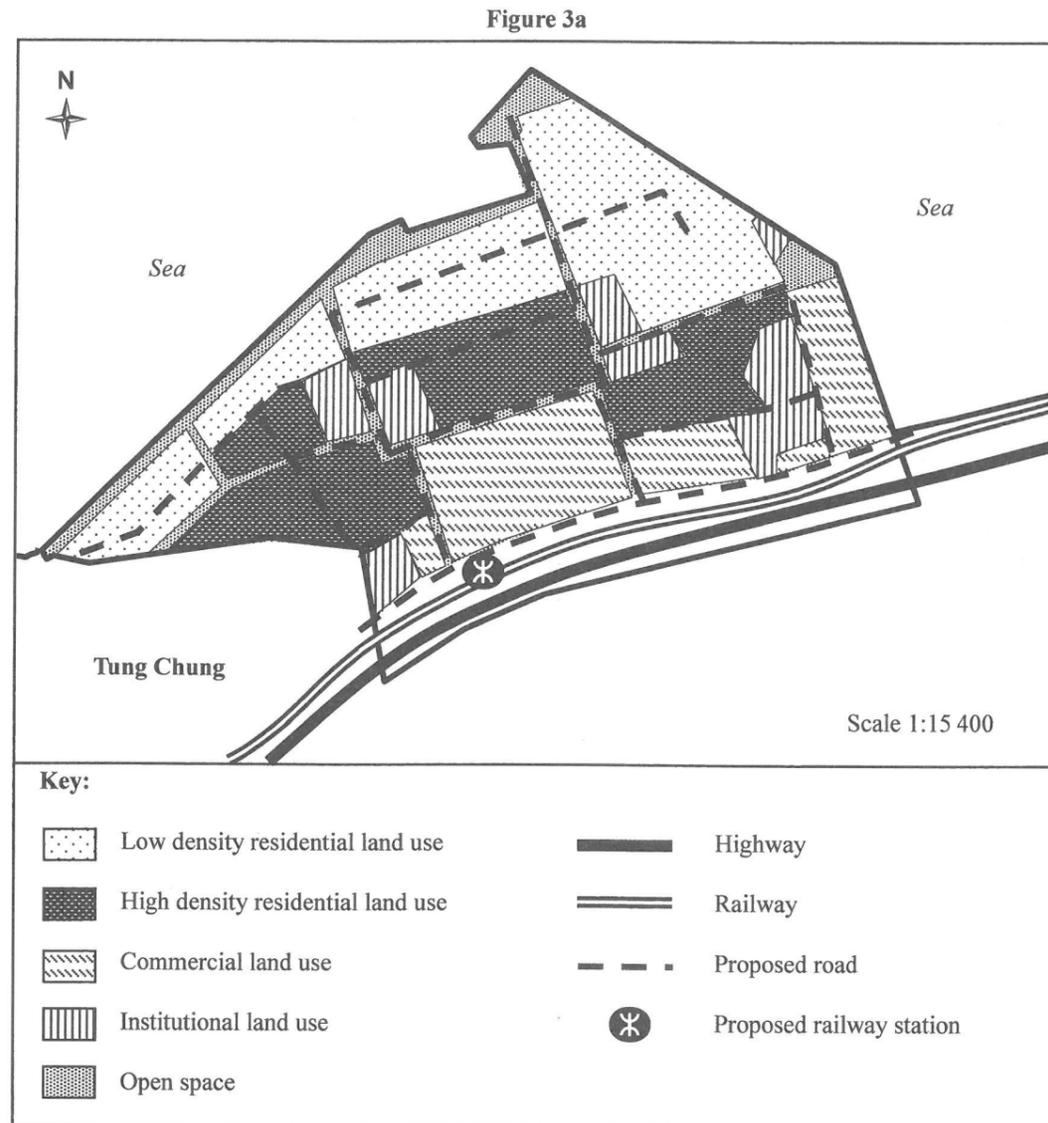
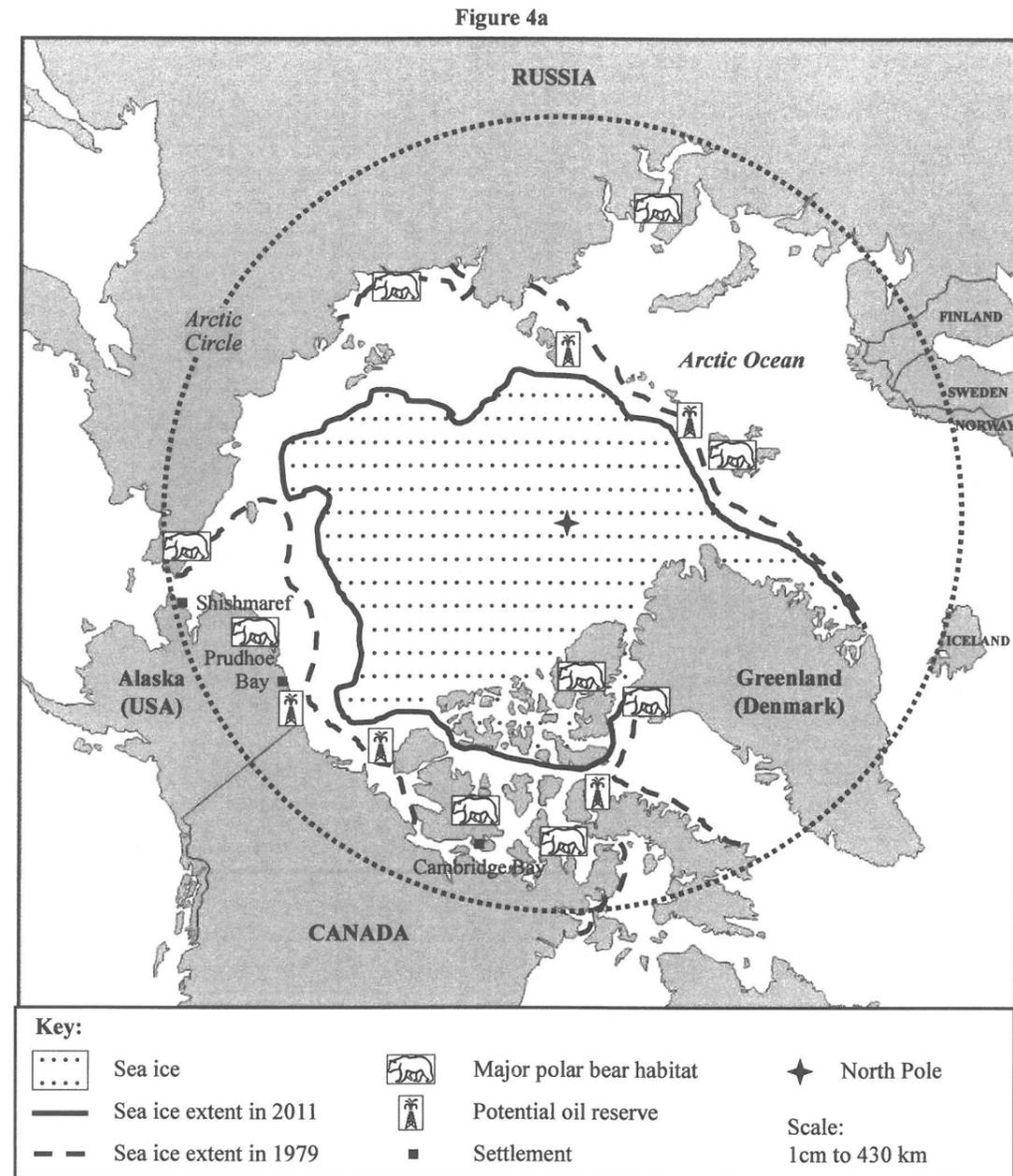


Table 3b

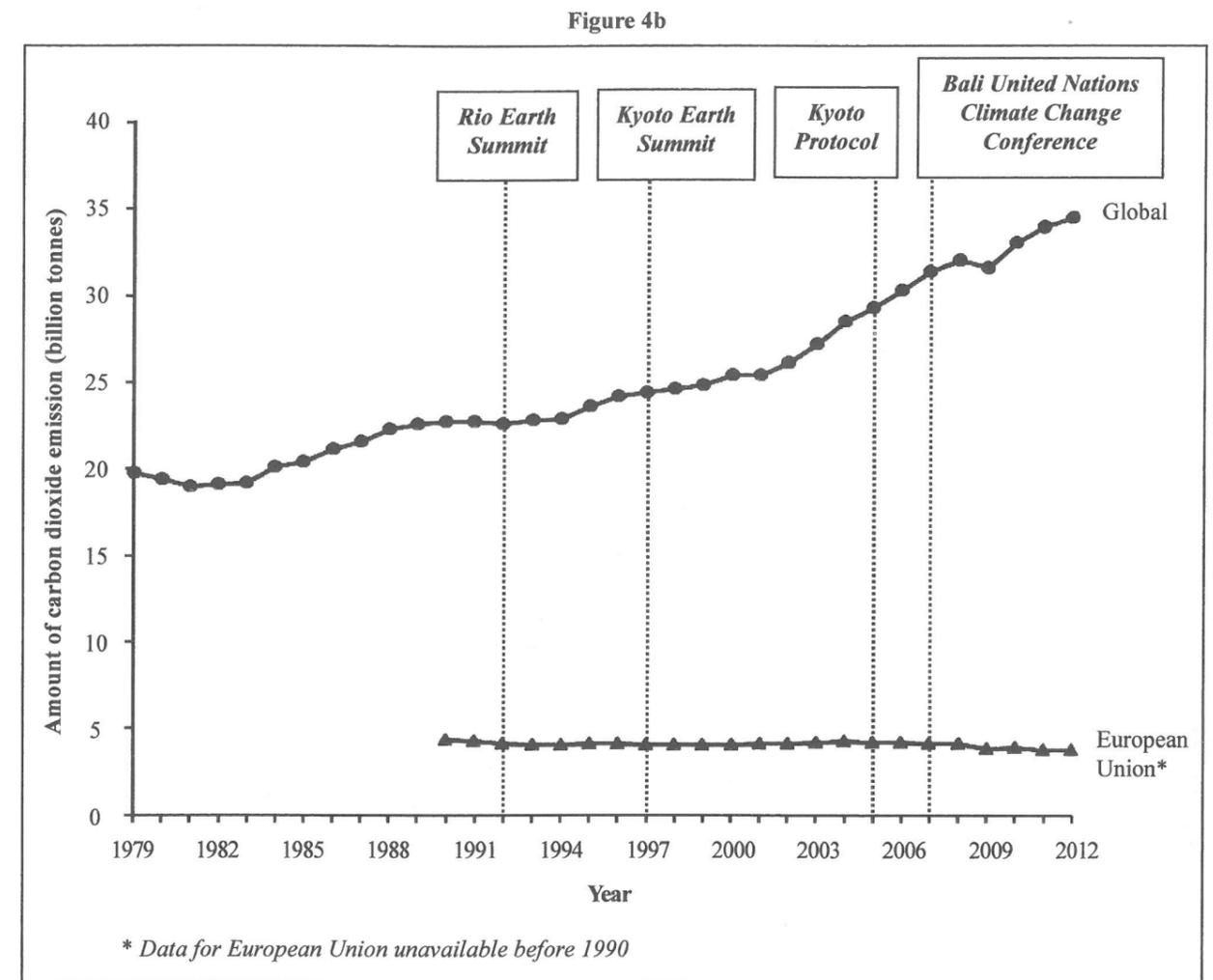
Major land use	Approximate area (ha)	Facilities / Classification
Residential	75	Private housing : 38.0% Subsidised housing : 62.0%
Institutional	14	Tertiary institutes, schools, sports centre, clinic, health centre, fire station and police station
Open space	19	Waterfront promenade and parks
Commercial	7	Regional retailing facilities (e.g. large shopping malls) : 17.4% Local retailing facilities (e.g. street shops) : 18.2% Offices : 58.6% Hotel : 5.8%
Transport	5	Roads and railway

- (a) Refer to Figure 3a and the map extract (1:20 000) of Hong Kong.
- (i) Describe the distribution patterns of low density residential land use and commercial land use in area X respectively. (3 marks)
- (ii) Explain the merits of the land use distribution patterns you described in (a) (i). (4 marks)
- (b) Refer to the map extract (1:20 000) of Hong Kong. Quoting map evidence, explain the locational and site advantages of area X as a more suitable reclamation site than area Y in the Project. (6 marks)
- (c) Refer to Table 3b. Discuss whether the land use planning of area X aligns with the principles of sustainable development. (5 marks)

4. Figure 4a shows some information of the Arctic region and the surrounding areas. Figure 4b shows the amount of carbon dioxide emission from 1979 to 2012 and international efforts to combat climate change.



- (a) Refer to Figure 4a. The sea ice extent of the Arctic Ocean in 1979 is approximately 7 200 000 km² in the figure.
- (i) Calculate the area of sea ice extent in 2011. (2 marks)
- (ii) Find out the percentage change in sea ice extent between 1979 and 2011. (1 mark)



- (b) Refer to Figures 4a and 4b.
- (i) How did the change in the amount of carbon dioxide emission lead to the areal change of sea ice extent? (6 marks)
- (ii) How might the areal change of sea ice extent you found out in (a) (ii) bring about both positive and negative impact to the Arctic region? (5 marks)
- (c) Refer to Figure 4b. Evaluate the effectiveness of international cooperation in controlling global carbon dioxide emission. (4 marks)

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

5. Account for the major factors affecting the spatial distribution of the iron and steel industry in China before 1978. Explain how the 'Reform and Opening-up' policy has changed the spatial distribution of iron and steel industry in China since 1978. (12 marks)

6. How does the physical environment cause high risk of famine in the Sahel region? Evaluate the effectiveness of biotechnology in lowering the risk of famine in the Sahel region. (12 marks)

7. Describe and explain the negative socio-economic consequences of large-scale deforestation in tropical rainforests. Discuss the roles of more developed countries in the deforestation of tropical rainforests. (12 marks)

END OF PAPER

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