

## 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 20 multiple-choice questions. Answer **ALL** questions in this section.
  - Section B – consists of an **OPTIONAL** fieldwork-based question (Question 1) and 4 data / skill-based structured questions (Questions 2 to 5). Attempt any **TWO** questions in this section.
  - Section C – consists of 3 short essay questions (Questions 6 to 8). Attempt any **ONE** question 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.

**Section A: There are 20 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 6.

A group of students went hiking at Tai Po. They started at Shui Wo (grid square 0484) and walked along the footpath heading northwest to reach the trigonometric station at Tai To Yan (grid square 0385). Follow their route to answer Questions 1 to 4.

1. Which of the following are the geographical settings of the cultivated land in grid square 0484?

- (1) located in a river valley
  - (2) mostly found below 100 metres
  - (3) accessible by secondary roads
- A. (1) and (2) only  
B. (1) and (3) only  
C. (2) and (3) only  
D. (1), (2) and (3)

2. The section of the footpath from the secondary road at 042848 to the junction at 033855 \_\_\_\_\_.

- (1) follows a ridge
  - (2) partly follows a spur
  - (3) passes through some woodland
- A. (1) and (2) only  
B. (1) and (3) only  
C. (2) and (3) only  
D. (1), (2) and (3)

3. Which of the following is the average gradient of the section of the footpath mentioned in Question 2?

- A. 1:3.3
- B. 1:2.9
- C. 1:2.5
- D. 1:2.1

4. \_\_\_\_\_ can be seen from the trigonometric station at 034856.

- (1) Yuen Tun Ha (075828)
- (2) Hong Lok Yuen (072868)
- (3) Kwun Yam Shan (034828)

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

5. In grid square 1385, there is/ are \_\_\_\_\_.

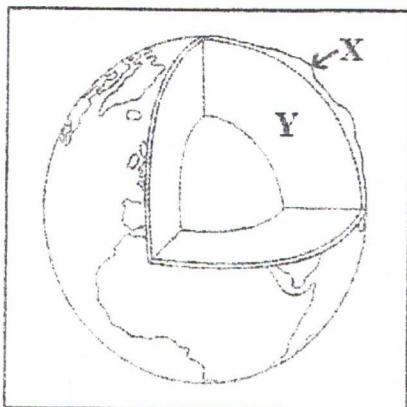
- (1) navigation beacons or lights
- (2) a pier
- (3) a swamp

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

6. \_\_\_\_\_ is 1.9 km away and at a reduced bearing of N 17° E from the trigonometric station at 091835.

- A. Old District Office North (087848)
- B. Lookout Tower (097853)
- C. Island House (096849)
- D. Savanna Garden (099837)

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

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



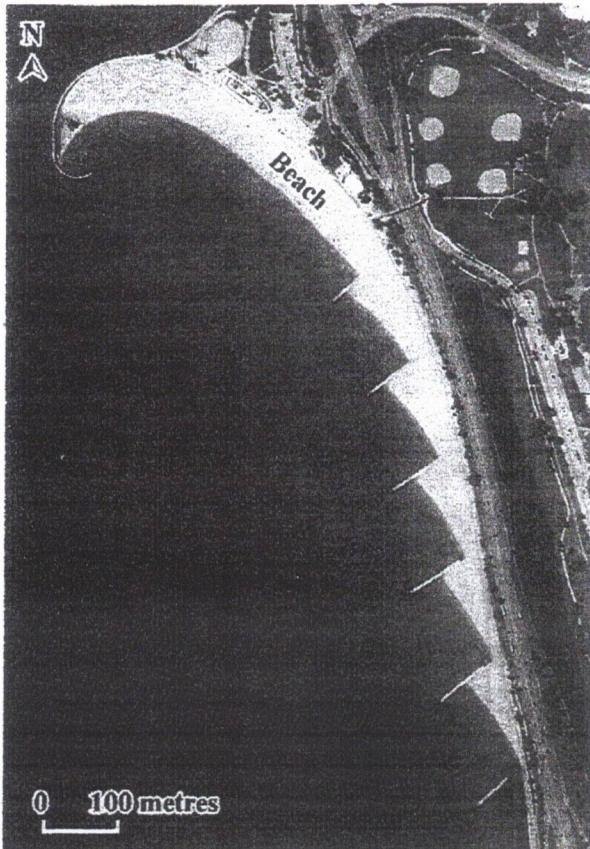
Which of the following statements about the formation of the tectonic feature is/ are correct?

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

9. Which of the following pairs of comparison between the upper and lower courses of rivers in Hong Kong is correct?

|                           | Upper courses | Lower courses |
|---------------------------|---------------|---------------|
| A. Mean channel depth     | shallower     | deeper        |
| B. Mean channel width     | wider         | narrower      |
| C. Mean channel gradient  | gentler       | steeper       |
| D. Mean channel discharge | larger        | smaller       |

10. Refer to the aerial photograph below.



The direction of the prevailing wind in this area is \_\_\_\_\_.

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

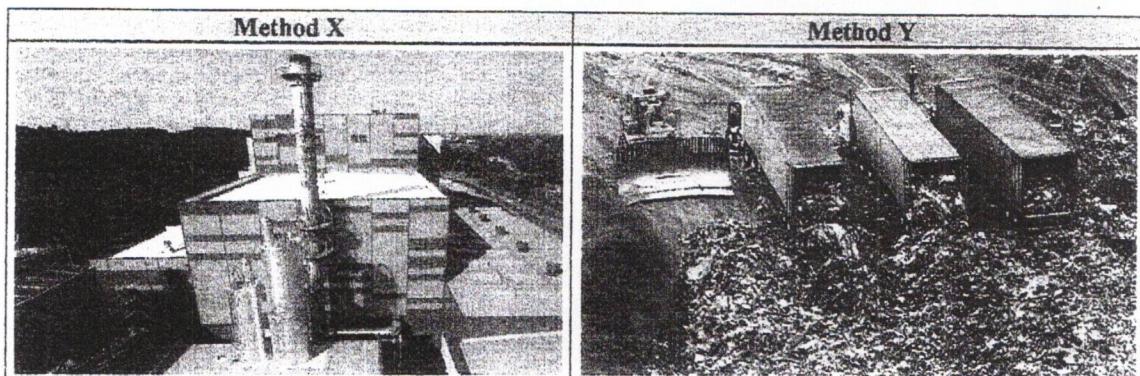
11. Which of the following is/ are the locational factor(s) of footloose industries?

- (1) raw material
  - (2) transport
  - (3) market
- A. (1) only  
B. (2) only  
C. (1) and (3) only  
D. (2) and (3) only

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

13. Refer to the photographs below which show two methods of treating municipal solid waste.

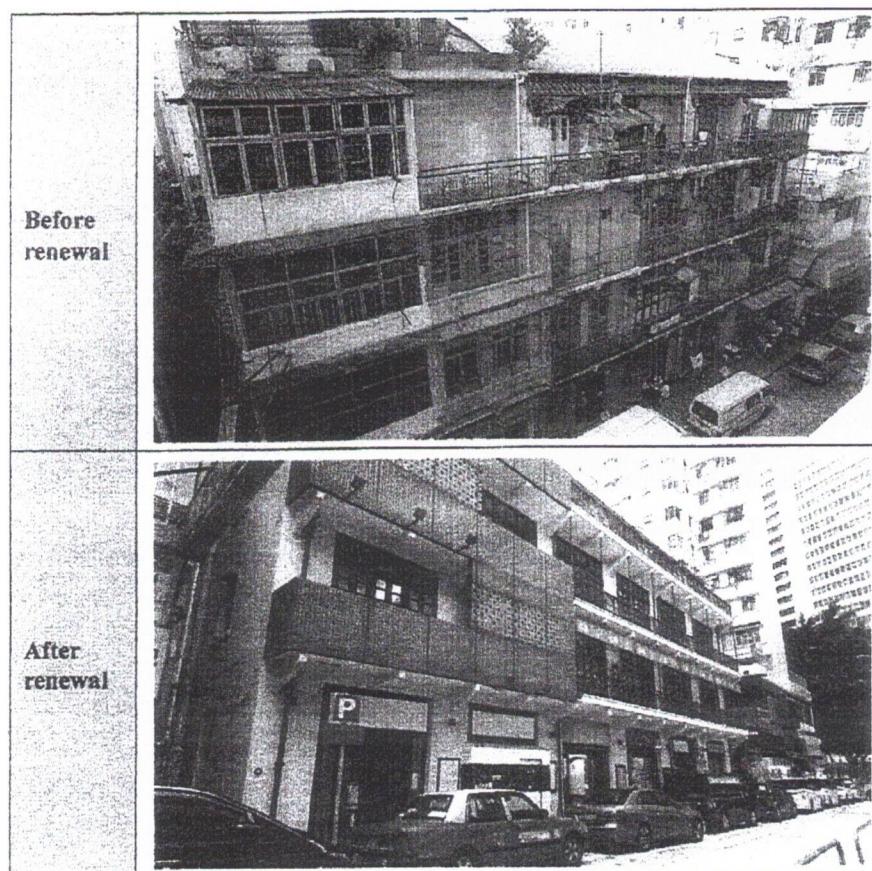


Which of the following pairs of comparison between methods X and Y is/ are correct?

|  | Method X | Method Y |
|--|----------|----------|
| (1) Space requirement                                  | larger   | smaller  |
| (2) The amount of energy used during operation         | more     | less     |
| (3) The possibility of contaminating underground water | higher   | lower    |

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

14. Refer to the photographs below which show some buildings before and after urban renewal.



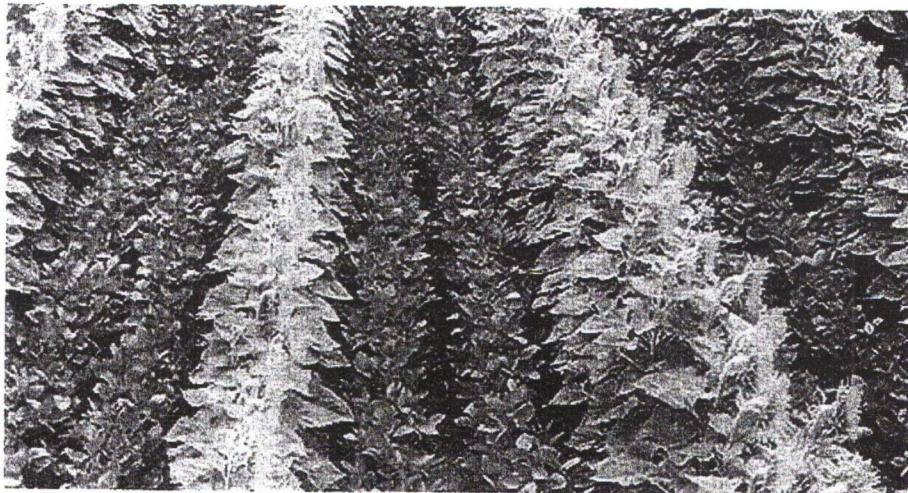
Which of the following urban renewal strategies is/ are shown in the photographs?

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

15. Which of the following cause famines in less developed countries?

- (1) rapid population growth
  - (2) inadequate capability to tackle hazards
  - (3) production exceeding carrying capacity of land
- 
- A. (1) and (2) only
  - B. (1) and (3) only
  - C. (2) and (3) only
  - D. (1), (2) and (3)

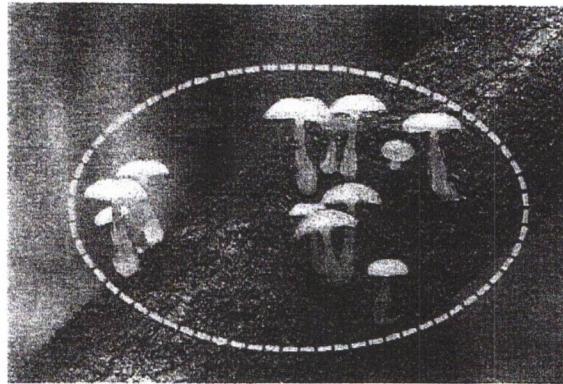
16. Refer to the photograph below which shows a planting method.



This planting method can achieve sustainable farming because it can \_\_\_\_\_.

- (1) save labour input
  - (2) maintain soil fertility
  - (3) reduce the use of insecticides
- A. (1) and (2) only  
B. (1) and (3) only  
C. (2) and (3) only  
D. (1), (2) and (3)

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

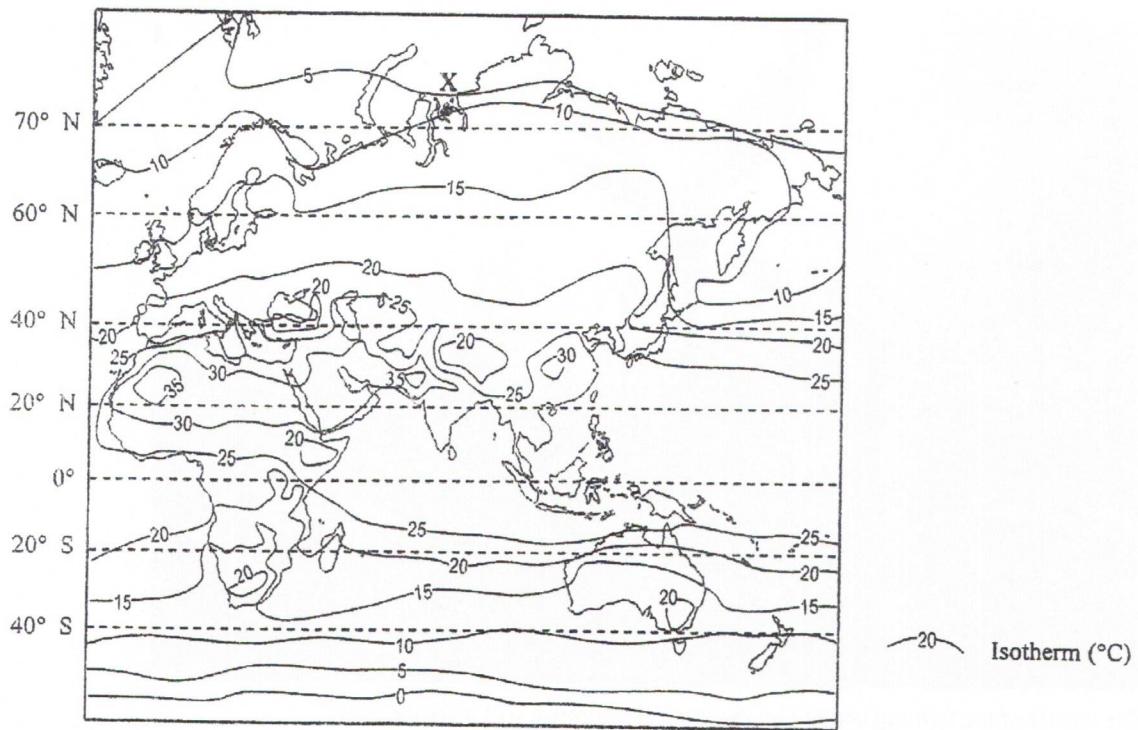
18. Refer to the photograph below which shows a farming activity in the tropical rainforest.



The impact of the farming activity on the tropical rainforest will increase when \_\_\_\_\_

- (1) the farm size increases
  - (2) the intensity of farming increases
  - (3) the fallowing period shortens
- 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 19 and 20.



19. Which of the following statements about the above figure are correct?

- (1) The figure shows the temperature pattern in July.
- (2) Temperature difference in the northern hemisphere is greater than that in the southern hemisphere.
- (3) Temperature at inland region is generally higher than that at coastal region along the same latitude in the northern hemisphere.
  - A. (1) and (2) only
  - B. (1) and (3) only
  - C. (2) and (3) only
  - D. (1), (2) and (3)

20. Which of the following are the influences of global warming on area X in the figure?

- (1) Thawing of permafrost facilitates extraction of underground resources.
- (2) Melting of sea ice in the Arctic Ocean shortens shipping routes.
- (3) A decrease in rainfall causes a shortage of fresh water supply.
  - A. (1) and (2) only
  - B. (1) and (3) only
  - C. (2) and (3) only
  - D. (1), (2) and (3)

END OF SECTION A

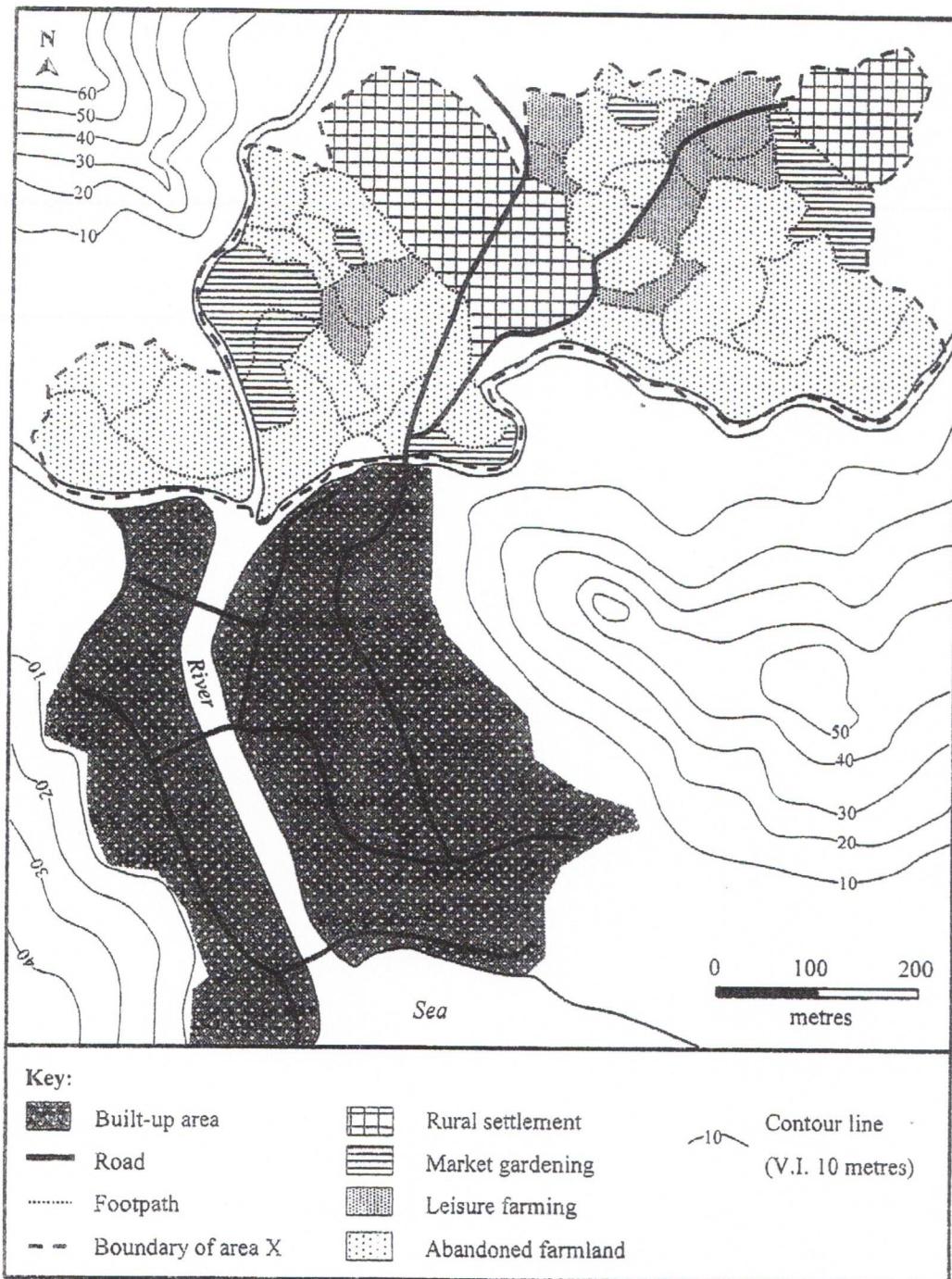
**This is a blank page.**

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

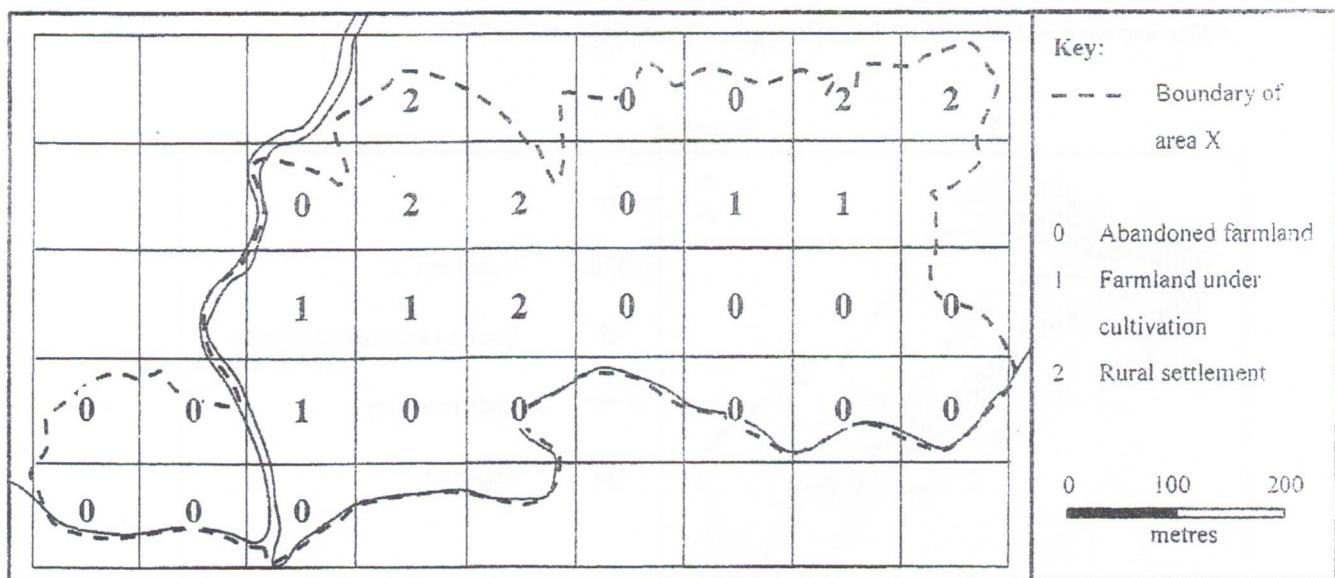
1. This fieldwork-based question is OPTIONAL.

A group of students conducted a geographical investigation to study the impact of urban encroachment on agricultural land uses over the past decades in area X. Figure 1a is a sketch map showing area X and its adjacent areas. Figure 1b is a land use map of area X produced by the students based on the collected data.

Figure 1a



**Figure 1b**



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

(i) Explain why area X is an appropriate field study site for this geographical investigation.

(4 marks)

(ii) Describe the procedure from data collection to the production of Figure 1b. (4 marks)

(b) *The students decided to conduct interviews to investigate the impact of urban encroachment on agricultural land uses in area X.*

Describe how the interviews could be conducted in order to collect the necessary information.

(4 marks)

(c) *The students found that the data collected was inadequate to test the hypothesis 'The size of abandoned farmland increases with urban encroachment'.*

How can the collection of secondary data help test this hypothesis? (6 marks)

2. Figure 2a shows the locations of town P, some major cities and tectonic features in Italy. Figure 2b shows landform X and some information of town P. Figure 2c shows a photograph of town P after an earthquake in 2016 and some related information. Photograph 2d shows town P in 2018.

Figure 2a

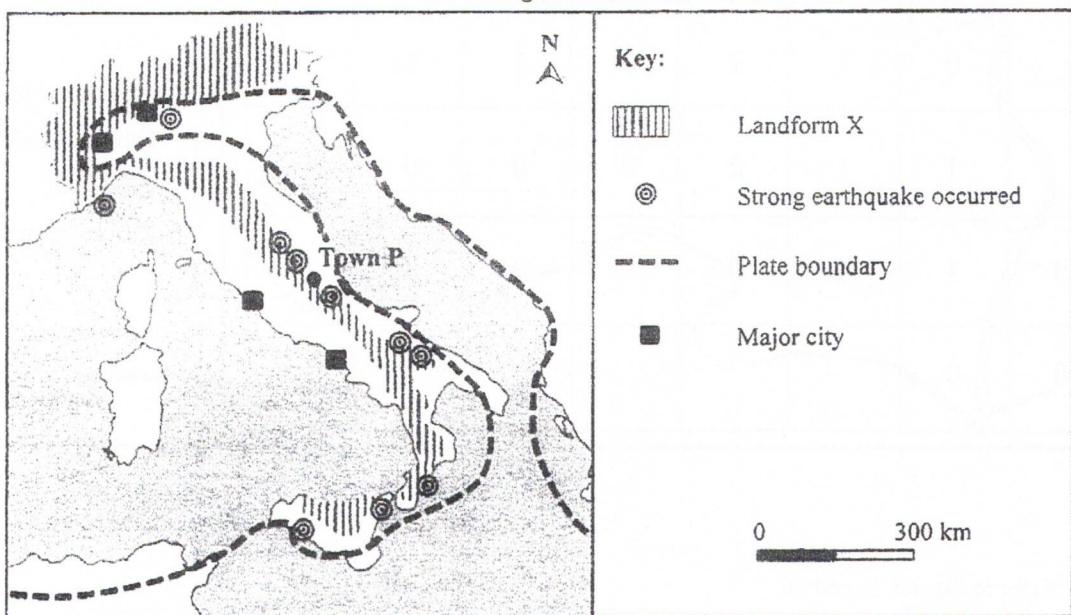
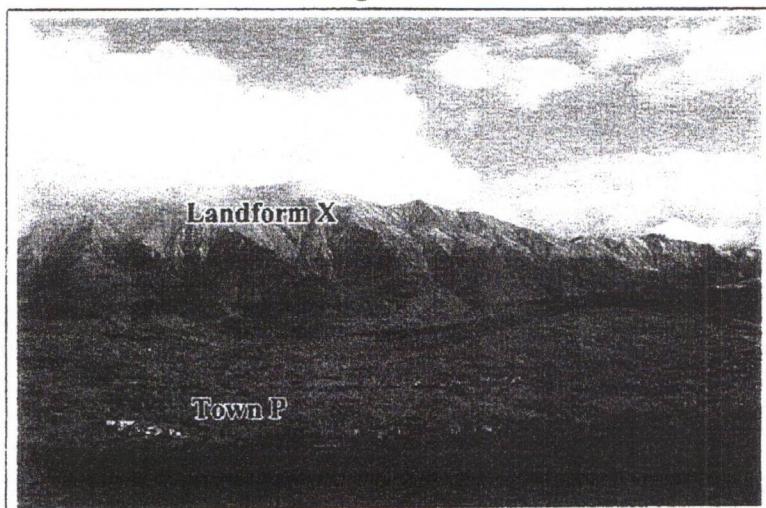


Figure 2b

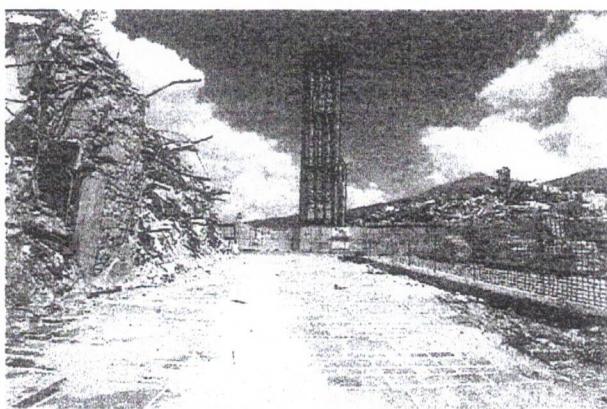


|                             |                  |       |
|-----------------------------|------------------|-------|
| History                     | Over 2 000 years |       |
| Buildings built before 1970 | Around 80 %      |       |
| Altitude                    | 955 m            |       |
| Population                  | 2015             | 2 657 |
|                             | 2018             | 2 484 |

**Figure 2c**



**Photograph 2d**



Richter Scale: 6.2

Depth of focus: 4.2 km

Death toll: 295

Number of homeless: > 2 000

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

(i) Identify landform X. (1 mark)

(ii) With reference to the plate tectonics theory, explain the formation of landform X. (5 marks)

(iii) Explain why earthquakes are common at regions of landform X. (4 marks)

(b) Refer to Figures 2b and 2c. Explain why town P was seriously damaged in the earthquake.

(4 marks)

(c) Photograph 2d shows that the reconstruction of town P has not yet been completed two years after the earthquake.

Refer to Figures 2a, 2b and 2c. Discuss whether the physical or human settings may have a greater constraint on the reconstruction of town P. (4 marks)

3. Refer to the map extract (1:20 000) of Hong Kong which shows part of Tai Po District. Figure 3a shows the location of Tai Po New Town. Figure 3b shows the street plan of Tai Po Market (grid squares 0884 and 0885).

Figure 3a

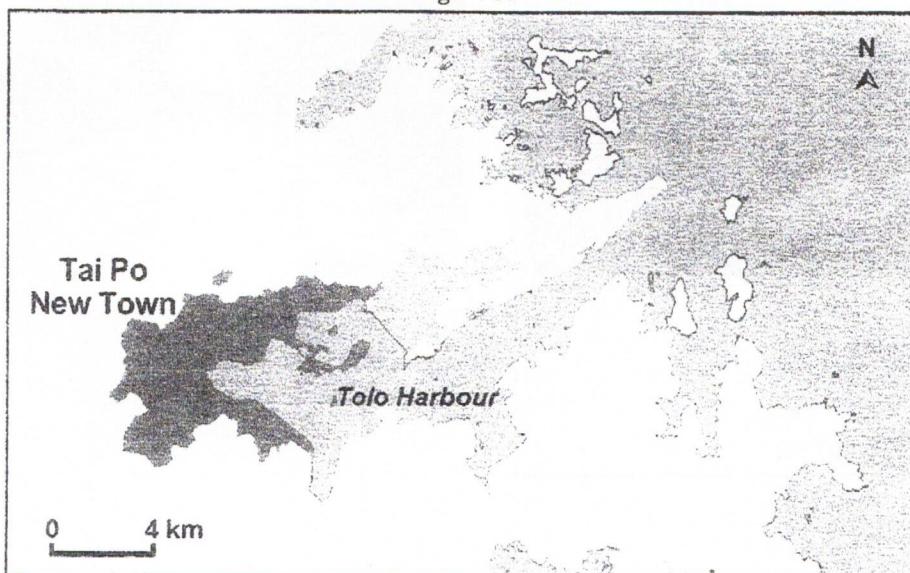
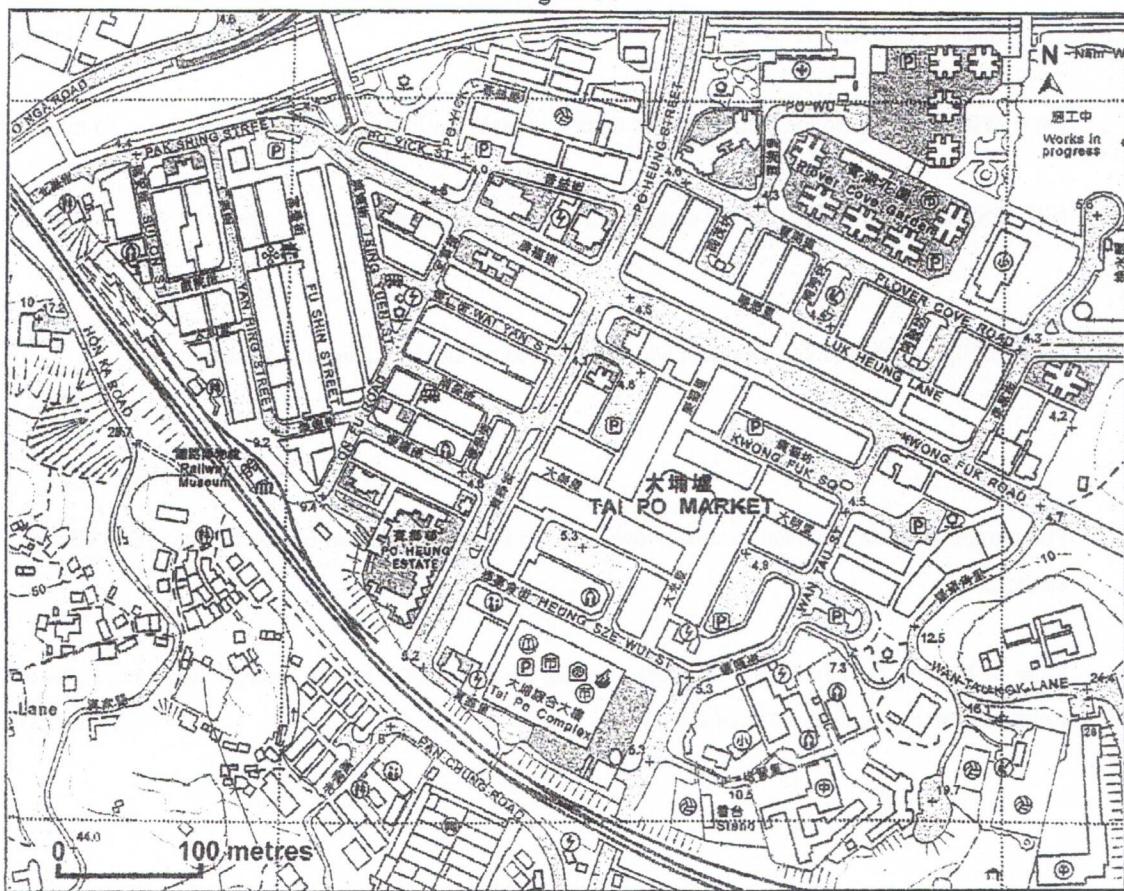


Figure 3b



(a) Refer to the street plan of Tai Po Market (Figure 3b) and the map extract (1:20 000) of Hong Kong.

Account for the deficiencies in the urban planning of Tai Po Market.

(4 marks)

(b) Refer to Figure 3a and the map extract (1:20 000) of Hong Kong.

(i) What are the characteristics of the urban planning of Tai Po New Town? (5 marks)

(ii) How can the urban planning of Tai Po New Town achieve sustainable development?

(5 marks)

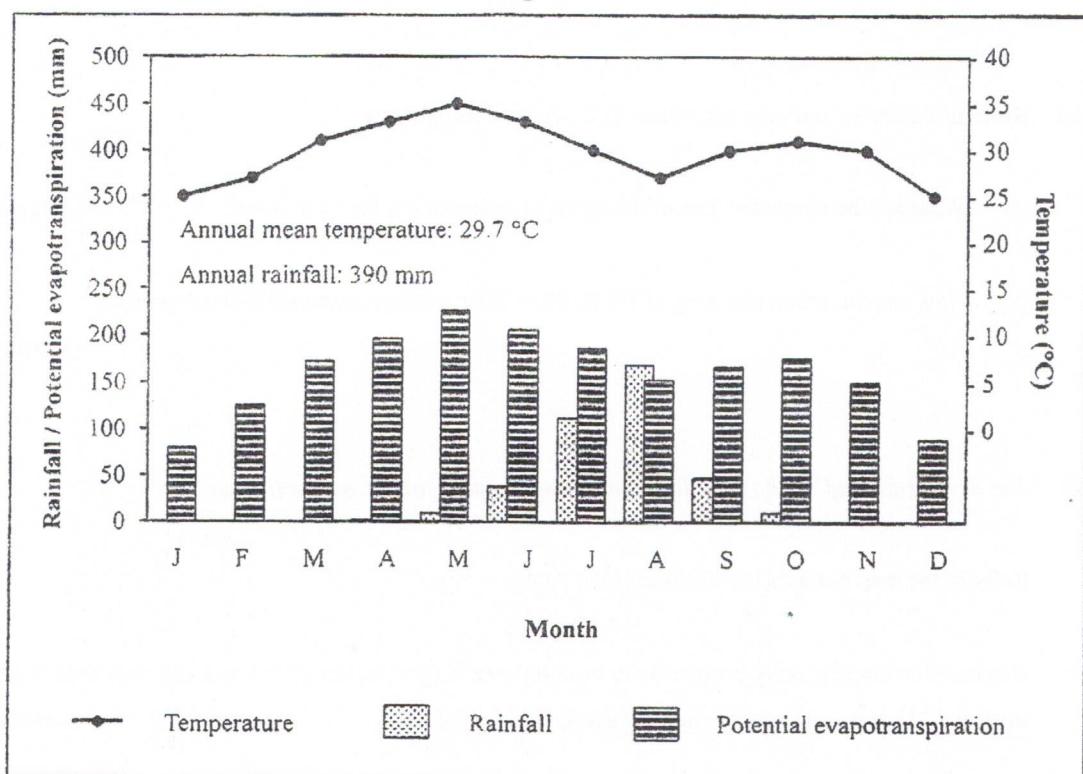
(c) *The development of Tai Po New Town may require more land for residential use.*

Refer to the map extract (1:20 000) of Hong Kong.

Discuss whether it is more preferable to develop area X (grid squares 0585 and 0685) or area Y (grid squares 1282 and 1283) on the map extract for residential use. (4 marks)

4. Figure 4a shows the climatic conditions of area X. Photograph 4b shows the traditional agricultural activity in area X. Figure 4c shows the farming method of an agricultural activity.

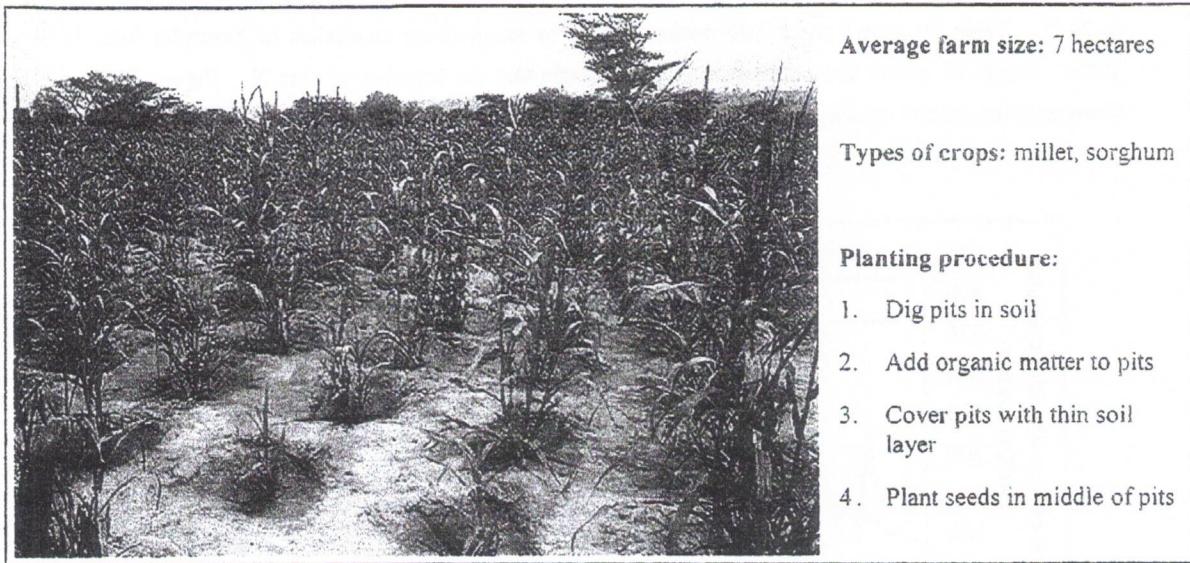
Figure 4a



Photograph 4b



**Figure 4c**



(a) Refer to Figure 4a and Photograph 4b.

(i) Describe and explain how the climate of area X limits the local agricultural development.

(6 marks)

(ii) Account for the adaptation of the traditional agricultural activity in area X to the local climatic conditions.

(4 marks)

(b) *Some farmers in area X have adopted the farming method shown in Figure 4c in recent years.*

Refer to Figures 4a and 4c.

Explain how the farming method shown in Figure 4c tackles the climatic constraints in area X.

(4 marks)

(c) *Food supply in area X is unstable.*

Refer to Figure 4a, Photograph 4b and Figure 4c.

Discuss whether the traditional agricultural activity in area X or the agricultural activity shown in Figure 4c may provide a more stable local food supply.

(4 marks)

5. Figure 5a shows the total carbon dioxide emissions and mean temperature anomalies in Australia from 1961 to 2018. Table 5b shows some information related to temperature anomalies in Australia from 1976 to 2016. Figure 5c shows some information of Australia and the location of area X. Figure 5d shows the changes to the marine ecosystem in area X between 1976 and 2016.

Figure 5a

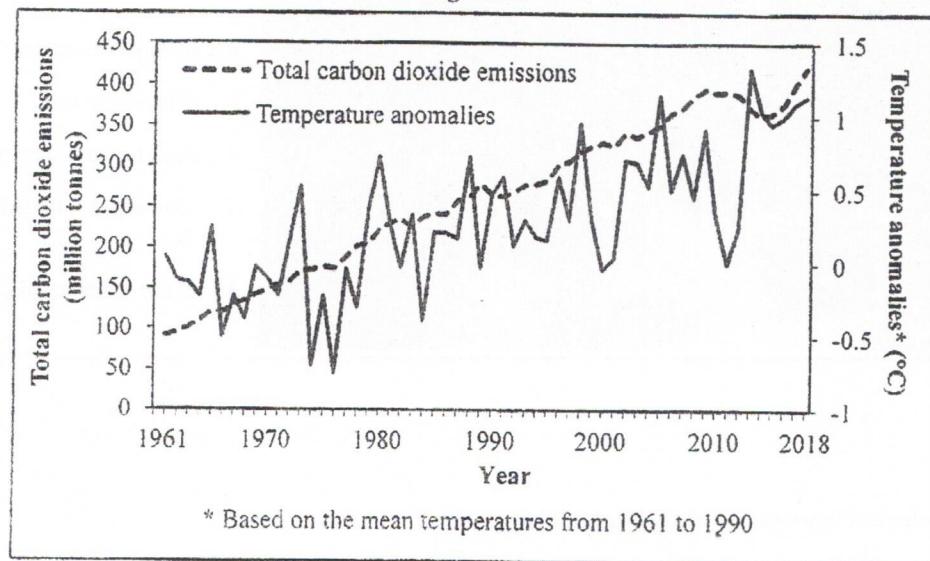


Table 5b

|                                      | 1976         | 1996     | 2016     |
|--------------------------------------|--------------|----------|----------|
| Seawater temperature anomalies* (°C) | - 0.07       | + 0.26   | + 0.78   |
| GDP per capita (AUD)                 | 36 511.9     | 51 479.2 | 71 722.7 |
| Energy consumption (MJ)              | Coal         | 1 047.7  | 1 852.6  |
|                                      | Oil          | 1 410.6  | 1 660.6  |
|                                      | Natural gas  | 256.2    | 818.4    |
|                                      | Solar energy | 0.3      | 2.7      |

\* Based on the mean temperatures from 1961 to 1990

(a) Refer to Figure 5a and Table 5b.

(i) Describe and explain the trend of total carbon dioxide emissions in Australia from 1961 to 2018.

(4 marks)

(ii) Account for the relationship between total carbon dioxide emissions and temperature anomalies.

(4 marks)

Figure 5c

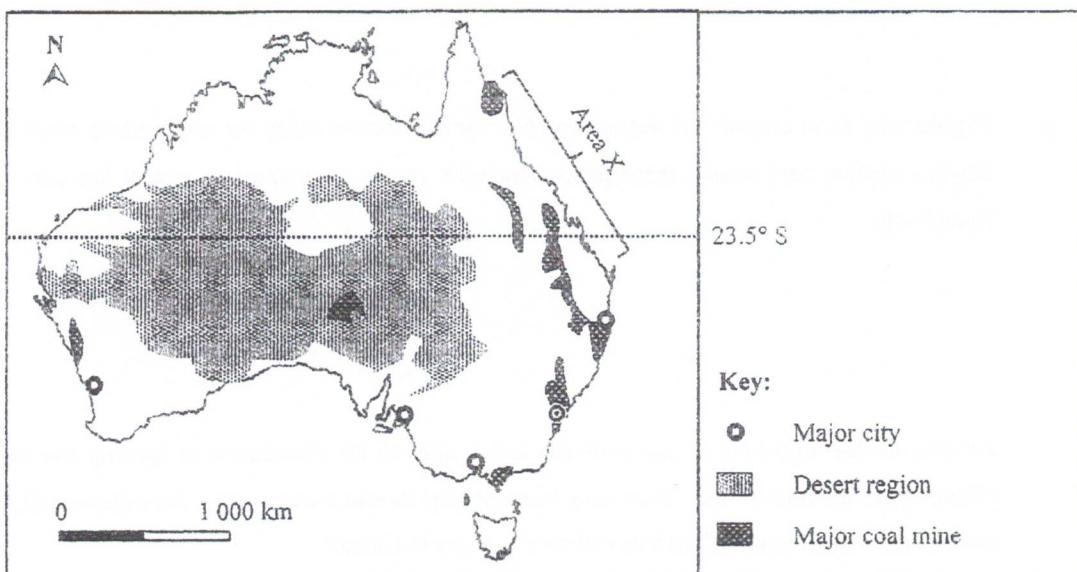
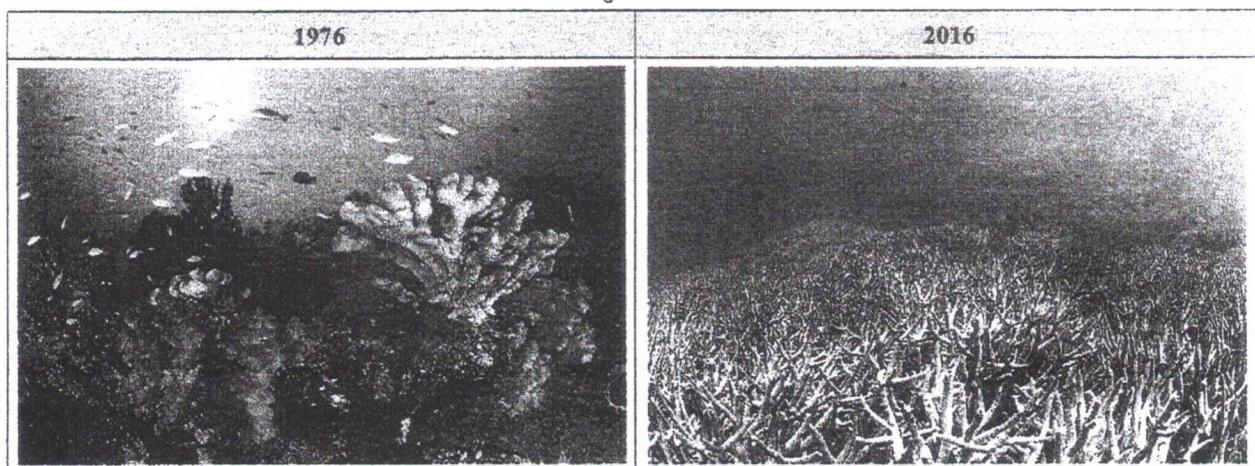


Figure 5d



- (b) Refer to Figure 5a, Table 5b and Figure 5d. What may be the adverse ecological and economic impact of temperature anomalies on area X in Figure 5c? (3 marks)
- (c) Refer to Table 5b and Figure 5c.
- (i) Account for the favourable factors for Australia to develop solar energy. (3 marks)
- (ii) Discuss whether Australia may develop solar energy to alleviate the adverse impact brought about by temperature anomalies. (4 marks)

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

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.

(12 marks)

7. 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?

(12 marks)

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

(12 marks)

**END OF PAPER**

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