HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION 2019

GEOGRAPHY PAPER 1

8:30 am – 11:15 am (2¾ hours)
This paper must be answered in English

GENERAL INSTRUCTIONS

1. This paper consists of **FOUR** sections:

    Section A – consists of 20 multiple-choice questions. Answer **ALL** questions in this section.

    Section B – consists of a **COMPULSORY** fieldwork-based question (Question 1).

    Section C – consists of 4 data / skill-based structured questions (Questions 2 to 5). Attempt any **TWO** questions in this section.

    Section D – 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, C and D 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, C and D 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 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 (1:5 000) provided to answer Questions 1 to 6.

1.   The length of the section of the Shatin to Central Link (under construction) between P (147838) and Q (152854) is approximately
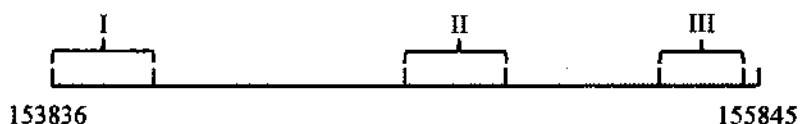
        A.   830 m.
        B.   885 m.
        C.   3 320 m.
        D.   3 540 m.

2.   Which of the following are the major land uses in the area north of Argyle Street and south of Prince Edward Road West?

    (1)   industrial
    (2)   institutional
    (3)   residential

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

3.   Refer to the transect from 153836 to 155845 below.

153836   155845

Which of the following is the correct labelling of the above transect?

	I	II	III
A.	Industrial land use	Institutional land use	Residential land use
B.	Recreational land use	Institutional land use	Industrial land use
C.	Industrial land use	Recreational land use	Residential land use
D.	Residential land use	Recreational land use	Institutional land use

4. Which of the following is/ are the locational advantage(s) of industrial land use in grid square 1583?

    (1) gas production plant nearby
    (2) proximity to recreational facilities
    (3) convenient transport

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

5. Which of the following are reasons for low building density in grid square 1382?

    (1) plenty of steep slopes
    (2) land occupied by public facilities
    (3) presence of high class residential buildings
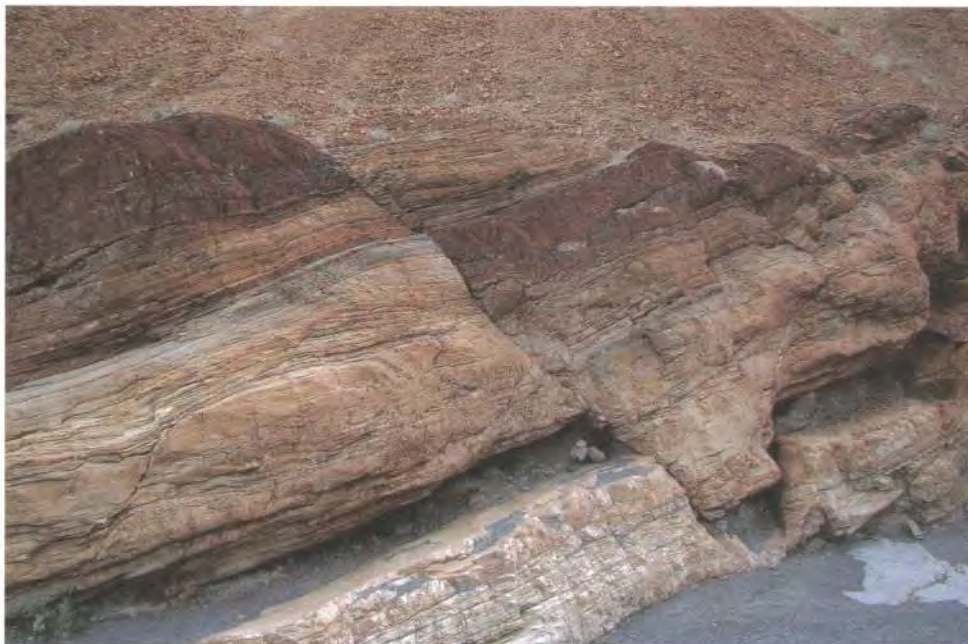
    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

6. Which of the following statements is/ are correct with reference to the pavilion at 139834?

    (1) A bus terminus is to its southwest.
    (2) The whole circle bearing from it to the pavilion at Ko Shan Road Park (grid square 1482) is 150°.
    (3) The reduced bearing from it to the church in grid square 1383 is S 26° E.

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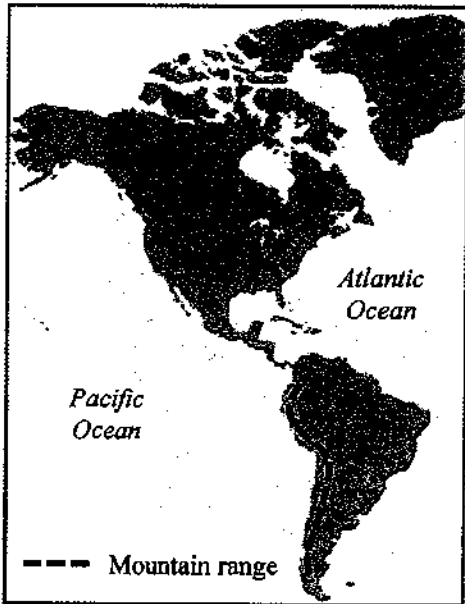   C. (1) and (2) only
    D. (2) and (3) only

7. Refer to the photograph below.

Which of the following statements of the feature shown in the photograph is/ are correct?

(1) It is formed by compressional force.
(2) There is an occurrence of reverse fault.
(3) There is vertical displacement of rock layers.

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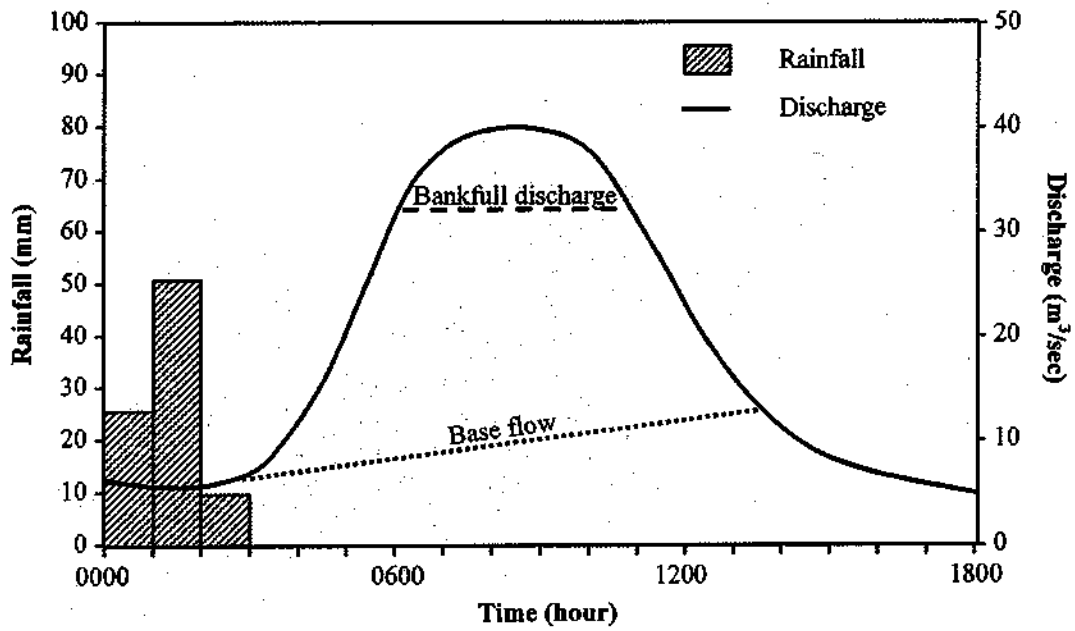   D. (2) and (3) only

8.   Refer to the figure below.

Which of the following statements of the mountain range in the figure is/ are correct?

(1)   It is formed by tensional force.
(2)   It runs parallel with adjacent ocean trench.
(3)   There is the presence of volcanic activity.

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

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

Which of the following statements of the above hydrograph is/ are correct?

(1) The time lag is approximately 10 hours.
(2) Flooding continues approximately for 5 hours.
(3) The rising limb is gentler than the falling limb.

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

10. Refer to the photograph below.

Which of the following coastal landforms is/ are shown in the photograph?

(1) sea arch
(2) stack
(3) tombolo

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

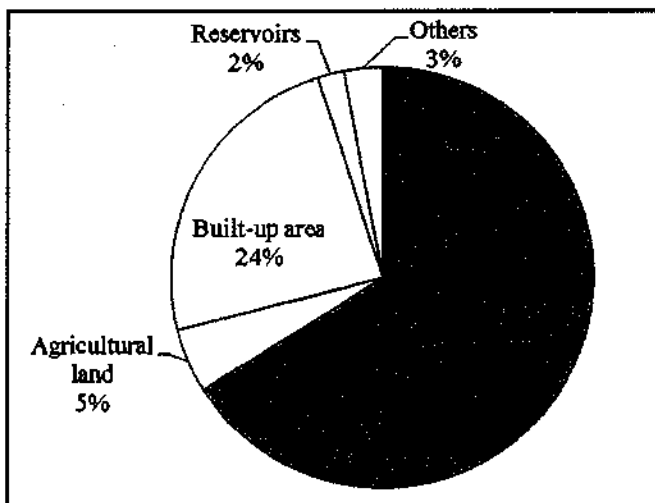11. Which of the following are the causes of industrial inertia?

(1) high relocation cost
(2) presence of good infrastructure
(3) presence of agglomeration economies

    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 are the locational advantages of iron and steel plants at the coastal regions of China?

    (1)   abundant coal reserves nearby
    (2)   close to well-developed ports
    (3)   proximity to water for cooling

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

13. Refer to the figure below which shows the proportion in area of different types of land in Hong Kong in 2017.

Which of the following are the uses of the types of land shaded in the figure?

    (1)   conserving natural habitats
    (2)   providing recreational resources
    (3)   limiting urban encroachment

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

14. Which of the following are the purposes of developing new towns in Hong Kong?

   (1) to decentralise population
   (2) to provide a better living environment
   (3) to preserve rural culture

       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 pairs of comparison between intensive farming and extensive farming are correct?

		Intensive farming	Extensive farming
(1)	Physical input per hectare of land	higher	lower
(2)	Human input per hectare of land	higher	lower
(3)	Output per hectare of land	higher	lower

       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 the major ways to alleviate the shortage of irrigation water in Southern California?

   (1) storage of water in reservoirs
   (2) transfer of water by irrigation canals
   (3) desalinisation of seawater

       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 statements of tropical rainforests is/ are correct?

(1) Tropical rainforests are located mainly at coastal areas.
(2) Tropical rainforests are distributed mainly between 15° N and 15° S.
(3) The area of tropical rainforests in the northern hemisphere is greater than that in the southern hemisphere.

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

18. Which of the following are the impacts brought about by large scale deforestation in the tropical rainforest on microclimate?

(1) a decrease in the diurnal range of temperature
(2) a fall in the relative humidity
(3) an increase in wind speed

    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 impact(s) of global warming on high-latitude regions?

(1) acceleration of glaciers melting
(2) increase in land surface albedo
(3) shortening of frost-free period

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

20. Refer to the figure below.

23.5° N

0°

23.5° S
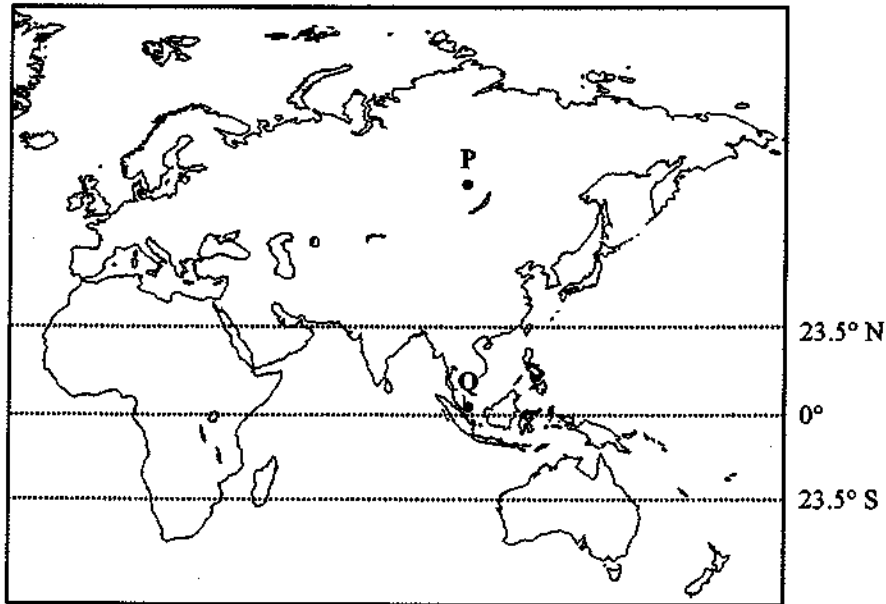
Which of the following pairs of comparison between areas P and Q are correct?

		Area P	Area Q
(1)	Diurnal range of temperature	larger	smaller
(2)	Annual range of temperature	larger	smaller
(3)	Mean annual temperature	lower	higher

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

END OF SECTION A

1.   A group of Geography students carried out a coastal field study on longshore drift.   Figure 1a shows the
      tools and instruments required for the field study.   Figure 1b is a sketch map of the field study sites and the
      surrounding areas.   Table 1c shows the data collected in the field study.
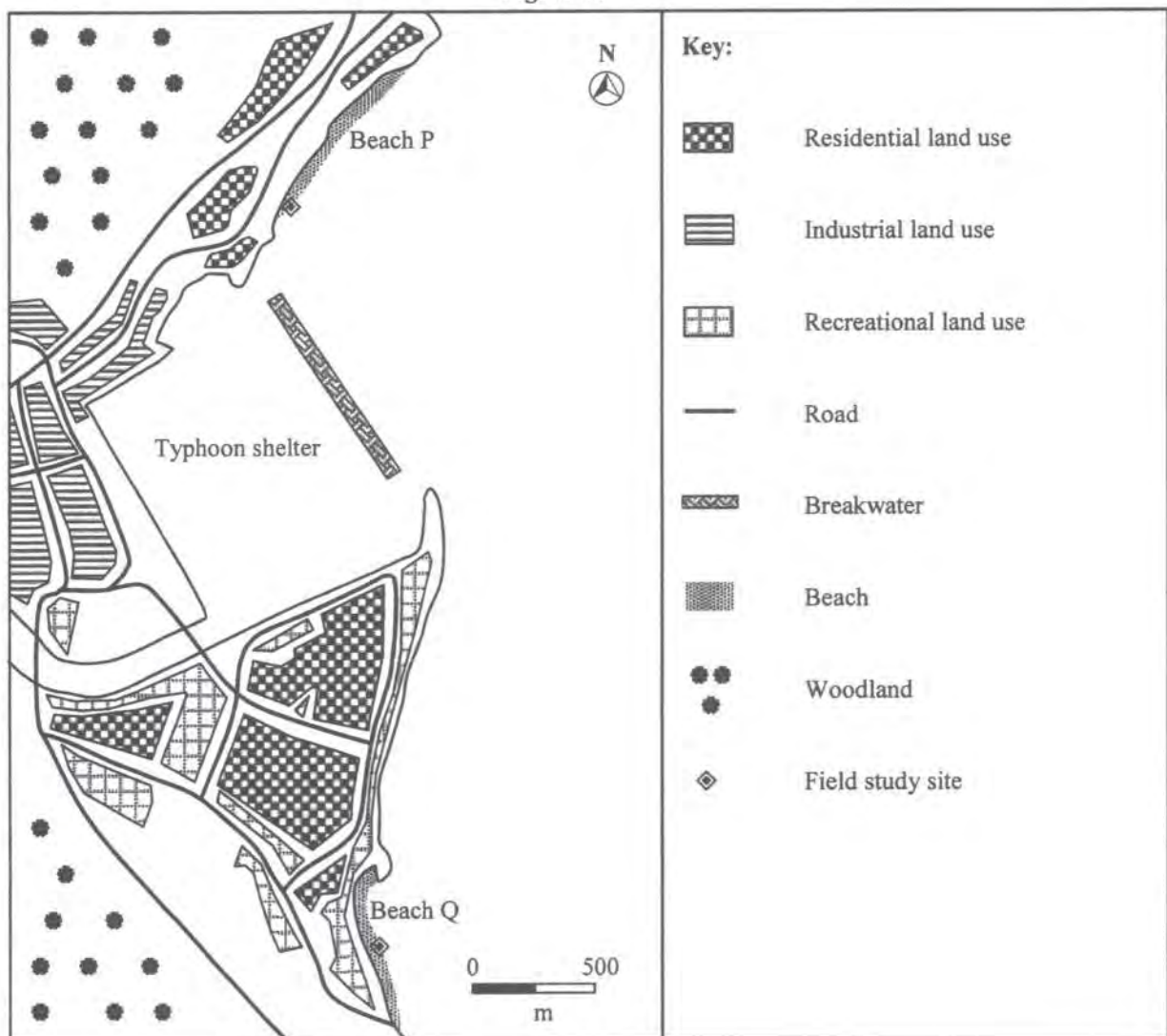
Figure 1a

Figure 1b

Table 1c

	Beach P			Beach Q	
Data set	Wave frequency per minute	Distance travelled by floating object along shore per minute (cm)	Data set	Wave frequency per minute	Distance travelled by floating object along shore per minute (cm)
1	6	90	1	12	105
2	6	315	2	12	102
3	7	86	3	13	101
4	7	90	4	12	105
5	7	98	5	13	113
Mean	6.6	135.8	Mean	12.4	105.2

(a) Refer to Figure 1a and Table 1c. Describe how to collect the data with different tools and instruments in this field study. (4 marks)

(b) Refer to Figure 1b and Table 1c. The group of students collected the data respectively at the field study sites of beach P and beach Q successively. They collected five sets of data at each field study site. Each data collection lasted for one minute.

Suggest the drawbacks of the above method of data collection. Explain how such drawbacks affect data reliability. (5 marks)

(c) The students arrived at the conclusion that 'the higher the wave frequency, the slower the rate of longshore drift' in this field study.

Based on the data in Table 1c, discuss whether the above conclusion is appropriate. (3 marks)

(d) Suggest **another** field study topic to be carried out in the area shown in Figure 1b. Describe and explain the method(s) of collecting data. (6 marks)

2.   Figure 2a shows the locations of an earthquake which occurred in 2018 near city X and the volcanic eruption nearby.   Table 2b shows the information of the earthquake and tsunami.   Figure 2c shows the damages to city X after the earthquake.   Table 2d shows the changes in the cumulative death toll in city X after the earthquake.

Figure 2a

Key:

◎   Epicentre of earthquake   ▲   Volcano   - - - -   Plate boundary
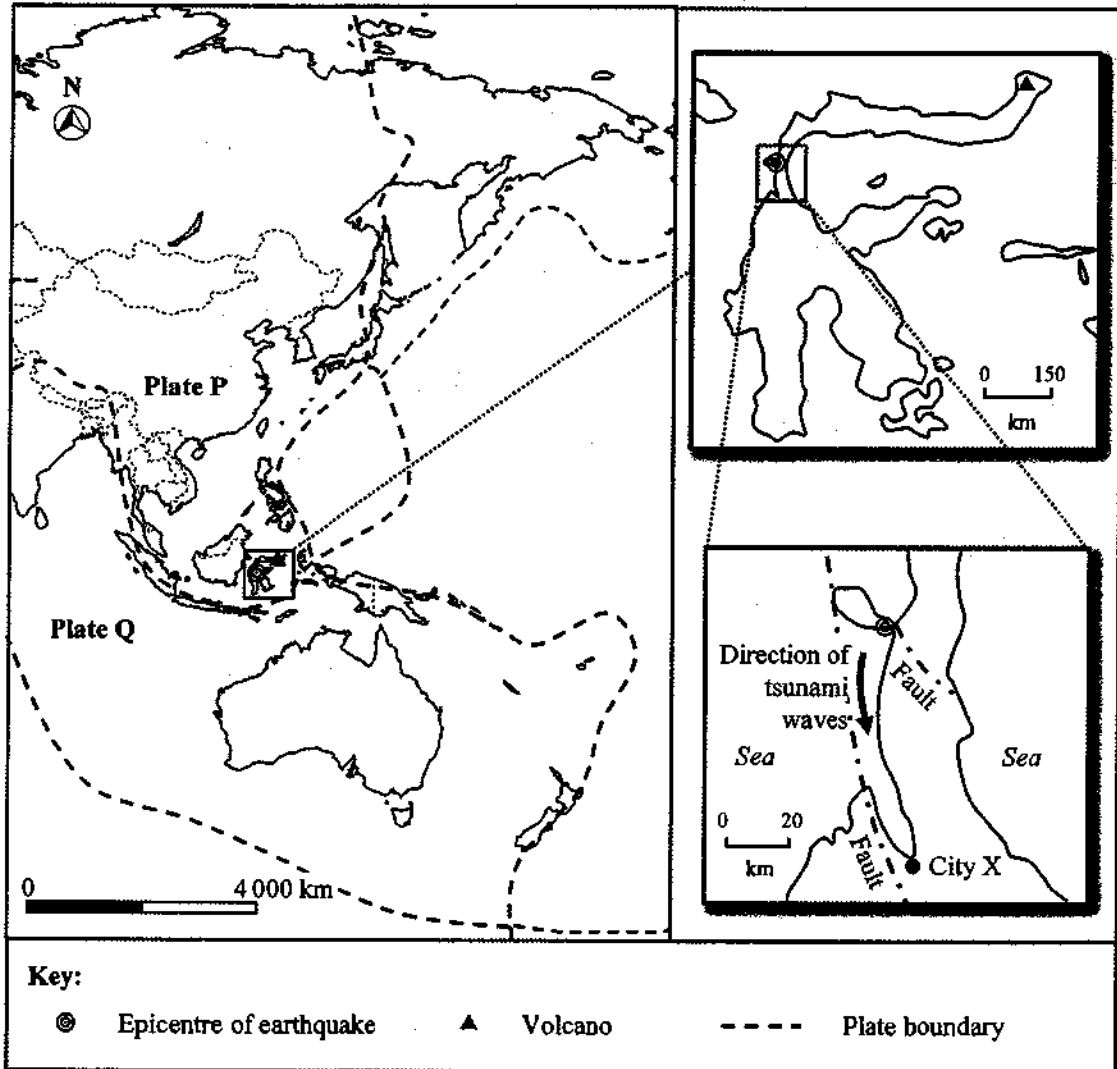
Table 2b

Time of occurrence of earthquake	6:02 pm
Richter scale	7.5
Depth of focus	10 km
Time of occurrence of tsunami	6:27 pm
Height of tsunami	3 m to 10 m

Figure 2c
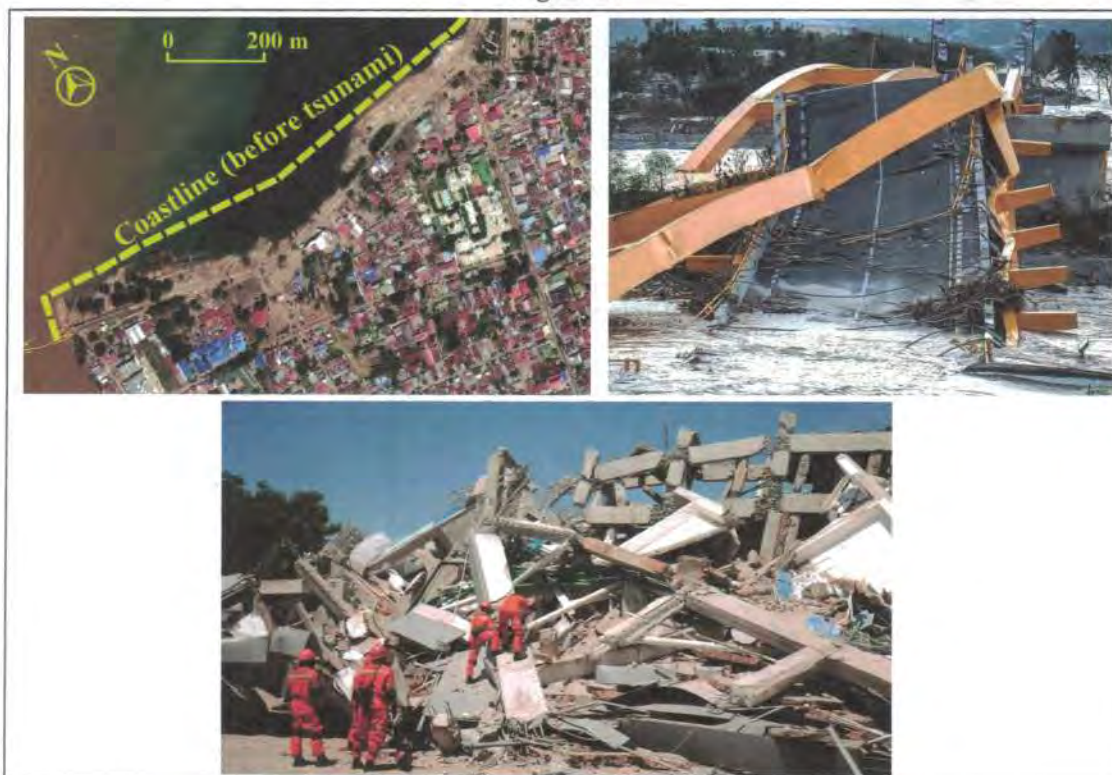
Table 2d

Number of day(s) after occurrence of earthquake	1	3	9	16
Cumulative death toll in city X	384	844	1 763	> 2 200

(a) Refer to Figure 2a.

   (i)   Name plates P and Q. (2 marks)

   (ii) With reference to the plate tectonics theory, explain why different tectonic hazards occurred at the island where city X is located. (6 marks)

(b) Using information in Figure 2a, Table 2b and Figure 2c as evidence, explain why city X was seriously damaged in this earthquake. (6 marks)

(c) Refer to Table 2b, Figure 2c and Table 2d.

   Discuss whether a good warning system could have prevented the death toll in city X from rising continuously after the earthquake. (4 marks)

3. Figure 3a shows the location, climatic conditions and a local farming activity of area X. Figure 3b shows the population, number of livestock and annual rainfall of the country at which area X is located from 1961 to 2014. Figure 3c shows a farming management method.

Figure 3a

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	24.3	27.3	30.9	33.8	34.0	31.5	29.0	27.9	29.0	30.8	27.9	25.0
Rainfall (mm)	0	0	3.9	5.7	34.7	68.8	154.3	170.8	92.2	9.7	0.7	0
Potential Evapo-transpiration (mm)	86	88	96	95	94	86	70	60	62	63	70	72
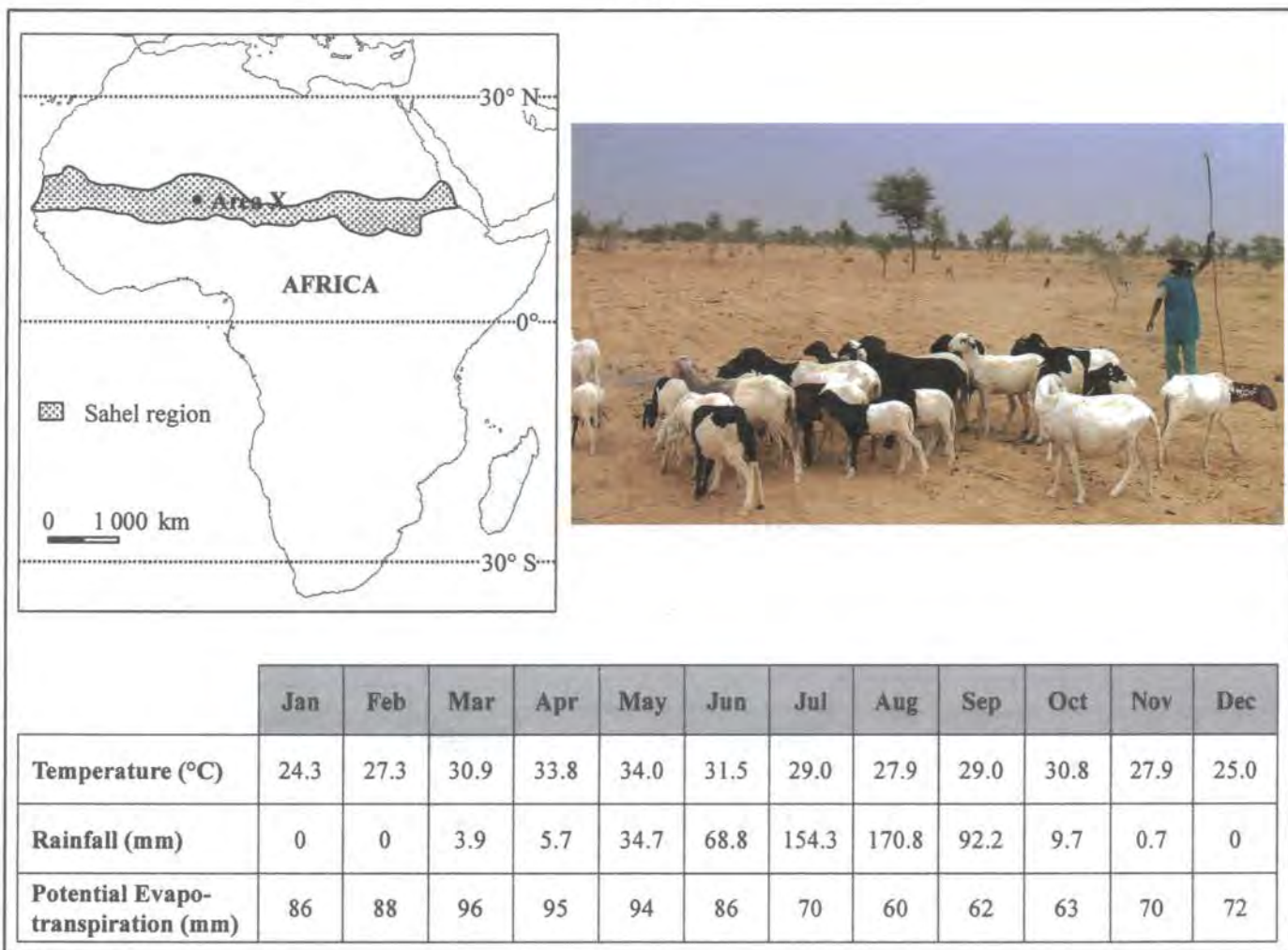
(a) Refer to Figure 3a.

   (i) Describe and explain the climatic constraints encountered by farming in area X.   (4 marks)

   (ii) Describe and explain how people of area X carry out farming activities under the above climatic constraints.   (3 marks)
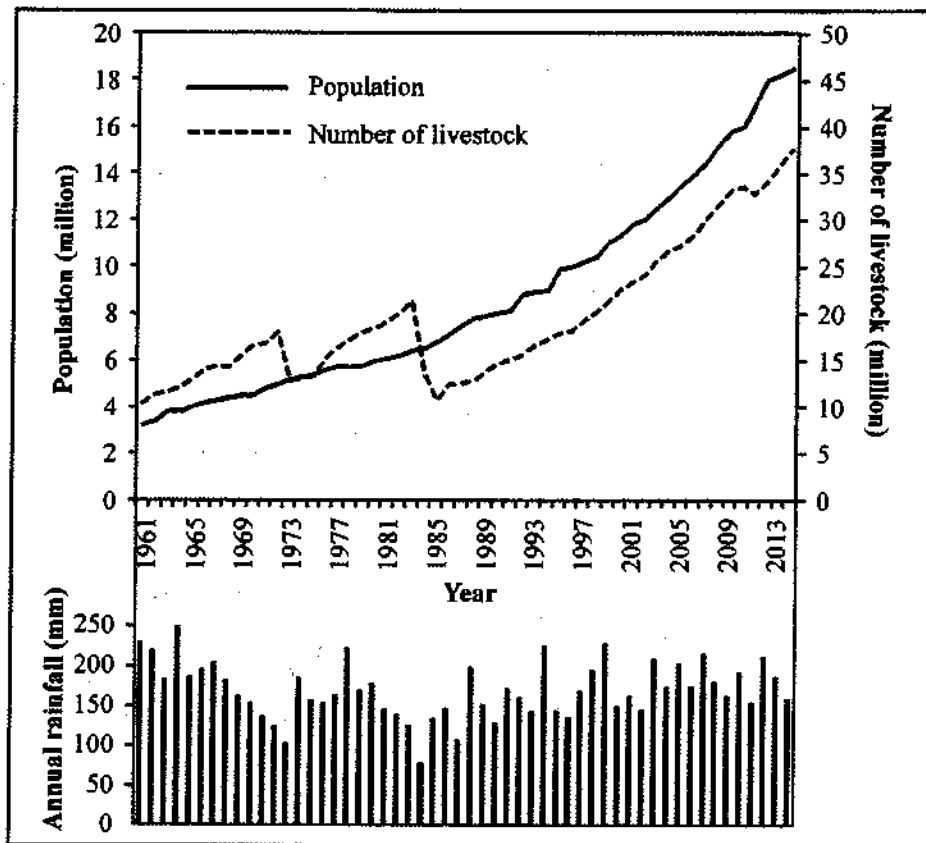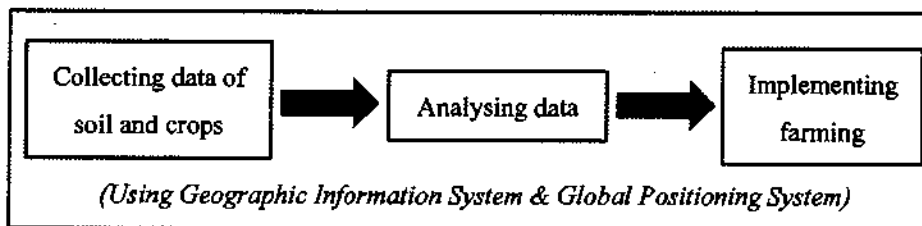
Figure 3b

Figure 3c

Collecting data of soil and crops → Analysing data → Implementing farming

(Using Geographic Information System & Global Positioning System)

(b) Refer to Figures 3a and 3b. Why is the farming activity of area X unable to provide sufficient food to the local population? (4 marks)

(c) (i) Describe and explain how the farming management method in Figure 3c helps farming production. (3 marks)

(ii) Refer to Figures 3a, 3b and 3c. Discuss whether area X can improve local food supply by adopting this farming management method. (4 marks)

4. Refer to the map extract (1:5 000) of Hong Kong which shows part of the Kowloon City district. Figure 4a shows respectively the photograph and artist impression of site X (grid square 1482) before and after urban renewal. Figure 4b shows the proposed urban renewal plan of area Y (grid squares 1482, 1483, 1582 and 1583).
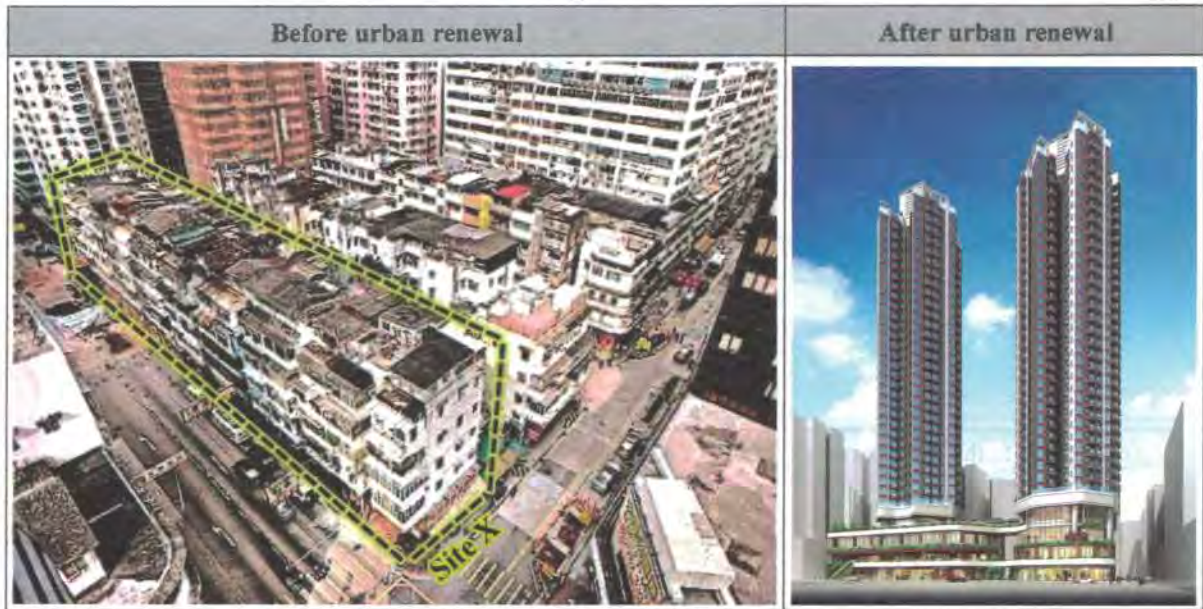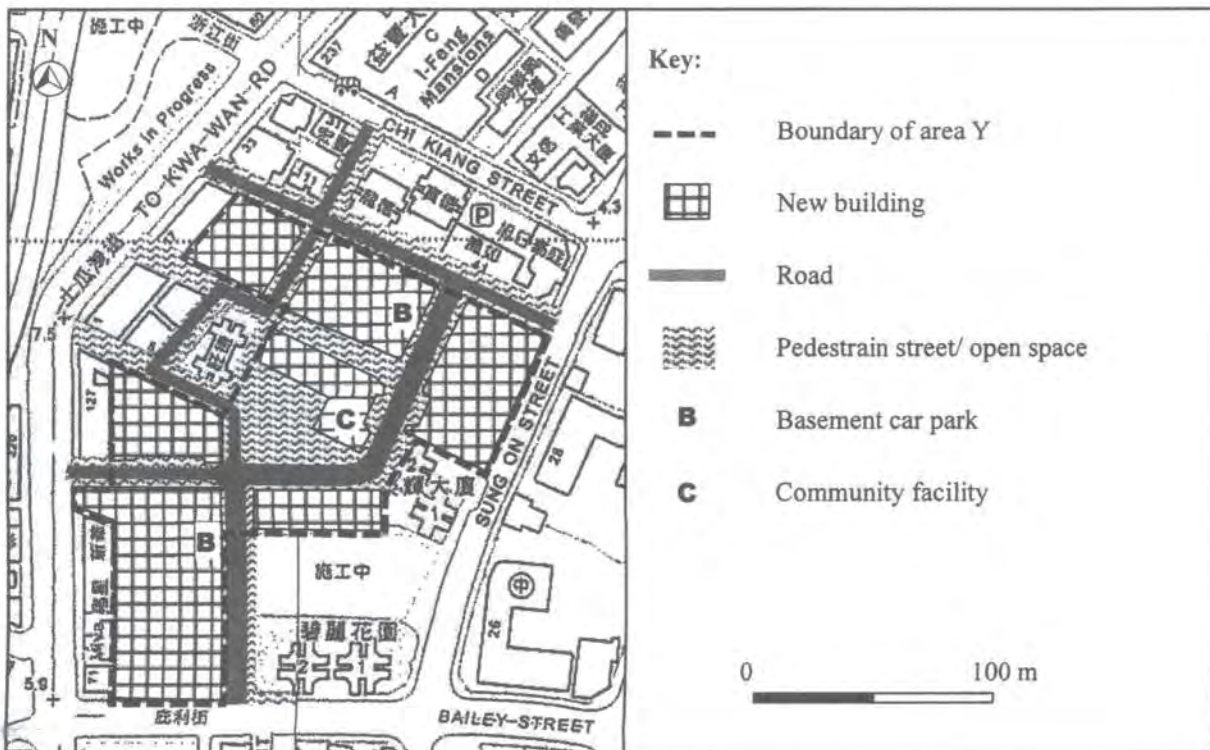
Figure 4a

Figure 4b

Key:

- - -   Boundary of area Y

New building

Road

Pedestrain street/ open space

B   Basement car park

C   Community facility

0   100 m

(a)   Refer to Figure 4a and the map extract (1:5 000) of Hong Kong.

   (i)   Describe the urban problems found in the area of the photograph in Figure 4a before urban renewal. (4 marks)

   (ii)   Identify the urban renewal strategy at site X and explain how it may alleviate the above urban problems.   Support your answer with evidence from Figure 4a. (5 marks)

(b)   Refer to Figure 4a, Figure 4b and the map extract (1:5 000) of Hong Kong.

   Both site X and area Y adopt the same urban renewal strategy.

   Explain why the proposed urban renewal plan of area Y is more preferable. (5 marks)

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

   Besides site X and area Y, several urban renewal projects are in progress in the area east of Ma Tau Wai Road.

   Discuss the conditions favourable for the current urban renewal in the area east of Ma Tau Wai Road.
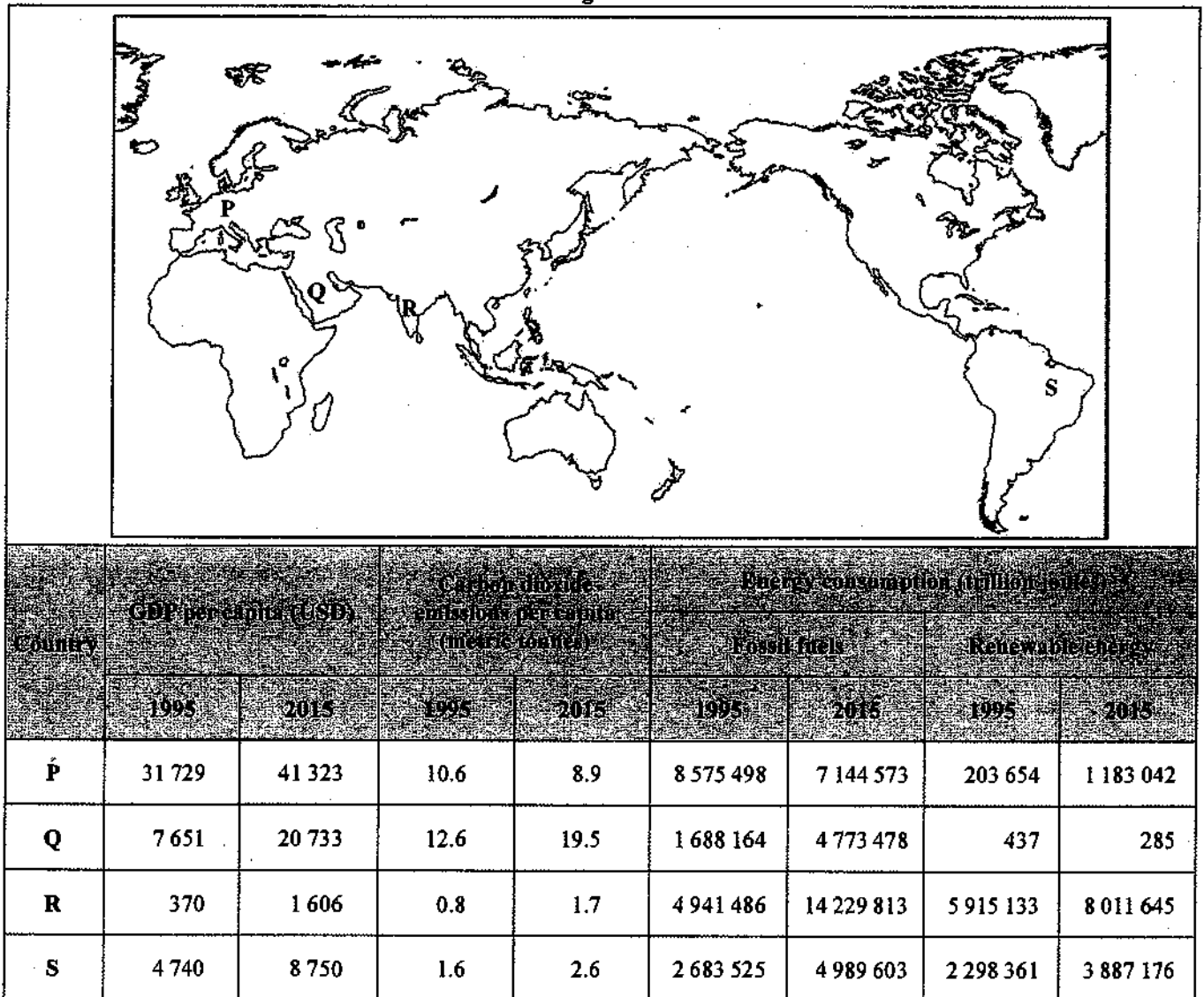   (4 marks)

5. Table 5a shows some data in relation to global mean temperature anomalies from 1995 to 2015. Figure 5b shows the GDP per capita, carbon dioxide emissions per capita and energy consumption in some countries in 1995 and 2015.

Table 5a

Year	Amount of atmospheric CO₂ concentration (metric tonnes)	Global energy consumption from fossil fuels (trillion joules)	Global forest cover (square km)	*Global mean temperature anomalies (°C)
1995	23 083	312 642 000	40 919 359	+ 0.43
2005	29 432	400 669 200	40 327 427	+ 0.69
2015	36 019	471 952 800	39 991 336	+ 0.99

* Based on global mean temperature from 1901 to 2000.

Figure 5b

Country	GDP per capita (USD)		Carbon dioxide emissions per capita (metric tonnes)		Energy consumption (trillion joules)			
					Fossil fuels		Renewable energy	
	1995	2015	1995	2015	1995	2015	1995	2015
P	31 729	41 323	10.6	8.9	8 575 498	7 144 573	203 654	1 183 042
Q	7 651	20 733	12.6	19.5	1 688 164	4 773 478	437	285
R	370	1 606	0.8	1.7	4 941 486	14 229 813	5 915 133	8 011 645
S	4 740	8 750	1.6	2.6	2 683 525	4 989 603	2 298 361	3 887 176

(a) Refer to Table 5a.

(i) Describe and explain the trend of the change in the amount of atmospheric carbon dioxide from 1995 to 2015. (4 marks)

(ii) Draw an annotated diagram to illustrate the radiation activities in the atmosphere. (3 marks)

(iii) Explain how the trend of change mentioned in (a) (i) affects global mean temperatures with reference to the annotated diagram drawn in (a) (ii). (3 marks)

(b) Refer to Figure 5b.

(i) Account for the relationship between the changes in GDP per capita and carbon dioxide emissions per capita in country S. (4 marks)

(ii) Discuss whether it is feasible to reduce the carbon dioxide emissions by international cooperation according to the situations in countries P, Q and R shown in Figure 5b. (4 marks)

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

6.   Explain the physical conditions favouring the formation of depositional features at the lower course of a river. Discuss the influences of implementing different river management strategies at the lower course on river deposition. (12 marks)

7.   Account for the factors affecting the location of the IT industry in the United States. Discuss how the development of global transport and telecommunication facilitates the IT industry in the United States to outsource its production. (12 marks)

8.   Account for the characteristics of the nutrient compartments in a tropical rainforest. Discuss whether plantation causes greater changes to these nutrient compartments than shifting cultivation. (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.