HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION 2023

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.

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 reduced bearing from HK Maritime Museum at 505128 to Tamar Park at 512118 is approximately _____.

    A. S35°E
    B. N35°W
    C. S55°E
    D. N75°W

2. Which of the following **cannot** be found in grid square 5111?

    A. car park
    B. green minibus terminus
    C. restricted access
    D. LPG filling station

3. The average gradient of the section of Magazine Gap Road from spot height 291.1 at 512089 to spot height 232.7 at 505096 is _____.

    A. 1:7.1
    B. 1:8.5
    C. 1:10.9
    D. 1:12.7

4. Which of the following statements about the grid square 5008 is/ are correct?

    (1) The elevation on the NW is higher than that of the SE.
    (2) Some buildings are built on artificial slopes.
    (3) A footpath links up Guildford Road and Severn Road.

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

5. The section of footpath (Dutch Lane) from 520097 to 522090 _____.

    (1) is located between 190 m and 210 m
    (2) is accessible by road
    (3) passes through rivers

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

6.   Refer to the transect along easting 50 from 500110 to 500120 below.

Northing11   Northing12

500110 ├─── A ─── | ──── B | | ──── C ──── | ── D ─┤ 500120
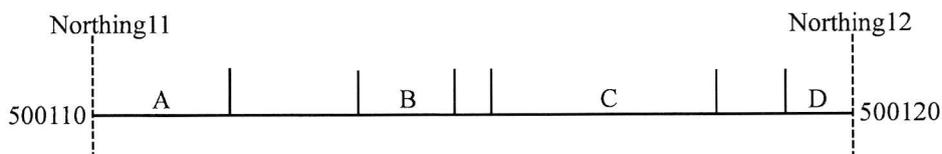
      Which of the following labels in the above transect is **incorrect**?

        A.   Institutional land use
        B.   Commercial land use
        C.   Recreational land use
        D.   Transportation land use

7.   Refer to the graph below.

Distance from the mid-oceanic ridge
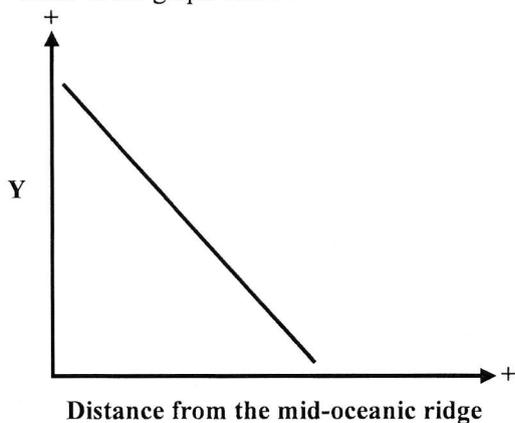
      Which of the following is/ are possible label(s) for the Y-axis in the above graph?

      (1)   depth of ocean
      (2)   ages of rocks
      (3)   frequency of volcanic eruptions

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

8.   Which of the following statements about a hotspot is correct?

        A.   It is located at the core.
        B.   Its location changes over time.
        C.   It causes plate movement.
        D.   It is formed by the presence of mantle plume.

9. Which of the following is favourable for the formation of a spit?

    A. gentle offshore gradient
    B. straight coastline
    C. exposed headland
    D. long fetch

10. Refer to the photograph below, which shows a section of coast.

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

    (1) sea wall
    (2) rock amour
    (3) breakwater

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

11. Which of the following is the characteristic of light industry in Hong Kong in the 1970s?

    A. It was a capital intensive industry.
    B. It was a market-oriented industry.
    C. It adopted a multi-point production mode.
    D. It was commonly located close to housing estates.

12. Which of the following statements about the US IT industry are correct?

(1) It is a high-tech industry.
(2) Its assembly plants are commonly set up in less developed countries.
(3) Its headquarters are clustered in the city centres.

    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 a building before and after urban renewal.

Before urban renewal	After urban renewal

The urban renewal strategy shown in the photographs is _____.

    A. redevelopment
    B. rehabilitation
    C. revitalisation
    D. preservation

14. Refer to the table below, which shows the population of country X in 2000 and 2020.

	2000	2020
Rural population (million)	20	25
Urban population (million)	35	40

The urban process(es) taken place in country X is/ are _____.

(1) urbanisation
(2) urban growth
(3) reurbanisation

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

15. Refer to the photograph below, which shows an agricultural activity.

Which of the following descriptions about the agricultural activity is correct?

    A.   multiple cropping
    B.   mixed farming
    C.   extensive farming
    D.   horticulture

16. Which of the following is/ are the constraint(s) of the irrigation farming in Southern California?

(1) high evaporation rate
(2) long frost-free period
(3) lack of investment in agricultural research and development

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

17. Refer to the figure below, which shows the nutrient cycle of the ecosystem of a tropical rainforest.
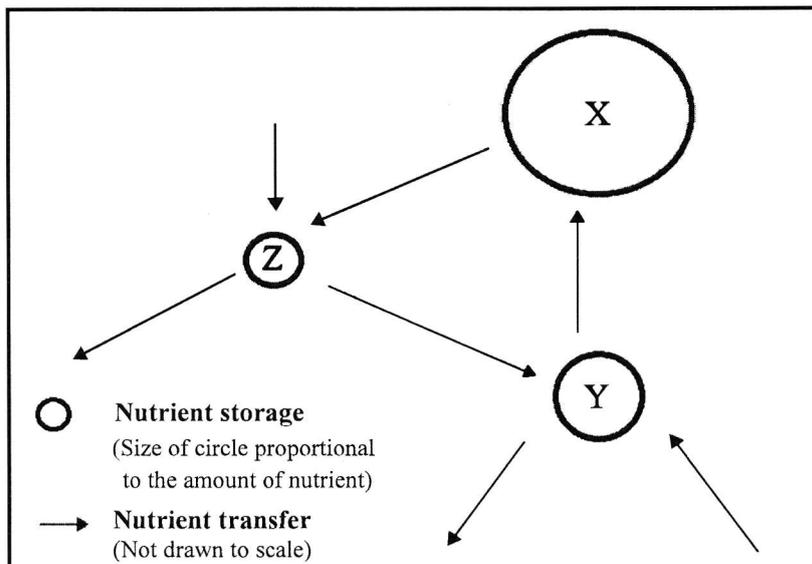
Which of the following sets of labels of X, Y and Z is correct?

	X	Y	Z
A.	Biomass	Litter	Soil
B.	Biomass	Soil	Litter
C.	Litter	Biomass	Soil
D.	Soil	Litter	Biomass

18. Which of the following impacts is/ are brought about by large scale deforestation on the microclimate of the tropical rainforests?

(1) larger diurnal range of temperature
(2) larger annual range of temperature
(3) higher wind speed

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

19. Which of the following statements about urban heat island effect in Hong Kong is correct?

    A. Pavements in urban areas absorb heat at night.
    B. Weak air ventilation in urban areas slows down evaporation and heat dispersal.
    C. Tall and dense buildings in urban areas reduce heat storage.
    D. The nighttime temperature difference between urban and rural areas is more significant in summer than in winter.

20. The figure below shows the duration of two weather warnings issued by the Hong Kong Observatory from 2000 to 2021.

Key: − − Cold weather warning ——— Very hot weather warning
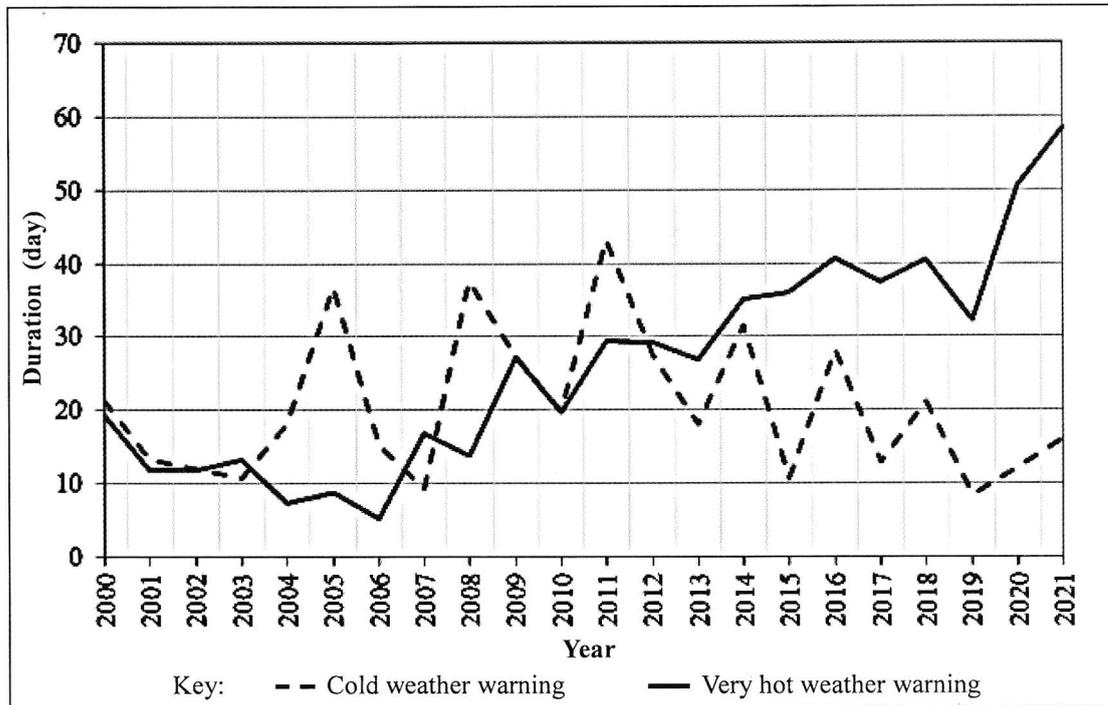
Which of the following statements are correct?

(1) The duration of the cold weather warning showed an increasing trend over the years.
(2) The duration of the very hot weather warning showed an increasing trend over the years.
(3) The duration of the very hot weather warning was always longer than that of the cold weather warning from 2012 to 2021.

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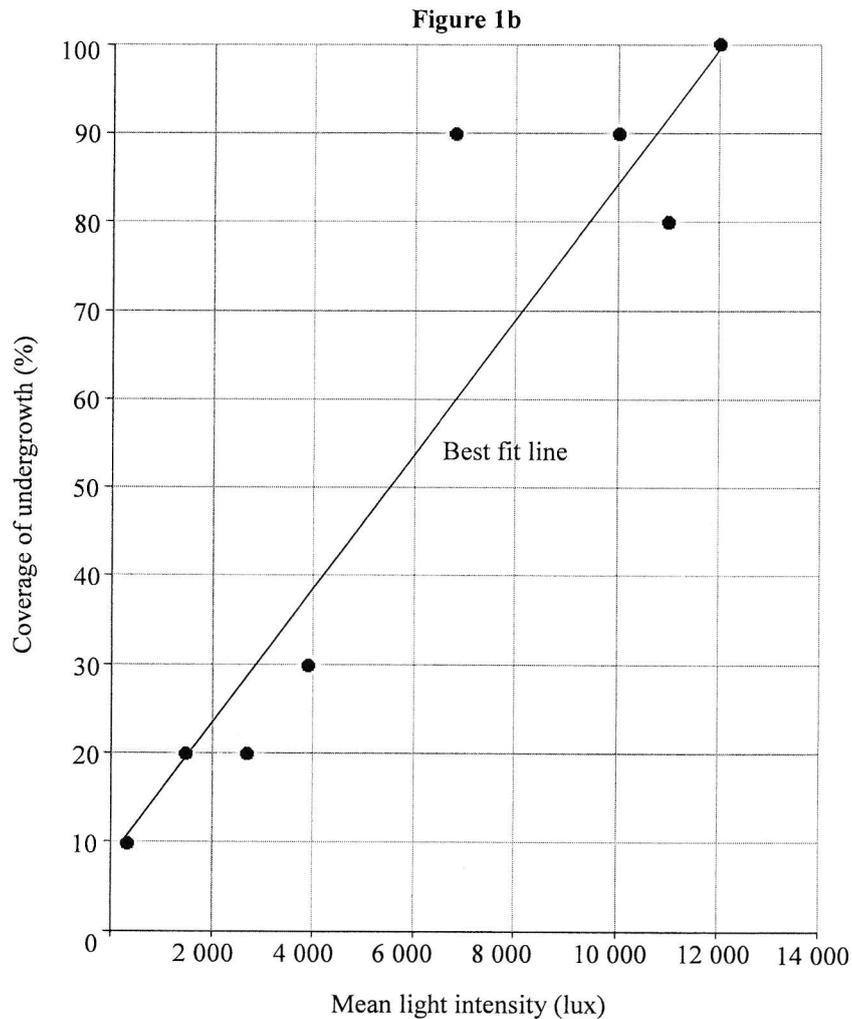   C. (2) and (3) only
    D. (1), (2) and (3)

END OF SECTION A

1. **The fieldwork-based question below is OPTIONAL.**

A group of students conducted a geography fieldwork in a woodland in Hong Kong.   Table 1a shows some instructions for this fieldwork.   Figure 1b shows the mean light intensity and the coverage of undergrowth based on the data collected along transects Q and R.

Table 1a

Fieldwork topic	A study of the relationship between light intensity and coverage of undergrowth
Fieldwork schedule	A day in July at noon
Sites for data collection	Key: ── Transect ▒ Road Woodland boundary Sampling point ⌒80⌒ Contour line (V.I. 4 m)
Procedures of data collection	(1) Two transects (Q and R) are set up. Each transect is 30 metres long. (2) The sampling points are placed at regular intervals along each transect. (3) Data are collected along transect Q first, then transect R.
Tools for collecting data	A measuring tape, a grid quadrat, a lux meter

Figure 1b

(a) Refer to Table 1a. State one merit and one demerit of the fieldwork schedule. Explain your answer.

(4 marks)

(b) Refer to Table 1a. The students used stratified sampling to set up transects Q and R in the woodland. Explain why this sampling method is used. (4 marks)

(c) Refer to Figure 1b.

  (i) Draw a conclusion for the fieldwork. (1 mark)

  (ii) Name the data presentation method shown in the figure. How do the students use this method to draw the conclusion answered in (c)(i)? (3 marks)

(d) Refer to Table 1a and Figure 1b. Evaluate the data collection methods used in the fieldwork and suggest ways for further improvement. (6 marks)

2. Figure 2a shows the locations of tectonic landform feature A, volcano X and some active volcanoes in the Philippines. Figure 2b shows some information of an eruption of volcano X. Table 2c shows the actions taken by the government in response to the volcanic events of this eruption.

Figure 2a
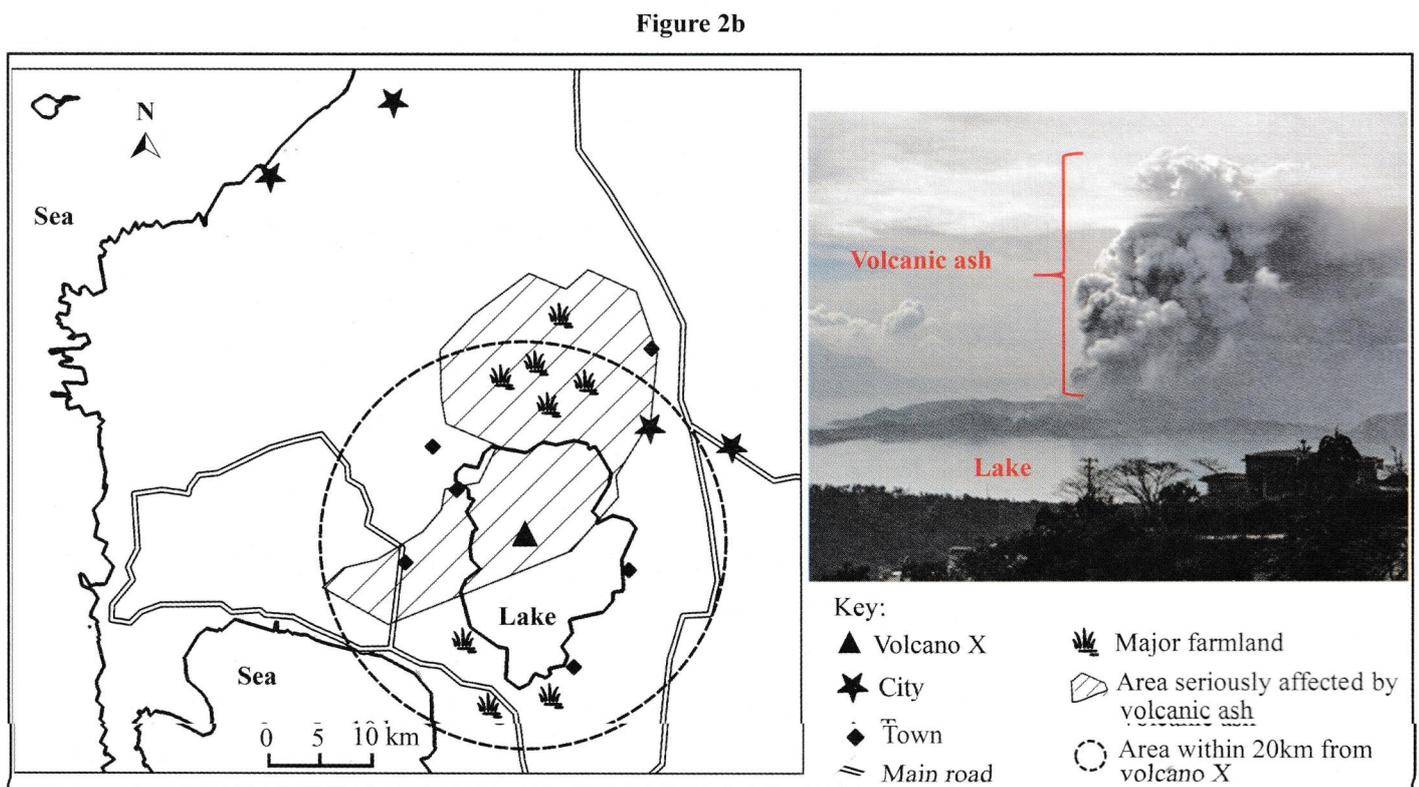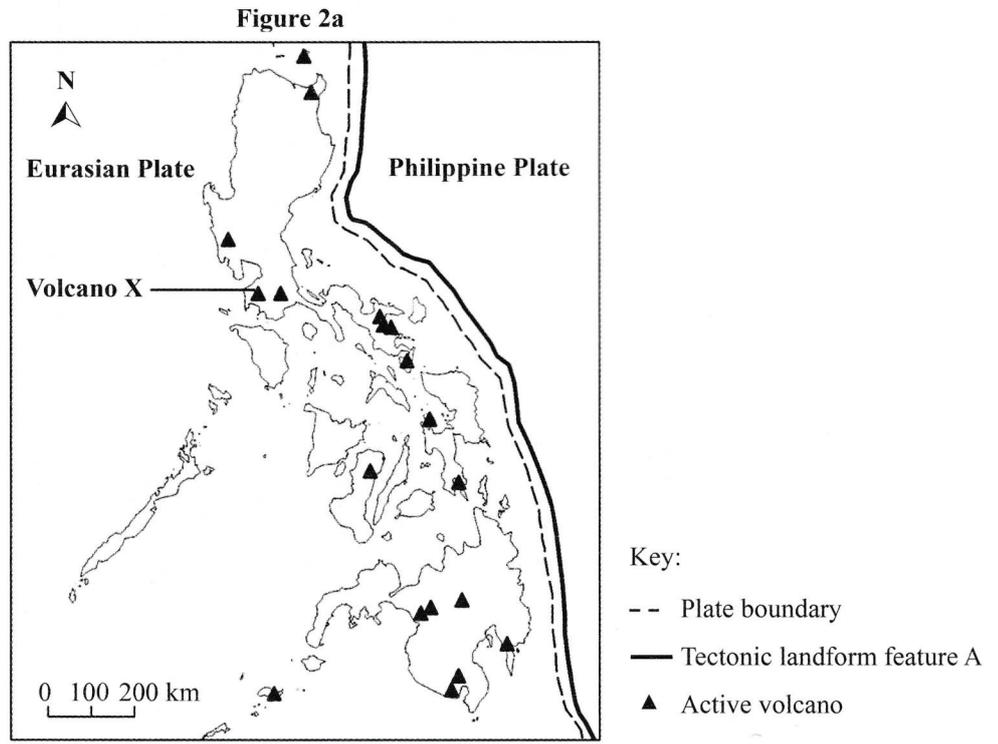

Key:
- -- Plate boundary
- — Tectonic landform feature A
- ▲ Active volcano

Figure 2b

Key:
- ▲ Volcano X
- ★ City
- ◆ Town
- ≈ Main road
- 🌾 Major farmland
- ⬚ Area seriously affected by volcanic ash
- ⭕ Area within 20km from volcano X

Table 2c

Date	Time	Volcanic events	Actions taken by the government
Day 1	1:00 pm to 2:30 pm	- eruption started - eruption continued	- first warning issued - evacuation centres started operation
	4:00 pm	large volume of volcanic ash ejected	- second warning with a higher level issued - residents in the towns around the lake evacuated
Day 2		eruption continued	- evacuation area extended up to 20km from volcano X - all residents evacuated

(a)   Refer to Figure 2a.

    (i)   Identify tectonic landform feature A.   (1 mark)

    (ii)   Draw a series of annotated diagrams to explain the coexistence of the tectonic landform feature A and the active volcanoes along the plate boundary.   (5 marks)

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

    (i)   Account for the adverse socio-economic impacts brought about by the eruption of volcano X.   (4 marks)

    (ii)   *One person died in this volcanic eruption.*
        With evidence from Figure 2b and Table 2c, explain the low death toll.   (4 marks)

(c)   *It is suggested that all human activities within 20km from volcano X should be banned.*
    Refer to Figure 2a, Figure 2b and Table 2c.   Discuss the appropriateness of this suggestion.   (4 marks)

3. Figure 3a shows the information related to the state-owned iron and steel production centre X in China before the 1950s. Table 3b shows some measures adopted in the 1980s by the iron and steel production centre X. Table 3c shows some measures adopted in the 2010s by the iron and steel production centre X.
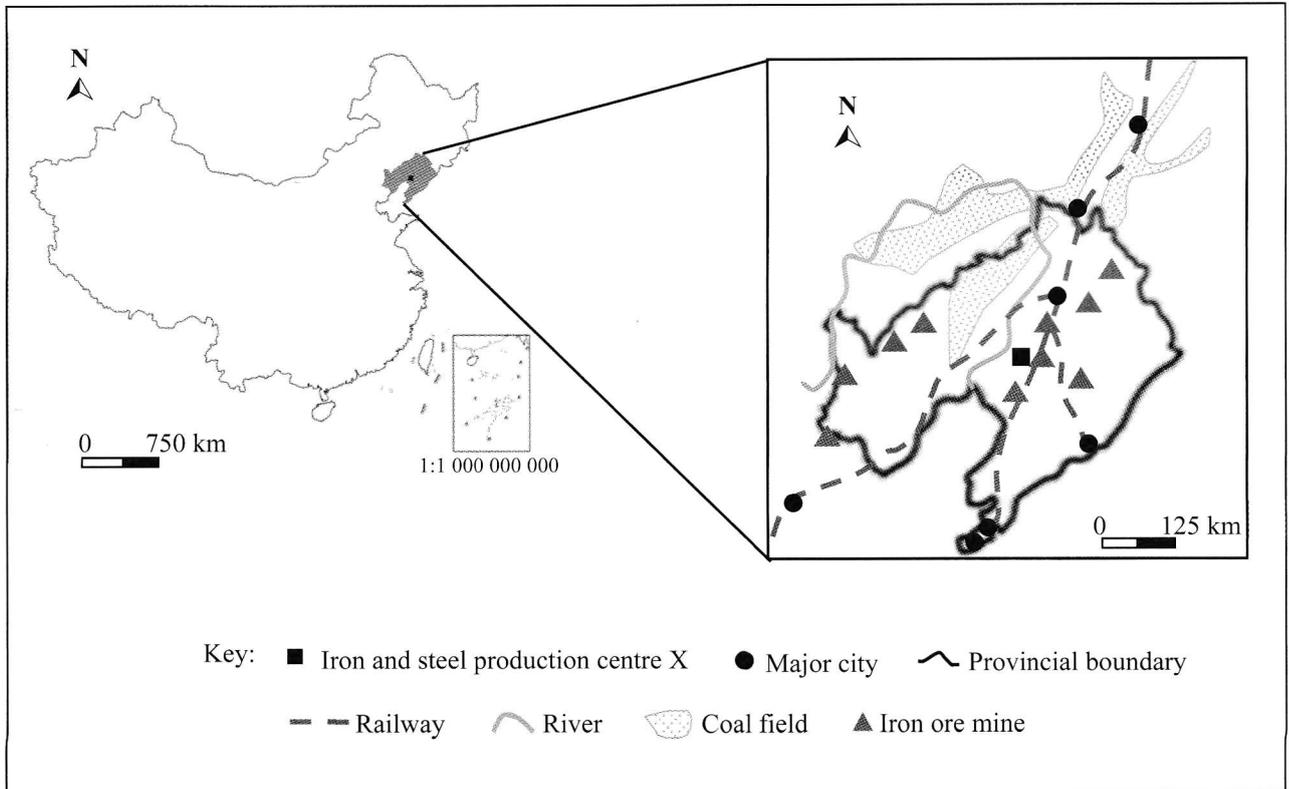
Figure 3a

Key: ■ Iron and steel production centre X ● Major city ⌒ Provincial boundary
━ ━ Railway ⌒ River ▨ Coal field ▲ Iron ore mine

Table 3b

1980s
Measures adopted to solve some prevailing problems of the iron and steel production centre X :
• modernising plants with the cost of approximately 3.4 billion RMB
• expanding the production of iron ore mines nearby with the cost of approximately 1.5 billion RMB

Table 3c

2010s
Measures adopted to improve the technological level of the iron and steel production centre X :
• making use of the government funds on research and development
• using wastewater, waste heat and scrap steel generated from production
• using 5G technology and the internet
• upgrading the blast furnace to reduce the emission of pollutants

(a) Quote evidence from Figure 3a, account for the location of the iron and steel production centre X before the 1950s. (6 marks)

(b) *The iron and steel production centre X was founded in 1916.*
Refer to Figure 3a and Table 3b. What are the reasons for the iron and steel production centre X to remain in its original location in the 1980s? (3 marks)

(c) Refer to Table 3c.

(i) Explain how the improvement in the technological level in the 2010s might have affected the inputs and production of the iron and steel production centre X. (5 marks)

(ii) Under the technological improvement mentioned in (c)(i), discuss the location of the iron and steel industry in China may be affected. (4 marks)

4. The map extract of Hong Kong (1: 5 000) shows part of Central and Wan Chai. Figure 4a shows two photographs taken in grid square 4911 at around 9 a.m. Figure 4b and Figure 4c show the design of the new development plan in Central and Wan Chai (the area north of the broken line on the map extract).

Figure 4a

Figure 4b

Key: ① Promenade   ② Open Space Corridor
      ✳ Planned Tamar Station   ◄──► Pedestrian network
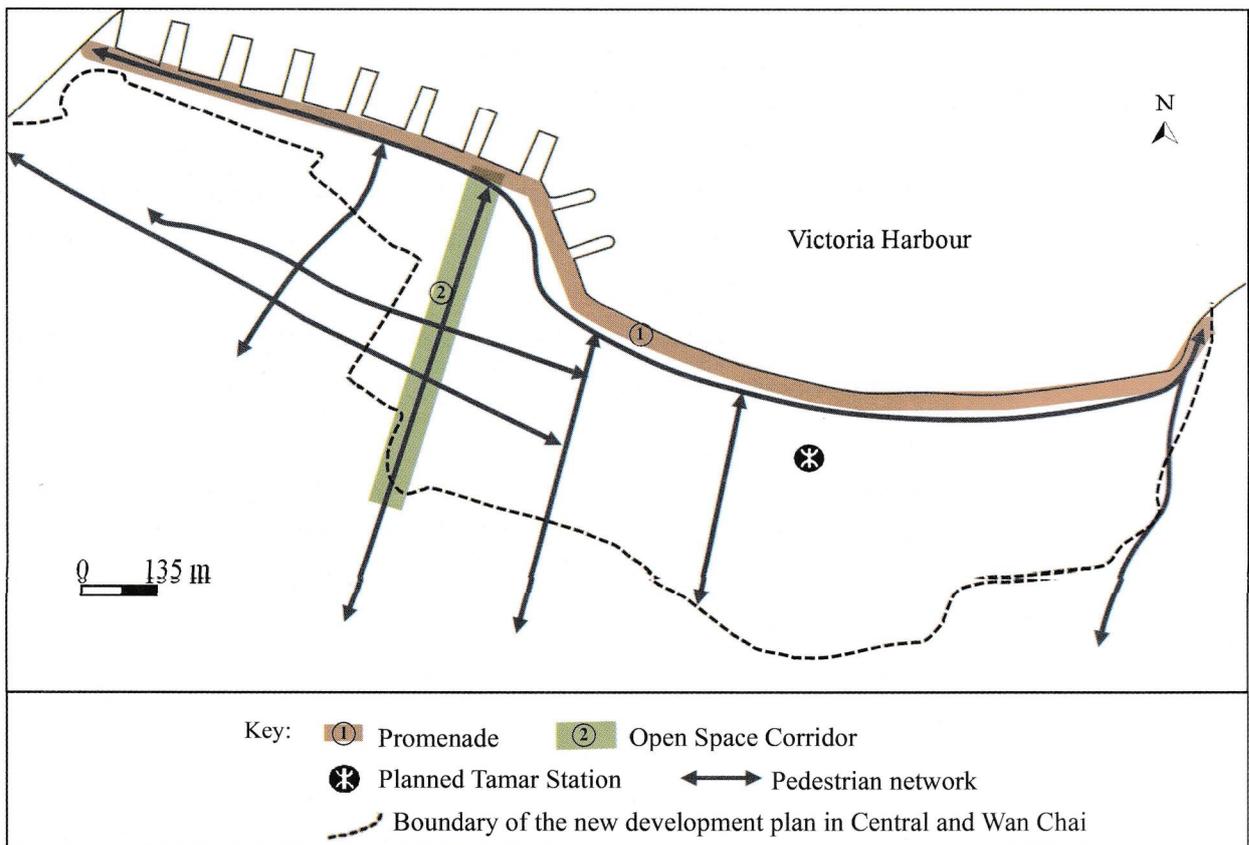   ⌇ Boundary of the new development plan in Central and Wan Chai

Figure 4c

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

    (i) Describe the commercial land use pattern and the road network pattern in grid square 4911.

                                                                          (3 marks)

    (ii) Account for the problems brought about by the patterns mentioned in question (a)(i) in Central.

                                                                          (4 marks)

    (iii) Explain how the Central-Wanchai Bypass (grid squares 4912, 5012, 5111, 5112 and 5211) alleviates the transport problems in Central. (3 marks)

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

    (i) Describe and explain the conditions favourable for the new development plan in Central and Wan Chai. (4 marks)

    (ii) Discuss whether the new development plan in Central and Wan Chai helps achieve social sustainability. (4 marks)

5. Figure 5a shows the locations of country X and some countries which have had food shortage problems in Africa in recent years. Figure 5b shows some information of country X in 2020. Figure 5c shows some measures to cope with the food shortage problem in country X.
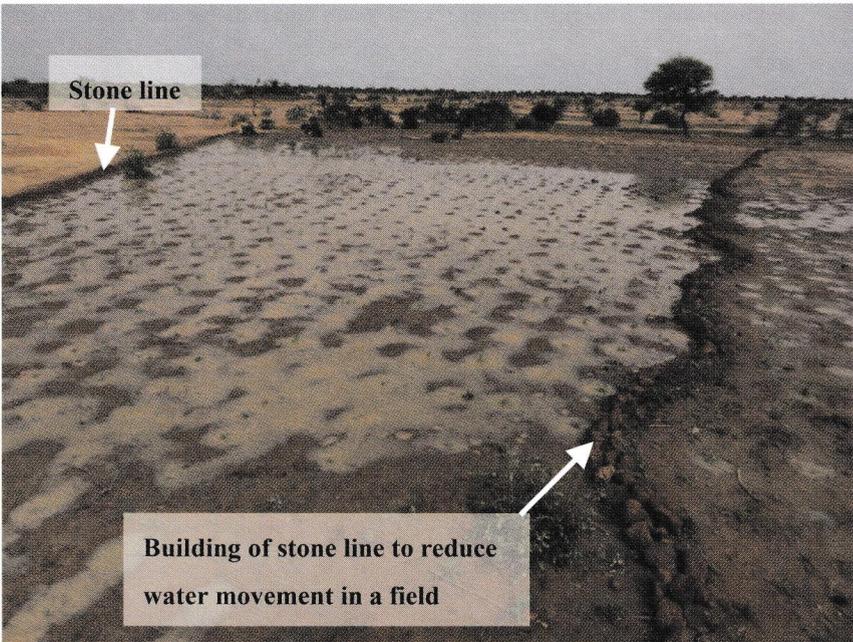
Figure 5a

Key:
Level of food shortage problem
High risk
Medium risk
Low risk
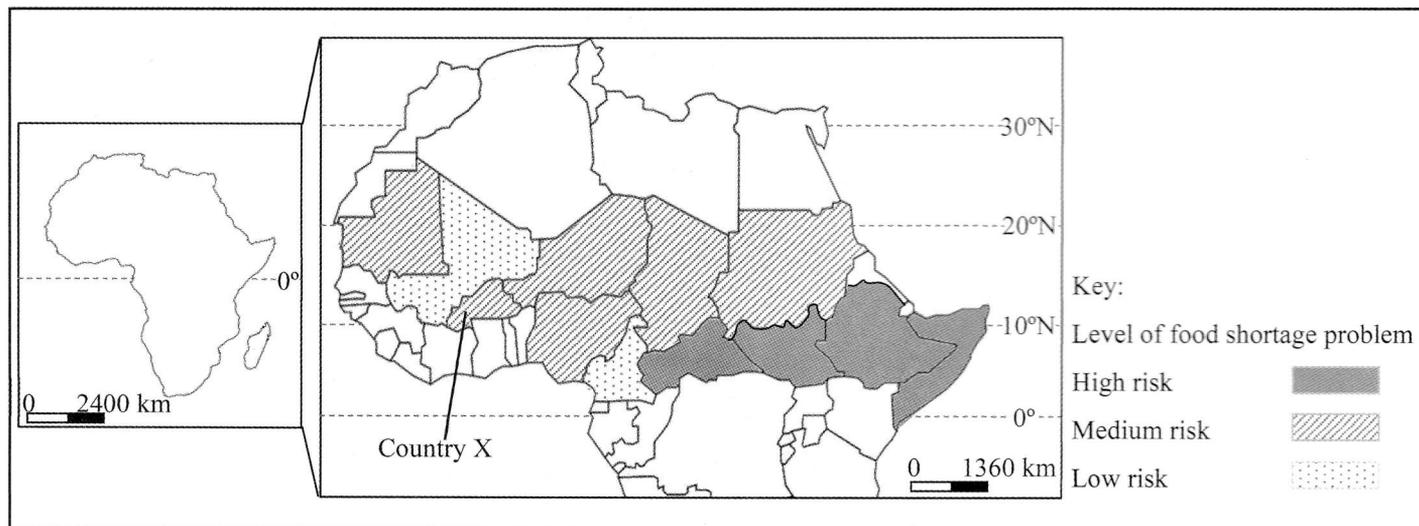
Country X

Figure 5b

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	25.2	27.9	31.2	33.2	32.7	30.3	27.7	26.3	27.1	29.0	28.4	25.8
Rainfall (mm)	0	0	1	9	25	49	117	182	94	26	0	0

Socio-economic conditions	Country X (World)
Population	20 900 000
Population growth (%)	2.8 (0.9)
Literacy rate (%)	39 (87)
GDP per capita (USD)	860 (10 900)
Economy based on arable and pastoral farming (%)	80

Figure 5c

One-off measures provided by the World Food Programme to the people in country X	A recent measure used by farmers in country X for growing crops
- food aid - financial assistance	

(a) Refer to Figure 5a.   Describe the distribution pattern of countries facing levels of high and medium risk food shortage problem in Africa. (3 marks)

(b) Refer to Figure 5b.   With reference to

(i) climatic conditions,   and (3 marks)

(ii) socio-economic conditions, (5 marks)

account for the food shortage problem in country X.

(c) Refer to Figure 5c.   Explain how the measures provided by the World Food Programme affect the food supply of country X. (3 marks)

(d) *Arable farming and pastoral farming are the two major agricultural activities in country X.*

Refer to Figure 5a, Figure 5b and the photograph shown in Figure 5c.
Discuss whether the building of stone lines in the fields may increase the local food production in country X in the long run. (4 marks)

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

6. Account for the physical conditions favouring deposition at the lower course of a river.   Discuss whether the channelisation implemented in recent years can manage the river environment in Hong Kong in a sustainable way.

(12 marks)

7. Describe and explain the changes brought about by different commercial agricultural activities on the vegetation characteristics of tropical rainforests.   Discuss whether the development of agroforestry can make use of the developed tropical rainforests in a sustainable way.

(12 marks)

8. Describe and explain the adverse impact brought about by climate change on the hydrosphere.   Discuss whether advanced technology is effective in alleviating the adverse impact brought about by climate change on the hydrosphere.

(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.