HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION 2022

GEOGRAPHY   PAPER 2

11:45 am – 1:00 pm   (1¼ hours)
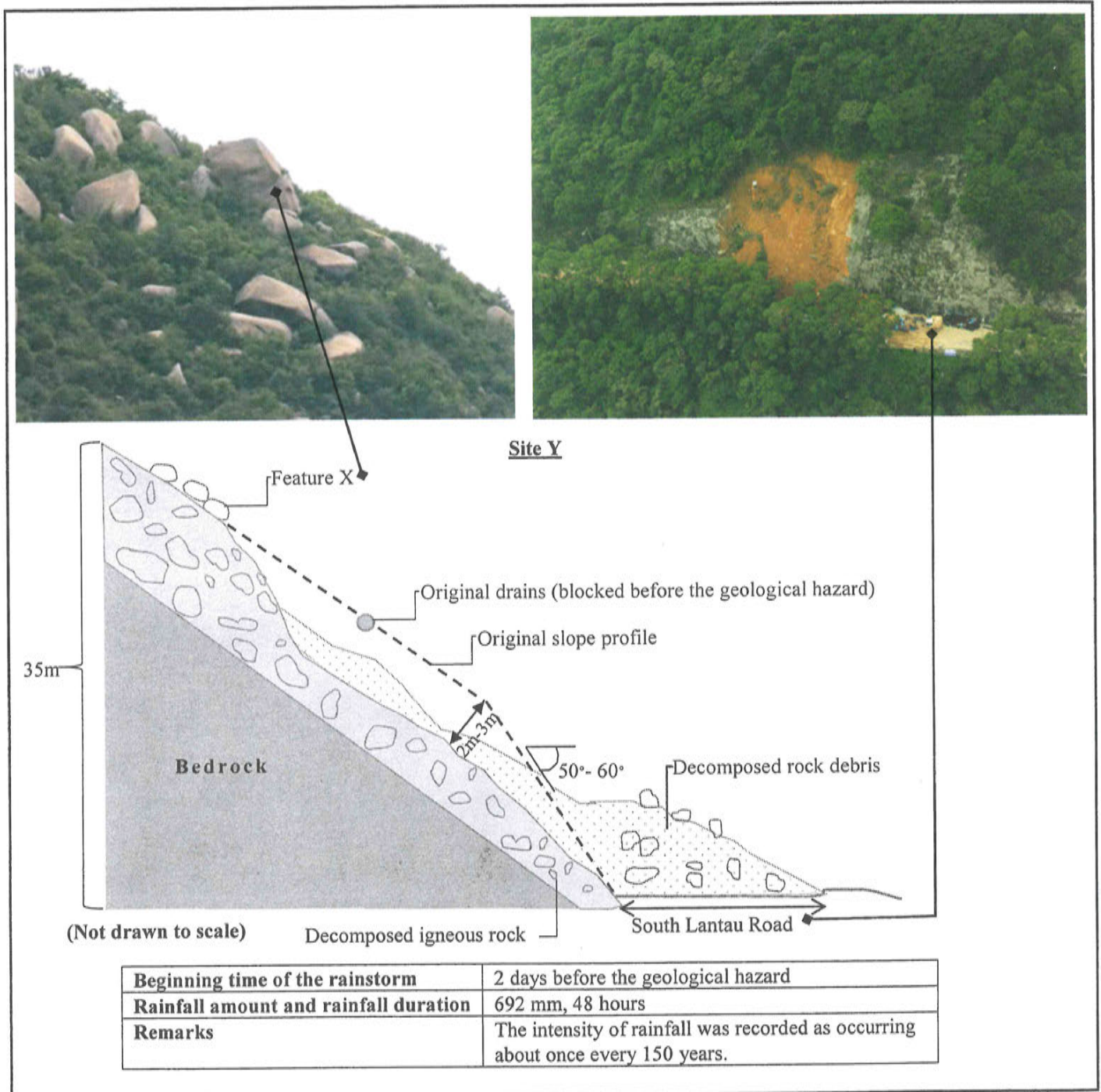This paper must be answered in English

GENERAL INSTRUCTIONS

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

Section D – consists of 4 data / skill-based structured questions.   Attempt any **ONE** question in this section.

Section E – consists of 4 short essay questions.   Attempt any **ONE** question in this section.

2.   Answer a total of **TWO** questions.   The two questions chosen can be taken from the same or different electives.

3.   Write your answers in the Answer Book.   Start each question (not part of a question) on a new page.

4.   Draw sketch maps and diagrams to supply additional, relevant information when appropriate.

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

Section D: Answer any ONE question from this section.   Each question carries 18 marks.

1.   **Elective: Dynamic Earth**

Figure 1a shows feature X and some information of a geological hazard occurred in August in a particular year at site Y along South Lantau Road.   Photograph 1b shows a slope management strategy at another site along South Lantau Road.

Figure 1a

Site Y

Feature X

Original drains (blocked before the geological hazard)

Original slope profile

2m-3m

35m

Bedrock

50°- 60°

Decomposed rock debris

(Not drawn to scale)   Decomposed igneous rock

South Lantau Road

Beginning time of the rainstorm	2 days before the geological hazard
Rainfall amount and rainfall duration	692 mm, 48 hours
Remarks	The intensity of rainfall was recorded as occurring about once every 150 years.

Photograph 1b

(a) Refer to Figure 1a.

   (i)   Identify feature X.   (1 mark)

   (ii)   With evidence from the figure, explain how erosion may lead to the formation of feature X.
                                                                                 (4 marks)

(b) Refer to Figure 1a.

   (i)   With reference to the physical conditions at site Y, account for the occurrence of the
          geological hazard.   (5 marks)

   (ii)   Explain how human factors would lead to the occurrence of this geological hazard.   (4 marks)

(c) Refer to Figure 1a and Photograph 1b. Discuss whether the slope management strategy is an
     appropriate measure to enhance slope safety at site Y.   (4 marks)

2. Elective: Weather and Climate

Figure 2a shows the distribution of the major mountain range in South America. It also shows the locations of Intertropical Convergence Zone (ITCZ) in January and July and the locations of areas P, Q and R. Figure 2b shows the climatic conditions of area P. Table 2c shows some information of areas P, Q and R.
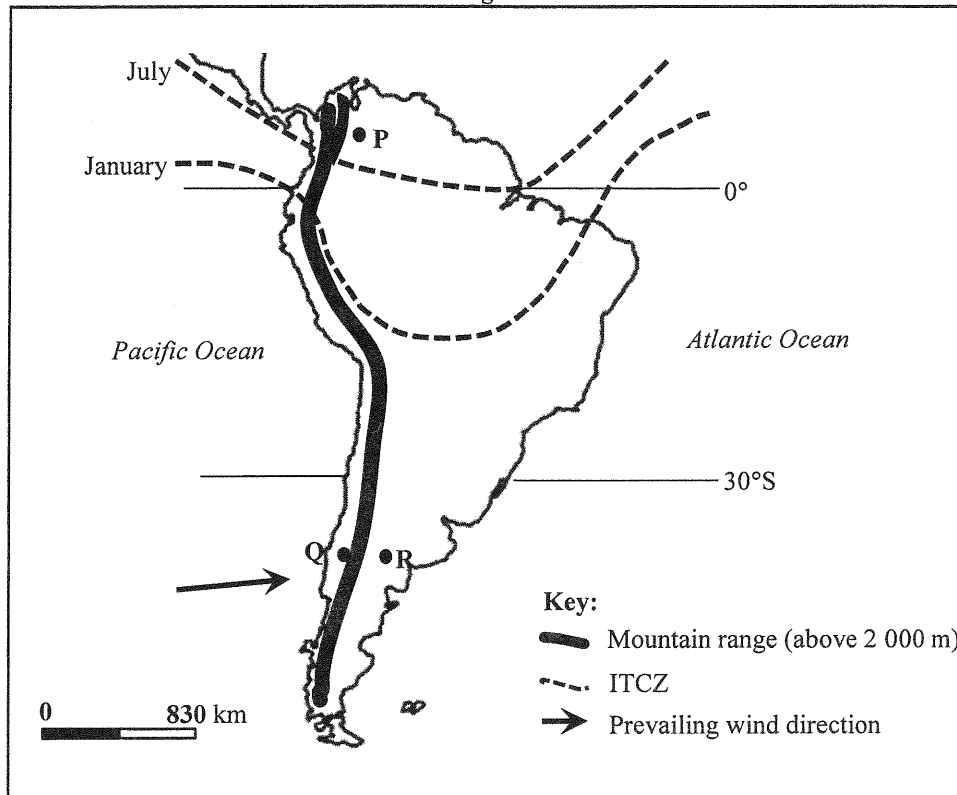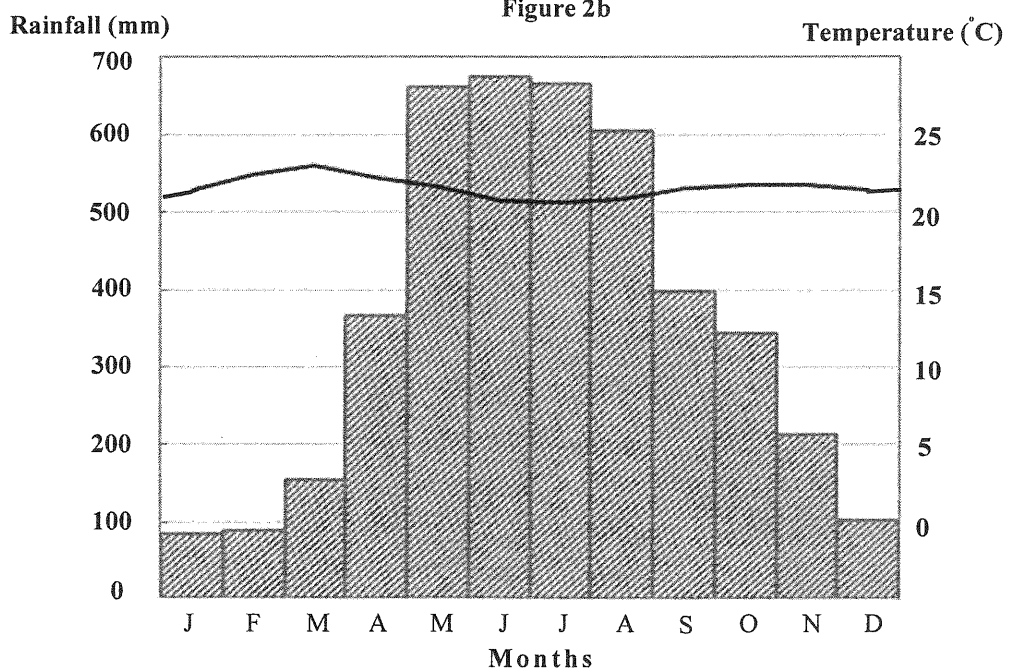
Figure 2a

July

January

P

0°

Pacific Ocean

Atlantic Ocean

30°S

Q

R

Key:

Mountain range (above 2 000 m)

ITCZ

Prevailing wind direction

0   830 km

Figure 2b

Rainfall (mm)

Temperature (°C)

Months

Table 2c

	Area P	Area Q	Area R
Altitude (m)	226	171	241
Annual rainfall (mm)	4 338	3 056	277

(a) Refer to Figure 2a.

    (i) Describe the locations of the ITCZ in January and July.   (2 marks)

    (ii) Explain the occurrence of the ITCZ at the above locations.   (4 marks)

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

    (i) Describe the rainfall pattern of area P.   (2 marks)

    (ii) Explain how the ITCZ affects the rainfall pattern of area P.   (4 marks)

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

    (i) Explain the relationship between relief and annual rainfall of area R.   (2 marks)

    (ii) *Area Q and area R are located at the same latitude, but there is significant difference in annual rainfall.*

        Discuss the relative importance of relief in affecting the annual rainfall of area Q.

          (4 marks)

3. Elective: Transport Development, Planning and Management

Figure 3a shows a sketch map and a photograph of the land use near the MTR Tseung Kwan O Station. Figure 3b shows some information of major transport infrastructure in Tseung Kwan O New Town. Table 3c and Table 3d show some population information of Tseung Kwan O New Town.
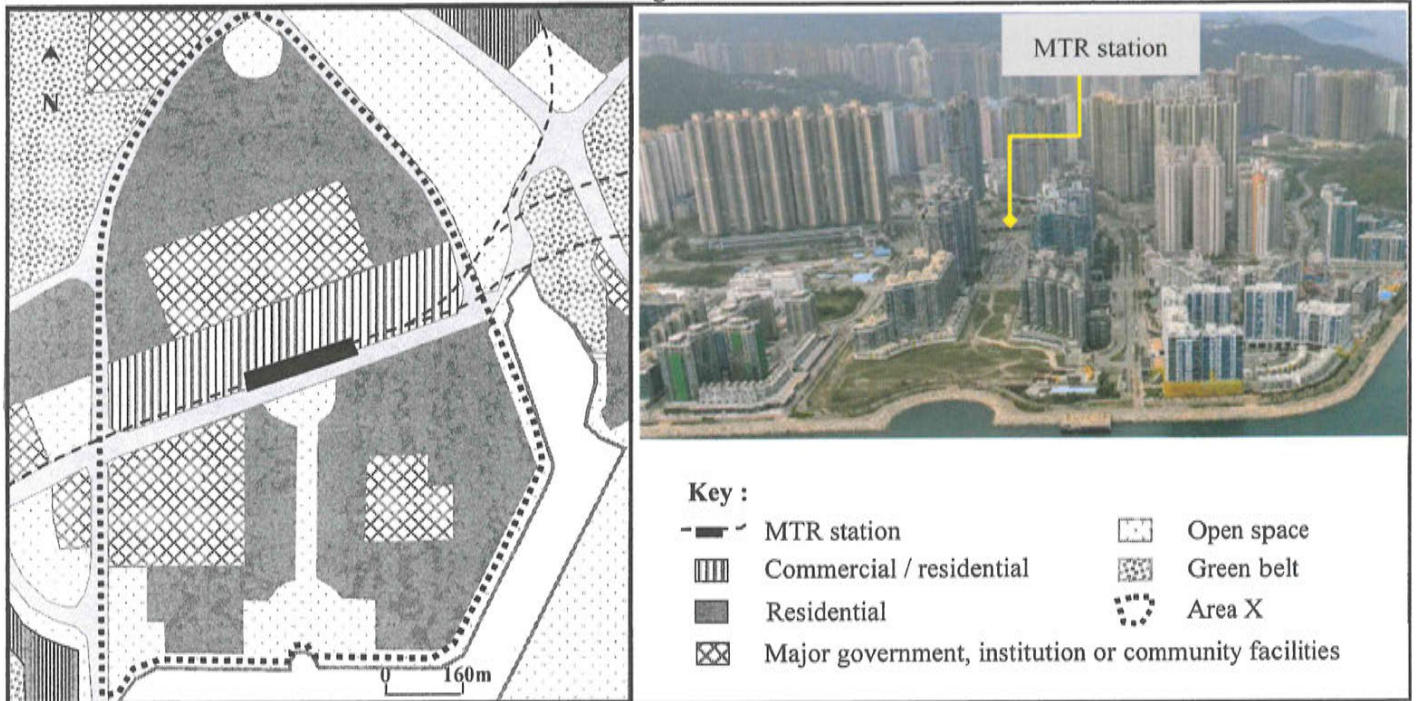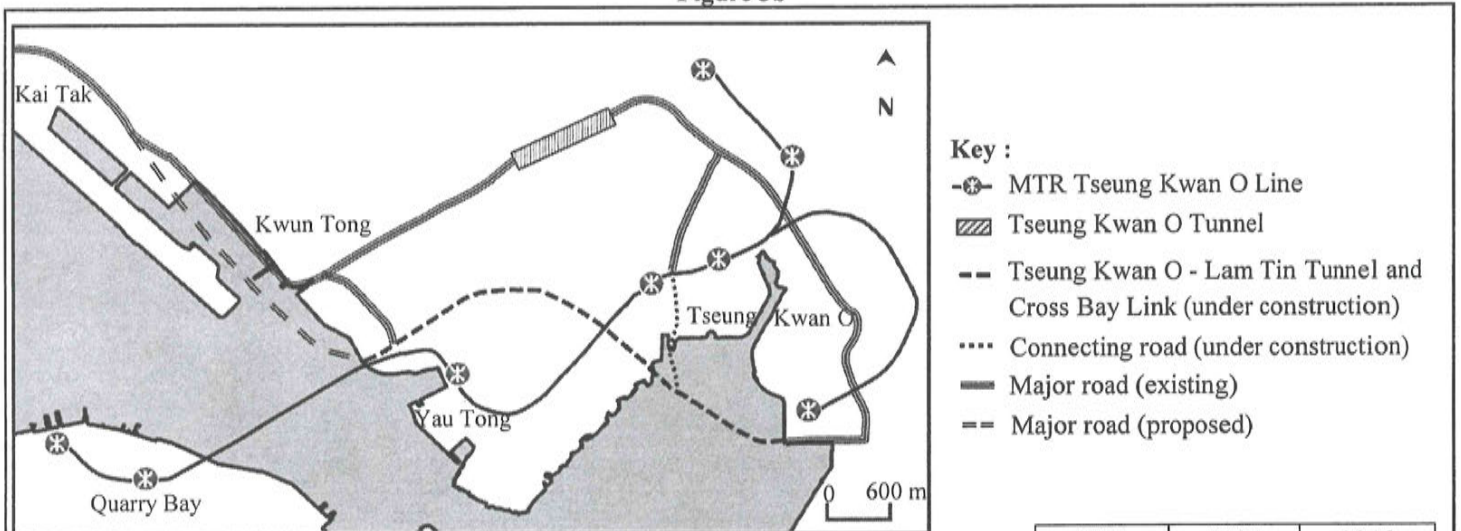
Figure 3a

Key :
- MTR station
- Commercial / residential
- Residential
- Major government, institution or community facilities
- Open space
- Green belt
- Area X

Figure 3b

Key :
- MTR Tseung Kwan O Line
- Tseung Kwan O Tunnel
- Tseung Kwan O - Lam Tin Tunnel and Cross Bay Link (under construction)
- Connecting road (under construction)
- Major road (existing)
- Major road (proposed)

				2001	2004	2018
Tseung Kwan O Tunnel (opened in 1990)	**Design capacity (number of vehicles per day)**				78 500	
	Average daily vehicular flow	**Number of vehicles**		72 200	67 700	93 500
		% of types of vehicles	**Private cars, taxis and motor cycles**	59.1	63.9	75.8
			Buses and others	40.9	36.1	24.2
MTR Tseung Kwan O Line (opened in 2002)	**Loading rate* (%)** *(*4 persons standing per sq. metre)*				No data	100

Table 3c

Population of Tseung Kwan O New Town	
Year	Population
2004	331 000
2018	400 000
2029*	451 600
*Projected figures	

Table 3d

Workplace of the working population in Tseung Kwan O New Town (2016)	
Workplace	Working Population (%)
Tseung Kwan O	9.7
Other districts in Hong Kong	71.0
No fixed place/ Work at home	19.3

(a) Refer to Figure 3a.

   (i) Describe the land use characteristics of area X shown in the sketch map. (3 marks)

   (ii) Explain how the location of the MTR station has influenced the land use characteristics mentioned in (a) (i). (3 marks)

(b) (i) Refer to Figure 3b. Describe and explain the impact brought about by the MTR Tseung Kwan O Line on the vehicular flow of the Tseung Kwan O Tunnel in 2004. (4 marks)

   (ii) Refer to Figure 3b, Table 3c and Table 3d. Describe the changes in the vehicular flow of the Tseung Kwan O Tunnel from 2004 to 2018. Explain the related transport problem. (4 marks)

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

Discuss whether the construction of Tseung Kwan O - Lam Tin Tunnel and Cross Bay Link to improve the transport network is a sustainable transport development. (4 marks)

4. Elective: Regional Study of Zhujiang (Pearl River) Delta

Table 4a shows some information of the Zhujiang Delta Region in 2000 and 2019. Table 4b shows some information of Shenzhen in 2000 and 2019. Figure 4c shows the concentration of some air pollutants in Shenzhen in 2000, 2010 and 2019.
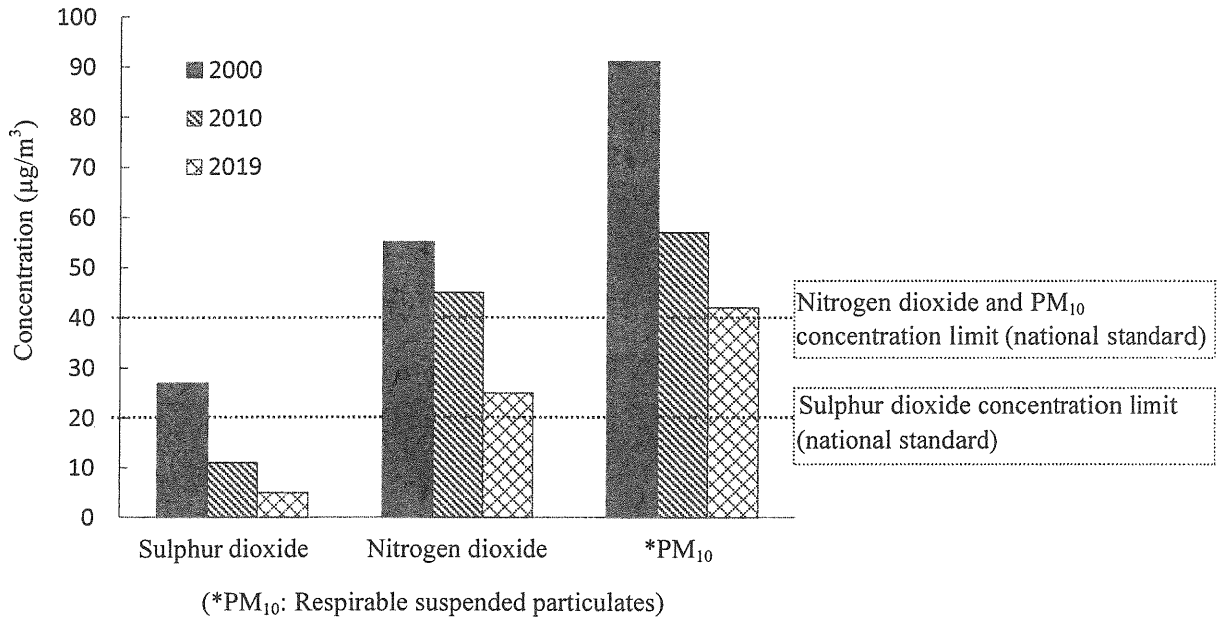
Table 4a

		2000	2019
Urbanisation (%)		71.6	86.3
Employment structure (%)	Primary industry	33.9	1.6
	Secondary industry	32.0	41.3
	Tertiary industry	34.1	57.1

Table 4b

		2000	2019
Population ('0 000)		701.24	1 343.88
Urbanisation (%)		92.46	99.52
Employment structure (%)	Primary industry	1.3	0.001
	Secondary industry	57.0	39.7
	Tertiary industry	41.7	60.2
Value of economic output (hundred million RMB)	Primary industry	22.19	26.93
	Secondary industry	1 165.08	10 501.57
	Tertiary industry	1 031.93	16 398.6
Types of industry with higher value (percentage share in total industrial output)	Electronic and communication equipment manufacturing	44.3	59.9
	Electrical machinery and equipment manufacturing	6.7	7.8
	Rubber and plastic products	4.5	3.1
	Metal products	4.0	1.6
	Textile, garment and related products manufacturing	2.2	0.98

Figure 4c

(*PM$_{10}$: Respirable suspended particulates)

(a) Refer to Table 4a. Describe and explain the relationship between the changes in urbanisation level and employment structure in the Zhujiang Delta Region in 2000 and 2019. (5 marks)

(b) Refer to Table 4a and Table 4b. The changes in the employment structure in Shenzhen were different from the overall changes in the Zhujiang Delta Region in 2000 and 2019.

    (i) Describe these differences. (2 marks)

    (ii) With evidence from Table 4b, explain the changes in the employment structure of secondary industry and tertiary industry in Shenzhen. (5 marks)

(c) Refer to Table 4b and Figure 4c.

    (i) With reference to the national standards shown in Figure 4c, describe the changes in the concentration of different air pollutants in Shenzhen from 2000 to 2019. (2 marks)

    (ii) With reference to the percentage changes in the total industrial output in 2000 and 2019 as shown in Table 4b, discuss the relative importance of these changes in affecting the air pollutant concentration in Shenzhen. (4 marks)

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

5.   **Elective: Dynamic Earth**

Describe the characteristics of siltstone found in Hong Kong and explain its formation process.   Comment on the significance of sedimentary rock in shaping the physical landscape of Hong Kong.

(12 marks)

6.   **Elective: Weather and Climate**

Describe the conditions favouring the formation of typhoons and explain their formation process.   Discuss the relationship between monsoon winds and the development of typhoons in the South China region.

(12 marks)

7.   **Elective: Transport Development, Planning and Management**

Describe the factors influencing the modal choice of sea and air freight transport.   Explain how multi-modal freight transport is adopted in Hong Kong.

(12 marks)

8.   **Elective: Regional Study of Zhujiang (Pearl River) Delta**

Describe the changes in agriculture in the Zhujiang Delta Region since the 1980s.   Discuss the relative importance of the development of agricultural technology in affecting these changes.

(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.