

LIBERAL STUDIES (ENVIRONMENTAL STUDIES) AS-LEVEL

8.30 am – 11.00 am (2½ hours)

This paper must be answered in English

1. This paper consists of **Section 1** and **Section 2**. Section 1 carries 75% of the module marks, and Section 2 carries 25%.
2. **Section 1** consists of three questions, *all* of which are to be answered. **Section 2** consists of four questions, of which candidates may attempt any *one*.
3. Each question carries 25 marks: 20 marks for content and 5 marks for effective communication.
4. Candidates are reminded that this subject emphasises the ability to present and support points of view in a clear, concise and logical manner, rather than the ability to recall facts.

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

SECTION 1

Answer *all* the questions in this section.

1. Consider the following sources:

Source A

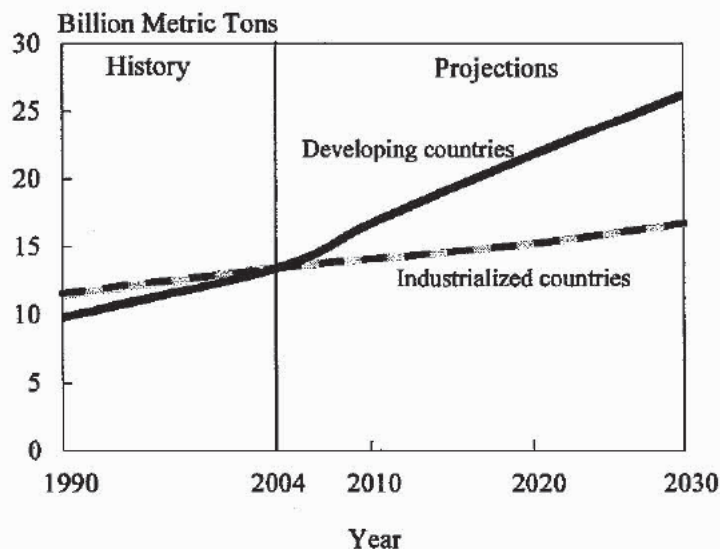
U.S. Accepts Threat to Polar Bears

The U.S. has proposed listing polar bears as a threatened species because of declining Arctic ice levels. The Swiss-based Polar Bear Specialist Group projects a 30% decline in the number of polar bears over the next 45 years. It is the first time the U.S. has made a direct link between global warming and the threat to a species. President George W Bush has constantly refused to back mandatory controls of emissions of carbon dioxide – believed to be the main greenhouse gas behind global warming.

U.S. Secretary of the Interior Dirk Kempthorne said: “We are concerned the polar bears' habitat may literally be melting.” He sidestepped questions about the U.S.'s commitment to reduce greenhouse gas emissions, saying it was not a question for his department. However, he stressed that offshore oil and natural gas developments in Alaska were not contributing to the risk.

Source B

Carbon Dioxide Emissions



- (a) In the light of Sources A and B, identify the threat that polar bears are facing. How optimistic are you that this threat can be reduced? (10 marks)
- (b) Suggest *two* strategies by which this threat could be reduced. What might be the limitations of the strategies you have suggested? (10 marks)

2. The following charts show some of the results of the Source Separation of Domestic Waste Programme 2006 as reported by the Environmental Protection Department. There were two modes of the collection of recyclables – floor-based and ground floor modes. Prior to this programme, household waste was collected on the ground floor only. Also, only waste paper, aluminium cans and plastic bottles were collected from all these households. With the implementation of this programme, a wider range of recyclables, for example, biscuit tins, metal pots, plastic bags, plastic packaging materials, plastic toys and CDs, have been collected using both modes.

Chart A

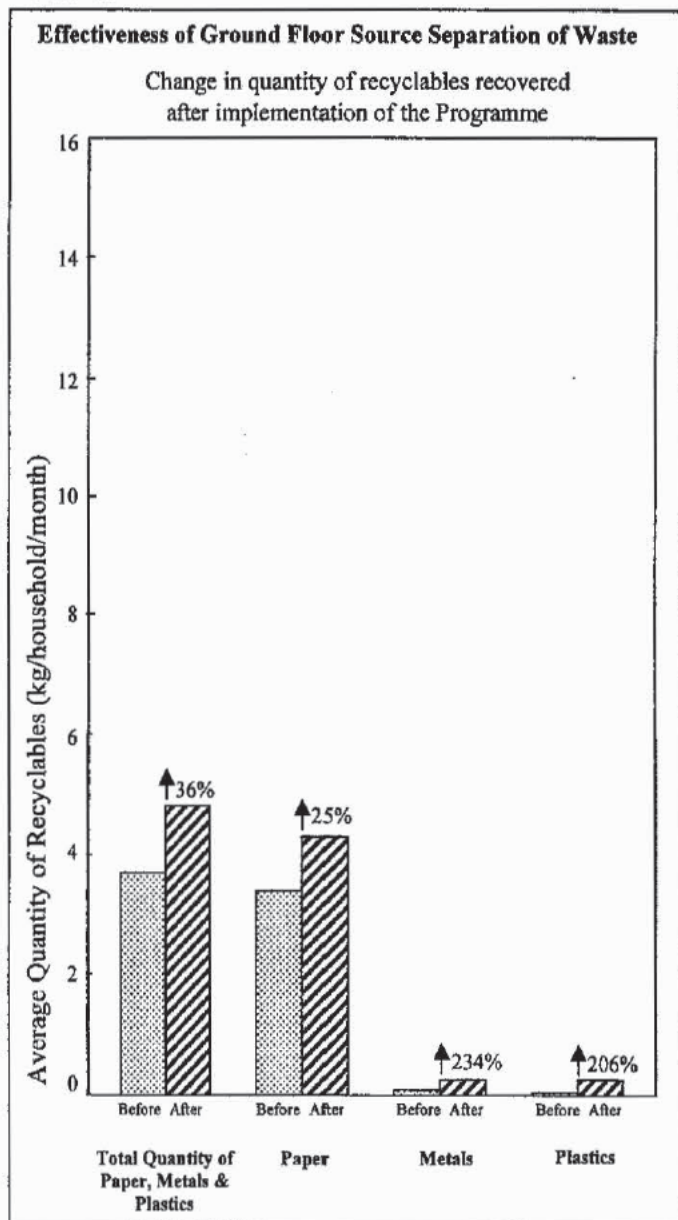
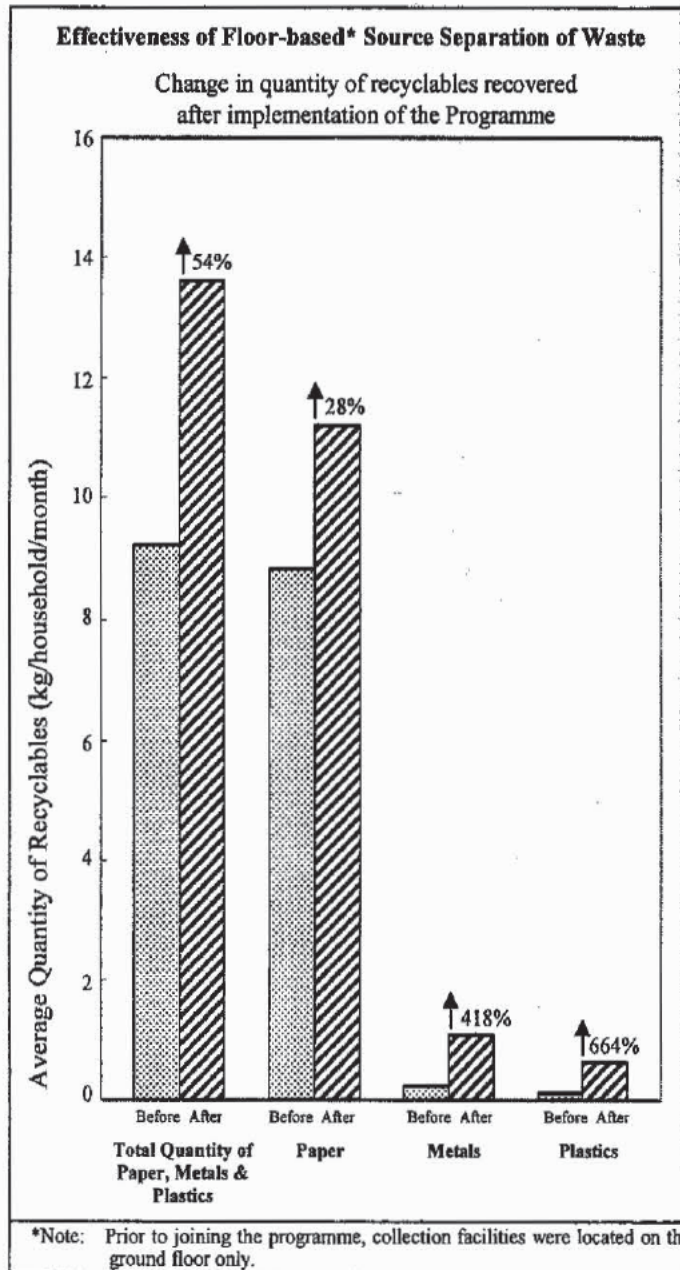


Chart B



- (a) On the basis of the data in Charts A and B, what conclusion can you draw about the relative effectiveness of the two modes of the collection of recyclables? Discuss the limitations of the data for you to make an informed evaluation of the two modes. (10 marks)
- (b) Some members of the residents' association of one of the housing estates that took part in the Ground Floor Source Separation mode of the programme now want to switch to Floor-based Source Separation. Others oppose.

What are the arguments that the proponents and opponents would probably put forward to support their respective positions? (10 marks)

3. Consider the following two articles published within the same week in 2007:

Source A: (Adapted from a newspaper published in China)

**Energy Conservation and Emissions Cuts Begin to Take Effect,
Greater Effort on Environmental Protection**

The policies and measures on energy conservation and pollution reduction have begun to take effect. Our country's efforts on environmental protection are also increasing. While industrialization increases at a rapid rate, our country's emission of major pollutants is under control. Last year, our country's energy consumption for every yuan of gross domestic product (GDP) fell by 1.33%. This is the first drop since 2003. Compared with 2005, the rate of increase in sulphur dioxide emission has slowed down significantly in 2006.

However, in the first half of this year, the state's targeted reduction in energy consumption was not achieved, except in Beijing. This shows that there will be great difficulty in achieving the targeted 20% reduction in energy consumption per unit GDP between 2005 and 2010. Therefore, government departments and citizens throughout the country need to work harder. In order to slow down the growth of industries that are highly polluting, energy-intensive and resource-dependent, the state has abolished the export tax refund for 553 commodities from these industries, and reduced the export tax refund for 2 268 similar commodities.

Source B: (Adapted from a newspaper published in the U.S.)

As China Roars, Pollution Reaches Deadly Extremes

China's pollution problem has become the world's problem. Sulphur dioxide and nitrogen oxides spewed out by China's coal-fired power plants fall as acid rain on Seoul and Tokyo. Much of the particulate pollution over Los Angeles originates in China, according to the Journal of Geophysical Research.


The government has numerical targets for reducing emissions and conserving energy. And environmental regulation in Beijing, Shanghai and other leading cities has been tightened ahead of the 2008 Olympics. Yet most of the government's targets for improving energy efficiency, as well as air and water quality, were not met. Energy use for every dollar of economic output fell, but by much less than the 4% annual goal. And there are ample signs that the leadership is either unwilling or unable to make fundamental changes. Beijing has declined to use the kind of tax policies and market-oriented incentives for conservation that have worked well in Japan and many European countries. Proposals of surcharges on electricity and coal to reflect the true cost to the environment have also been rejected by the Chinese Government.

- (a) Identify the different ways in which the two articles portray China's environmental problems and the strategies to tackle them. Explain why they are portrayed in different ways. (10 marks)
- (b) In the light of these articles, what are the difficulties that China needs to overcome in order to reduce its impact on global environmental conditions? Explain your answer. (10 marks)

SECTION 2

Answer *one* question from this section.

4. The following species is on the 2007 list of threatened species compiled by The World Conservation Union:

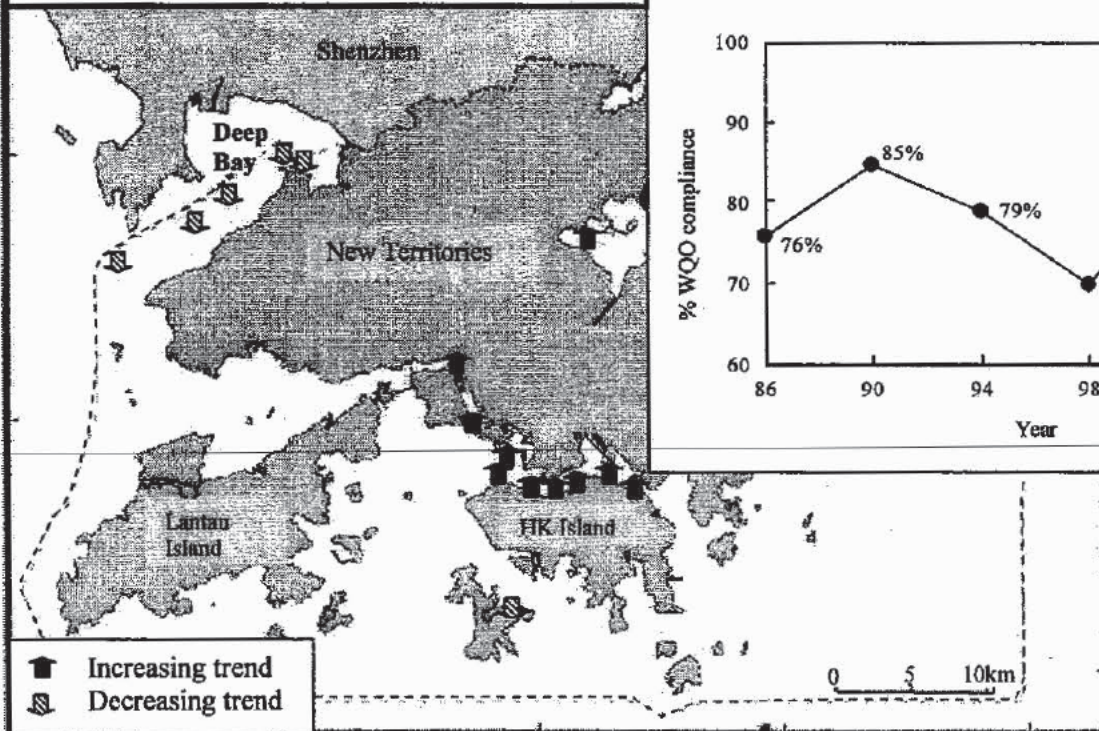
<p>Sumatran Orangutan</p> <p><i>Key facts:</i></p> <ul style="list-style-type: none">● Remains in the Critically Endangered category● Population now restricted to Aceh in Sumatra, Indonesia● Population decreased by more than 80% over the last 75 years (The rate of population loss slowed dramatically during an earlier civil conflict, but a peace deal in 2005 led to political stability and more applications for logging and oil palm plantations.) <p><i>Threats:</i></p> <ul style="list-style-type: none">● Both legal and illegal logging● Wholesale conversion of forest to agricultural land and oil palm plantations● Fragmentation of orangutan populations by roads● Illegal hunting and capture of them for the international pet trade● Killed as pests when they raid fruit crops at the forest edge● Occasionally hunted for food <p><i>Conservation measures:</i></p> <ul style="list-style-type: none">● Trade in this species prohibited by an international convention● Species strictly protected under Indonesian domestic legislation● Large areas of primary forest protected by the Indonesian Government	
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- (a) Referring to the information above, to what extent are the conservation measures an appropriate response to the threats faced by the Orangutan? (10 marks)
- (b) What might be the socio-economic and political factors that undermine the effectiveness of these measures? (10 marks)

5. Consider the following sources:

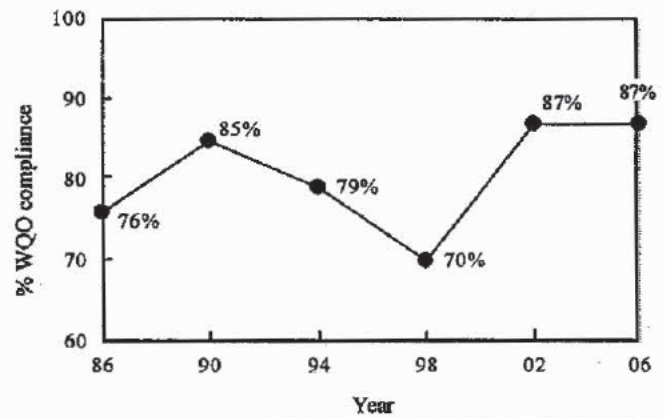
Source A1

Long-term changes in dissolved oxygen in marine waters of Hong Kong, 1986-2006



Source A2

Overall compliance with the marine Water Quality Objectives (WQO) in Hong Kong, 1986-2006



Source B

Guangdong's Polluted Seas Put HK at Risk

Guangdong's coastal waters have been turned into a huge rubbish dump with massive amounts of pollution being discharged into the sea, according to a Mainland official report. It stated that the amount of pollution discharged into the waters off Guangdong had increased by 60% between 2002 and 2007. Furthermore, it claimed that Hong Kong was badly affected by pollution carried by the currents from Guangdong.

While sewerage projects might be effective in the urban areas of Guangzhou and Shenzhen, in rural areas, huge amounts of pollution and sewage were discharged directly into the sea. Most pollutants came from household waste and economic production activities.

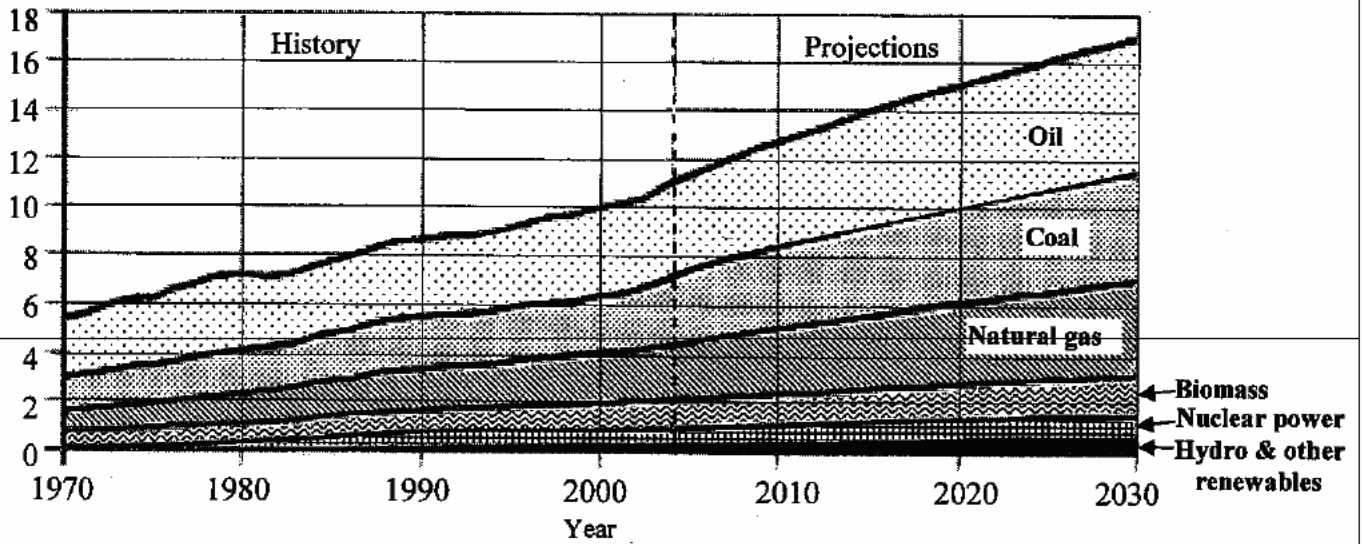
Sea pollution did not receive as much attention as river pollution in Guangdong – government spending on treating sea pollution was only 10% of that on rivers. However, Mainland officials recognised the need to clean up rivers, which are sources of pollution to the sea.

- (a) Based on the above sources, evaluate how successful Hong Kong has been in improving the quality of its coastal waters. (10 marks)
- (b) The Hong Kong Environmental Protection Department has set a target to “restore Deep Bay to a clean and healthy state by 2015”. Suggest and justify strategies and policies that would need to be implemented if this target is to be met. (10 marks)

6. Consider the following graph:

World Primary Energy Demand

Billion Metric Tons of Oil Equivalent



- (a) Discuss the key socio-economic factors shaping the trend and pattern of global energy demand as shown in the graph. (10 marks)
- (b) To what extent could this trend and pattern be modified so as to achieve a more sustainable use of energy? (10 marks)

7. Study the following cartoon entitled "U.S. Mine of Natural Resources" which was first published in 1938:



- (a) What is the principal message of the cartoon? (8 marks)
- (b) In what ways does the cartoon reflect or not reflect the situation of the world today? Explain your answer with examples. (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.

2008-AS-LS (ES)-8

Marking Scheme

These documents were prepared for markers' reference. They should not be regarded as sets of model answers. Candidates and teachers who were not involved in the marking process are advised to interpret their contents with care.

Content

(Note: In the assessment process, markers should first determine an appropriate grade for an answer based on 3 factors, viz. understanding of the question, content and approach, and then convert that grade into a corresponding mark according to the following table.)

Criteria	Grade
<ul style="list-style-type: none"> • Well-balanced answer which shows a full understanding of the demands of the question. • Analytical in approach and critical in the use of supporting evidence. • Arguments are cogent and effectively supported. • Free from <i>major</i> inaccuracies/inconsistencies and important omissions. <p><i>(Note : Answers in this category need NOT be 'perfect' – they may contain minor flaws in content or approach.)</i></p>	A
<ul style="list-style-type: none"> • Acceptably balanced answer which shows a good understanding of the demands of the question. • Predominantly analytical in approach. • Arguments are mostly coherent and well substantiated. • Contains occasional inaccuracies and minor omissions. 	B
	C
<ul style="list-style-type: none"> • Shows a general understanding of the demands of the question and a conscious effort to address the question, but the answer lacks balance. • Shows some attempt to analyse the relevant issues, but the scope and depth of analysis are rather limited. • Arguments tend to be inadequately sustained and exemplified. • Marred by inaccuracies, omissions and inconsistencies. 	D
	E
<ul style="list-style-type: none"> • Shows inadequate understanding of the question and/or a weak knowledge of the subject matter. • Unduly narrative and weak in analysis. • Arguments tend to be assertive and not substantiated. • Containing fundamental errors/major inconsistencies/gross irrelevancies. 	E/F
	F
<ul style="list-style-type: none"> • Shows a total misunderstanding of the question and a failure to distinguish between relevant and irrelevant material. • Narrative in approach and lacking in analysis. • Overwhelmingly assertive and fragmentary. • Totally inadequate, containing little that is accurate, relevant or worthwhile. 	U

Effective Communication

— The criteria for awarding markings for effective communication are :

- > whether the argument is logically and systematically set out;
- > whether it is easy to understand the arguments relevant to the question; and
- > whether the language is effectively deployed in the communication of relevant idea and viewpoints.

(Note : Grammar and spelling are only important insofar as they enhance or hinder communication.)

— Markers are advised to use the following grade-mark equivalence scale when awarding marks for effective communication:

Grade	A	B	C	D	E	F	U
Mark	5	4	3	2	2	1	0

2008 AS Liberal Studies

Environmental Studies

Question Number	Popularity %	Performance in General
1	Compulsory	Satisfactory
2	Compulsory	Fair
3	Compulsory	Good
4	54	Quite Good
5	10	Good
6	24	Satisfactory
7	12	Fair

Section 1

- Q.1 (a) Most candidates demonstrated understanding of the issue of global warming. They were able to make use of the given data on the projection of carbon dioxide emissions to discuss whether they were optimistic about the reversal of the global warming trend. However, only a small number of the candidates were able to direct their discussion to the threat on the living environment of polar bears.
- (b) Many candidates mixed up 'strategy' with 'measures'. Only a minority of candidates were able to make a connection between the strategies they put forward and the threat to the habitat of polar bears. Instead of assessing the limitations of the strategies in reducing the threat, most of them just elaborated on the problems brought about by the strategies.
- Q.2 (a) Most candidates had difficulties in understanding the data charts. They were not able to draw conclusion on the relative effectiveness of the modes of collection with reference to the data. Nevertheless, most candidates were able to point out the limitations of the data provided for making an informed evaluation.
- (b) Quite a number of candidates were able to discuss the pros and cons of the modes of collection. However, only some of the candidates were able to discuss the arguments from the perspectives of the residents.
- Q.3 (a) Most candidates were able to quote the data from the two articles to delineate some differences in the portrayals of China's environmental problems, but not that of its strategies. This reflected that most candidates failed to interpret the strategies mentioned in the articles. However, candidates in general were able to analyse some of the possible reasons underlying the different viewpoints of the writers.
- (b) Whilst many candidates were able to recognize the focus of the question and explain the difficulties which China should overcome, some candidates went off on the wrong track, elaborating on the measures China needs to adopt to reduce the impact. They were not able to discuss the difficulties in relation to the reduction of the impact on global environmental conditions.

Section 2

- Q.4 (a) A majority of the candidates were able to match the conservation measures with the corresponding threats to the Sumatran Orangutan. However, only a small number of candidates were able to evaluate the appropriateness of the conservation measures based on the information provided.
- (b) Most candidates were able to analyse generally the socio-economic factors undermining the effectiveness of the measures. However, only a small proportion of candidates were able to provide well-rounded answers by discussing the political factors.
- Q.5 (a) Most candidates were able to present a clear stand point. Some of them, however, failed to realize the decreasing trend of water quality in Deep Bay and did not evaluate the specific measures adopted by the government to improve the water quality.
- (b) Many candidates were able to suggest measures to achieve the target of restoring coastal water to a clean and healthy state. Nevertheless, some of their suggestions targeted Hong Kong as a whole, instead of focused on the situation of Deep Bay. Some candidates were weak in justifying their suggestions.
- Q.6 (a) Most candidates were able to discuss the trend of global energy demand. However, they failed to understand the global energy demand pattern, thus providing answers which were not well-balanced.
- (b) Many candidates just focused on discussing the use of renewable energy resources. They were not able to present analytical arguments for ways to achieve a more sustainable use of energy.
- Q.7 (a) Most candidates were able to identify and elaborate on the key message of the cartoon generally and superficially. Many of them neglected the discussion on the impact of waste.
- (b) Many candidates were able to discuss incidents and issues of the world today which were not reflected in the cartoon. However, some candidates showed an inadequate understanding of the concept of 'natural resources'.

General comments

Candidates' performance in general fell between satisfactory and good. They demonstrated a basic understanding of some environmental issues and concepts, like global warming and endangerment to species. However, there is still room for improvement with regard to their analytical and evaluative skills, the application of concepts and utilisation of data from the question in formulating arguments. Furthermore, candidates should read questions more carefully and address the central concern of questions directly.
