

**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 is worth 25 marks : 18 marks are allocated for content and 7 marks for effective communication.
4. The maximum content marks are indicated in brackets at the end of each question and sub-question. They are a guide to the length of answer required, which may vary from one to several paragraphs.
5. 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 recite facts.

## SECTION 1

Answer *all* questions in this section.

1. Consider the following information :

<b>Hong Kong Waste Recycling Statistics (2000)</b>			
Local municipal solid waste recovered : 13% recycled locally & 87% outside Hong Kong			
<b>Quantities of Major Recyclable Wastes Recovered (thousand tonnes)</b>			
Waste type	Recycled locally	Exported for recycling	Total
Paper	182	644	826
Plastics	14	151	165
Ferrous metals	0	637	637
Non-Ferrous metals	17	76	93

<b>Recovery Rates of Common Recyclable Materials (in percentage)</b>					
Country/ Region	Year	Paper	Plastics	Metal	Glass
Hong Kong	1998	53%	35%	85%	4%
Australia	1995	50%	42%	65% (Aluminium can) 23% (others)	42%
Japan	1997	53%	11%	60%	55%
USA	1996	41%	5%	40%	26%
Germany	1995	87%	70%	65%	78%

Source : Environmental Protection Department, 2001

<p style="text-align: center;"><b>Pay as you weigh</b></p> <p>Several countries, including Switzerland and Germany, have 'pay-as-you-weigh' schemes for household rubbish — the more that is collected, the more you pay. In Florida, USA, household rubbish was reduced by one fifth after bins with electronic tags were introduced; these linked the rubbish collected with the address. One whole block saved the equivalent of HK\$100,000 a year by being more careful with what they put out.</p> <p style="text-align: right;">(Extracted from a British newspaper dated 24 May 1999)</p>
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- (a) By examining the two tables on recycling, comment on and explain the performance of Hong Kong. (12 marks)
- (b) Read the newspaper extract and evaluate how far the suggestion for household rubbish would be useful in Hong Kong. (6 marks)

2. Consider the following extract from a local newspaper dated 4 September 2001 :

### **New golf courses : a green-belt shortcut**

Beijing has approved the building of five golf courses close to the city. The purpose is to quickly increase greenery around the capital with minimum government spending.

During bidding for the 2008 Olympic Games, Beijing announced plans to develop more than 23,000 hectares of green areas along main rivers and roads and 12,000 hectares of forest to separate the city from the surrounding area.

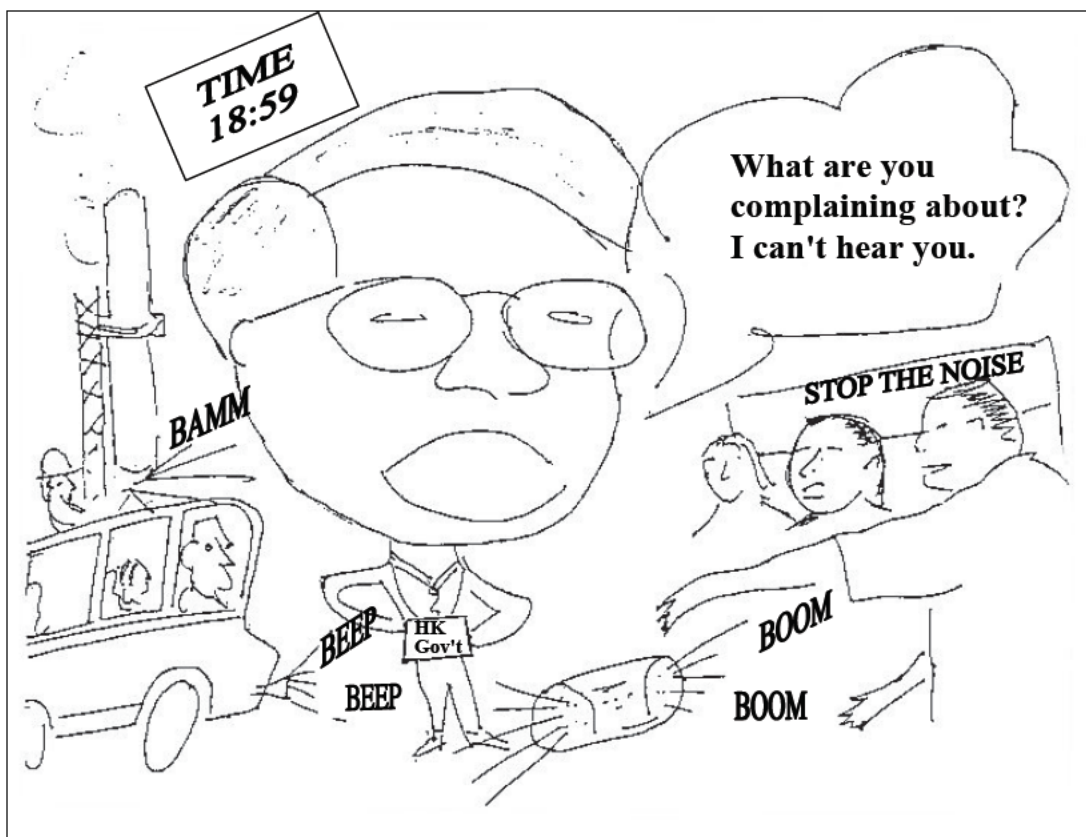
A spokeswoman for the China Golf Association said that the more convenient location of the new courses would help attract more people to the sport.

However, a local scientist who conducts research on the environment and who has been a campaigner against golf courses in the area claims the projects would damage Beijing's environment. 'The special grass used by golf courses consumes several times the amount of water that a normal lawn does. So it is not suited at all to a drought-stricken city like Beijing,' said the scientist.

The scientist also said that the excessive amount of herbicides needed to maintain a golf course could be harmful to people's health and the area's biodiversity.

- (a) With reference to the newspaper extract, explain the clash of values that is occurring in this case. (12 marks)
- (b) What do you think the Beijing city government should do? Justify your answer. (6 marks)

3. Consider the following information :



**Enforcement Data Under the Noise Control Ordinance in 2000**

Source of Noise	Number of Prosecutions	Average Fine (HK\$)	Range of Fines (HK\$)	Maximum Possible Penalty
Construction	404	24,276	1,000–200,000	HK\$100,000 on first offence then HK\$200,000 for each further offence
Industry & Commerce	65	14,428	2,000–115,000	
Domestic/neighbourhood	50	739	100–2,000	HK\$10,000
Intruder alarms	3	683	450–1,000	HK\$10,000 & 3 months in prison

Source : Environmental Protection Department, 2001

- (a) Identify the problem shown in the cartoon and explain the nature of the problem. (8 marks)
- (b) Comment on the data shown in the above table. What suggestions would you make and for what reasons? (10 marks)

## SECTION 2

Answer *one* question from this section.

4. Consider the following information :

### New Territories, new railway, new towns

#### KCRC seeks extra property rights

The Kowloon-Canton Railway Corporation (KCRC) has asked the Government for extra property development rights as a part of urban development at the Lok Ma Chau spur line station in Kwu Tung to help cover Long Valley tunnel costs.

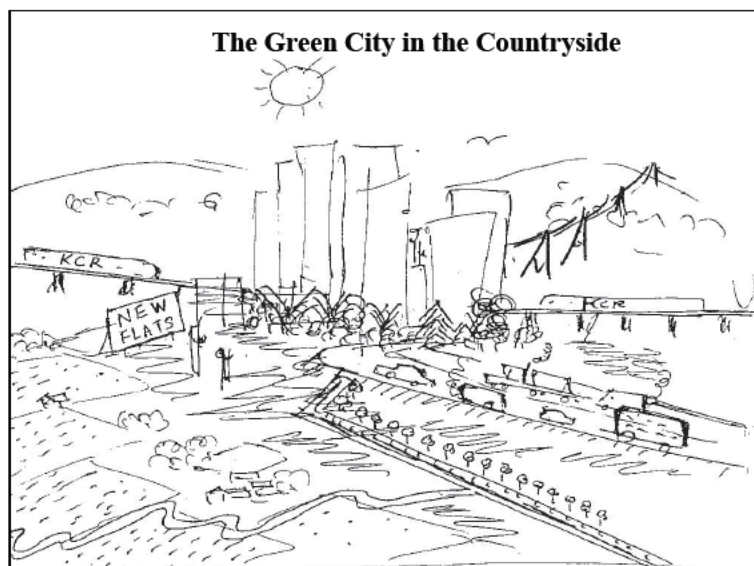
(Extracted from a local newspaper dated 19 September 2001)

#### Long Valley tunnel on track despite \$2b cost increase

The Government has backed plans for a rail tunnel under Long Valley, costing HK\$2 billion more and taking up to two years longer than the defeated plan to build a spur line across the ecologically sensitive wetlands.....Green groups such as Green Power and Friends of the Earth warned of complacency, saying that although the tunnel would leave birds relatively unharmed, it required tough monitoring as construction might lead to noise and air pollution.

(Extracted from a local newspaper dated 19 September 2001)

**KCRC promises to bring green living to people working in the city** by building new towns along the 'West Rail' railway in the New Territories. The KCRC proposes building towns with new residential and commercial areas as well as providing open spaces for leisure.



- (a) Identify and explain *three* adverse effects that such 'green' urban development might have on the environment. Discuss how any problems created by these effects could be solved. (10 marks)
- (b) What planning controls would you suggest for these new urban developments? Justify your suggestions. (8 marks)

5. Consider the following newspaper extract :

### **Power Giant Explores Wind Power on Outlying Islands**

Residents on the Special Administrative Region's (SAR) many tiny islands will be happy if a new project from the unlikely pairing of Friends of the Earth and Hongkong Electric takes off. The power company has commissioned the Friends of the Earth to conduct a HK\$1 million exploratory project on wind power.

They hope to persuade the Government or private developers to invest in wind power.

Friends of the Earth researcher Eric Walker said the group would lead the way because the Government had been reluctant to take initiatives. 'We are extremely frustrated by the Government in terms of how it handles the energy issues of the SAR. It acts too slowly until the top management of a private company realises why it is important. And now we finally have a new source of commitment,' he said.

A government study concluded that wind power as a renewable energy source had no role to play in Hong Kong before 2005. However, the Government recently commissioned a consultant to examine renewable energy and has also pioneered a pilot test of solar power in government buildings. A Hongkong Electric spokeswoman said, 'Renewable energy is a world trend and we just want to see if it could be applicable in Hong Kong.'

Wind-generated electricity is more expensive than that from fossil fuel because it needs more capital investment to produce the same unit of power. Mr Walker said the cost would be offset by savings from pollution and health care costs.

Hongkong Electric relies primarily on coal to produce electricity. Further, the Government has recently approved power company plans to build a natural gas power plant on Lamma Island.

(Extracted from a local newspaper dated 27 December 2000 and 5 March 2001)

- (a) Why did the writer of this article use the expression 'unlikely pairing' when referring to Friends of the Earth and Hongkong Electric? (8 marks)
- (b) What is the major issue raised by the pairing of these two groups, and why does Friends of the Earth advocate a more capital intensive energy source than fossil fuel? (10 marks)

6. Consider the following data about Hong Kong's food supply :

### What Do We Really Eat?

In 1997, a total of 341,170 metric tonnes of rice and grains was consumed in Hong Kong. The total energy used to produce and transport the food was 4,465 TJ (terra-joules). The following table shows the types and percentage of energy used in the process of production and transportation.

Item	Percentage of total energy (4,465 TJ)	Composition of energy source (%)		
		Oil	Coal	Electricity
Farm Operation	61	85	0	15
Chemical Fertiliser	30	60	40	0
Transport to Hong Kong	9	100	0	0

Source : *Agenda 2047 (II)*, Friends of the Earth (Hong Kong), 2000.

- (a) In the past, the energy supporting human nutrition came entirely from photosynthesis. In view of the information given above, explain whether we are still 'eating sunlight'. (9 marks)
- (b) It takes approximately eight Joules of energy to place one Joule of rice on the dinner table. How 'sustainable' is this practice and what if anything would you do about it? (9 marks)



7. Consider the following information :

### The Information Age



Source : Environmental Protection Department

In terms of physical devices, the modern information age could be described as the age of the telecommunications machine. In Hong Kong, nearly every home and office has at least a cell phone, a FAX machine, a personal computer, a TV, a VCR, or a stereo system. Even if it is very reliable and never breaks down, typically after three to five years, the device is considered technologically obsolete. It is often discarded when the owner wants to get rid of it.

- (a) In terms of obsolete telecommunications devices, explain what the environmental problem for Hong Kong will be. (6 marks)
- (b) Some environmentalists suggest that a manufacturing company selling telecommunications devices in Hong Kong should bear the legal responsibility to take back the discarded devices. How would this help alleviate the problem you identified above? What are some of the advantages and disadvantages of this suggestion? (6 marks + 6 marks)

**END OF PAPER**