

Environmental Management

12

Multiple Choice Answers

1	C	6	D	11	B	16	C
2	C	7	B	12	D	17	B
3	A	8	A	13	A	18	B
4	A	9	A	14	C	19	D
5	C	10	D	15	B	20	B*

Short Answer Questions

Question 1

- a) Ecologically sustainable development involves the use of environmental resources for economic growth at a rate which is consistent with their conservation and regeneration.
- b) The government may choose to tax products which pollute, which will discourage the use of the polluting products. Alternatively the government may choose to subsidise an environmentally friendly substitute, which will encourage consumers to abandon the polluting product in favour of the alternative.
- c) Many environmental resources are public goods which are non-rival and non-excludable. Because of these characteristics, they are liable to overuse which can lead to their degradation – known as the tragedy of the commons. This means that environmental resources such as the atmosphere and waterways can be freely exploited which leads to their degradation.
- d) In the short term, there is a conflict between the goals of economic growth and environmental management. Excessive levels of economic growth will involve intensive use of resources, which may lead to environmental degradation. Also, environmental management in the short run decreases the potential level of economic growth since it involves conserving resources rather than using them in the production process. However, in the long run, environmental management can lead to higher sustained levels of economic growth. Unless the environment is properly managed, excessive resource use can lead to resource depletion which ultimately means that there will be fewer resources in the future. Also, with higher levels of economic growth in the long run, there will be more governmental resources available to develop environmentally friendly technologies and to conserve natural resources.

* Option D is clearly incorrect irrespective of whether or not the concert is in the open air.

Question 2

- a) An externality is an unintended consequence of production or consumption.
- b) Atmospheric pollution.
- c) Car usage can create an increase in social health care costs.
- d) The main reason for market failure is the fact that prices are determined by individual interactions between buyers and sellers in the market. Each buyer will base their demand on the private benefit they can receive from the product. Each seller will set their price to cover their private costs (the factors of production). However, social costs and benefits are not taken into account in private transactions. If there are any unintended consequences which affect society but not the individual at the time of purchase, it will not be taken into account by the price mechanism. Hence market failure can lead to negative externalities since they are not taken into account by the price mechanism.
- e) Negative externalities can lead to environmental degradation because they are not taken into account in the price mechanism. For example, the consumption of petrol produces negative externalities such as carbon emission and atmospheric haze. If this were taken into account in the price mechanism, the purchaser would have to pay a higher price for the use of petrol, which would discourage petrol consumption. However, since the price mechanism does not take into account negative externalities, there is no additional financial cost to the producer or the consumer for the social costs created. Hence there is likely to be overuse of products with negative externalities, resulting in environmental degradation.

Question 3

- a) A public sector good is one which is provided by the government, whereas a public good is merely one with the characteristics of being non-rival and non-excludable. They are not necessarily provided by the government.
- b) Public goods and non-rival, which means that one person's enjoyment does not diminish the ability for another person to simultaneously enjoy the product; and non-excludable, which means that it is not possible to exclude persons from the use of the product. An example of a public good is a lighthouse, since multiple ships can see the light simultaneously, and it is not possible to prevent a ship which has not paid to see the lighthouse from being able to see it.
- c) Since public goods and non-rival, it is impossible to assess the degree of enjoyment which a person receives from the use of the product. Additionally, because public goods and non-excludable, it is impossible to prevent non-paying persons from accessing and obtaining the same level of enjoyment as paying persons. As a result, there is no ability to make a profit from the provision of public goods and so private firms would be unwilling to provide them.
- d) The government can correct market failure by intervening in the market either by discouraging the use of a product or encouraging the use of alternatives. At the one extreme, the government could ban a product with high social costs, preventing any use. The government could also impose a tax on the product to include on top of the private costs of the product an approximation of the public costs, thereby discouraging the use of the product. This could also be achieved through the use of a quota. On the other hand, the government could subsidise products which have social benefits which are not taken into account by the price mechanism, thereby reducing their price and increasing their quantity. The government may also directly provide products that the private sector may be unwilling to provide, such as a public transport system or public hospitals. The policy options available to the government can be used in combination, such as a carbon credits trading scheme which involves a tax on carbon emissions which can be traded for carbon credits. If a firm adopts carbon friendly technology, it can sell its carbon credits, effectively obtaining a subsidy relative to other firms.