

Environmental Sustainability

12

Multiple Choice

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

Short Answers

Question 1

- (a) Ecologically sustainable development involves conserving and enhancing the community's resources so that ecological processes and quality of life are maintained.
- (b) The Intergovernmental Panel on Climate Change (IPCC) estimates that climate change could lead to average global temperature rising by 1.1 and 6.4 degrees by the end of this century. One possible impact would be the polar caps melting, resulting in higher sea levels and increased incidence of coastal flooding. Climate change is also likely to lead to an intensification of extreme weather patterns, such as droughts and cyclones. As a result, climate change is predicted to reduce Australia's GDP by 4.8 per cent by 2100.
- (c) There are two relationships between environmental sustainability and economic growth. In the short term, policymakers are conflicted between pursuing growth and managing the environment. This is because rapid increases in economic growth results in exploitation of resources and as a result damage to the environment. In the long-term however, this conflict does not exist. Rather, economic growth in the long term can only be pursued if there are adequate resources of good quality. An environment that is not sustainably managed will not have such resources.
- (d) One recent global initiative to combat climate change is the 2011 Durban Platform. This platform commits to introducing a globally binding agreement to reduce greenhouse gas emissions by 2020 with details to be finalized by 2015. The Durban Platform is significant because both developing and developed economies committed to legally binding reductions for the first time. However, many view the Durban Platform as merely an agreement to attempt to agree and its real success will be only determined once it is operational.

Question 2

- (a) Clean air, defense and streetlights are examples of public goods.
- (b) Public goods are non-excludable and non-rival. This means that every person has equal ability to consume this good and their consumption is not affected by another person's consumption. Private goods are the exact opposite, they are rival and excludable. This means that not every consumer can consume these goods and the ability to consume such goods is influenced by others.
- (c) Public goods are non-excludable and non-rival, meaning that there is an opportunity for free-riding behaviour. This means that consumers are able to benefit from the good without paying for its cost. This behaviour makes private markets reluctant to supply public goods, as they will be unable to charge consumers for enjoying the benefit of that good or exclude those who are unwilling to pay for the provision of that good. Therefore the price mechanism is unable to produce an equilibrium outcome that accurately reflects the forces of supply and demand, and in this sense the market fails.
- (d) The government can correct market failure by banning the production of a product with high social costs, for example – banning leaded petrol. The government could also impose a tax on the product to include an approximation of the social costs on top of the private costs of the product, thereby discouraging use and 'internalising the externalities'. An example of this would be the government imposing a tax on cigarettes. The government could also subsidise products which have social benefits which are not taken into account by the price mechanism, thereby reducing their price and increasing their quantity, such as through providing grants to assist the development of 'green' industries. The government may also directly provide goods that the private sector may be unwilling to provide, such as a public transport system or public hospitals.

Question 3

- (a) An externality is an unintended cost or benefit of an economic activity whose cost is not reflected in the price mechanism.
- (b) Market failure occurs when the price mechanism takes account of private benefits and costs of production to consumers and producers, but fails to take into account the indirect costs of economic activity borne by all of society. The diagram illustrates a situation where the socially optimal price of a good (p_s) – which includes those social costs that arise due to production – is above the market price (p_m) which does not include the costs borne by all of society. Market failure leads to an overuse of resources, where the socially optimal quantity (q_s) is lower than the quantity determined by market forces (q_m).
- (c) Non-renewable resources are natural resources that are finite in supply because they cannot be recreated or regenerated in a short period of time. This means that the existing supply can be exhausted. Examples include coal and oil. The consumption of non-renewable resources needs to be carefully managed to minimise wastage. Conversely, renewable resources can naturally regenerate or replace themselves in a relatively short period of time. Examples include forests and fish. However they can still be over-exploited, and their supply can be depleted to a point where they become non-renewable.
- (d) Negative externalities refer to social costs of production and consumption. They are costs borne by parties not involved in private transactions. Resource depletion occurs when non-renewable resources, which are limited in supply and take significant amounts of time to regenerate, are used at an unsustainable rate so their supply is diminished overtime. In the short term, production that causes negative externalities and resource depletion increases economic growth. This is because private firms do not have to pay for the social costs of production and gain access to cheap resources. This allows them to produce more output than is socially efficient. However, in the long term the presence of negative externalities and resource depletion is socially inefficient, as resources are not being allocated in the most socially optimum manner. As a result, the economy experiences a reduction in the quality and availability of resources. This reduces growth and productivity in the economy and can cause shocks to firms as production patterns will need to be quickly altered to account for the reduction in quantity and quality of resources available.

Skills Revision

- Public Good
- Clean Energy Future Plan
- Free Riding
- Price Mechanism
- Non-Renewable Resources
- Tragedy of the Commons
- Ecologically Sustainable Development
- Negative Externality
- Pollution
- Climate Change
- Market Failure
- Renewable Resources

HSCFOCUS.COM