

國立臺北科技大學 110 學年度碩士班招生考試

系所組別：3220 環境工程與管理研究所乙組

第一節 環境科學 試題

第 1 頁 共 4 頁

注意事項：

1. 本試題共 20 題，每題 5 分，共 100 分。
2. 不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

Question 1

A fossil fuel is best described as

- A. a flammable solid or gas.
- B. a fuel that contains carbon.
- C. a flammable substance formed from ancient biological material.
- D. fossilized rock that will burn in a power station.

Question 2

An example of a non-renewable, non-fossil energy resource is

- A. oil.
- B. coal.
- C. tidal.
- D. uranium.

Question 3Which of the following is **not** a renewable energy source?

- A. biomass
- B. natural gas
- C. solar
- D. wind

Question 4

Which of the following is a greenhouse gas?

- A. helium
- B. nitrogen
- C. methane
- D. oxygen

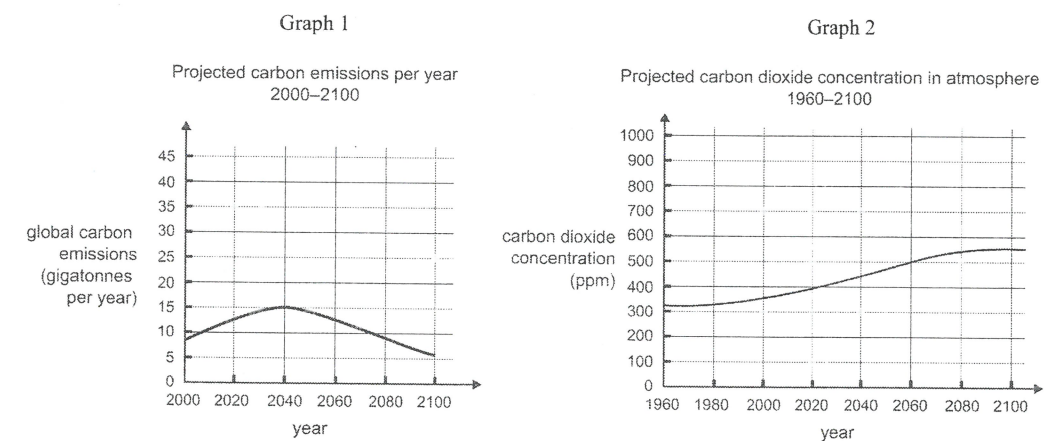
Question 5

The enhanced greenhouse effect is due to

- A. increased trapping of infrared radiation emitted from the Earth's surface and oceans.
- B. decreased trapping of infrared radiation emitted from the Earth's surface and oceans.
- C. increased trapping of visible and ultraviolet radiation emitted from the Earth's surface and oceans.
- D. decreased trapping of visible and ultraviolet radiation emitted from the Earth's surface and oceans.

The following information relates to Questions 6 and 7.

The following graphs show projected atmospheric carbon emissions and carbon dioxide concentrations.



The carbon is emitted in the form of carbon dioxide gas. Carbon comprises approximately 27% of the mass of carbon dioxide.

注意：背面尚有試題

Question 6

The mass of **carbon dioxide** in gigatonnes emitted into the atmosphere globally in the year 2000 was approximately

- A. 2
- B. 8
- C. 15
- D. 30

Question 7

The projected percentage increase in atmospheric carbon dioxide between the years 2000 and 2100 is approximately

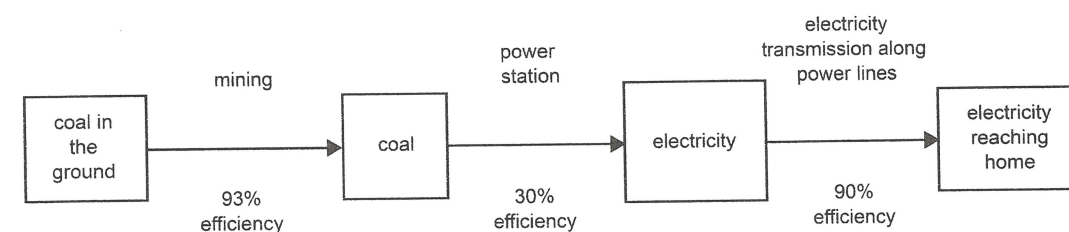
- A. 60
- B. 100
- C. 200
- D. 550

Use the following information to answer Questions 8 and 9.

Coal is dug from the ground and stored in a coal pile. In a power station, the coal from the pile is burned in a boiler to produce steam which drives a turbine to produce electricity.

The electricity is transmitted through a series of power lines to homes. The efficiency of each step in the process is shown in the diagram below.

One kilogram of coal releases 6000 kJ of energy when it is burnt.



Question 8

What percentage of the energy in coal in the ground reaches the home?

- A. 10
- B. 25
- C. 90
- D. 213

Question 9

How much energy is **not** converted to electricity when one kilogram of coal is burnt in a power station?

- A. 800 kJ
- B. 2100 kJ
- C. 4200 kJ
- D. 5580 kJ

Question 10

The amount of dioxin required to kill an animal depends on its body weight.

If 50% of dogs die when they consume a dose of 1.5 mg/kg, what dose would be expected to kill 50% of dogs that weigh 15 kg?

- A. 0.1 mg
- B. 1.5 mg
- C. 7.5 mg
- D. 22.5 mg

Question 11

A factory uses recycled paper to produce pulp that is then used to make paper.

If 75% of the recycled paper is converted into pulp, how much recycled paper is required to produce 1 tonne of pulp?

- A. 0.25 tonnes
- B. 0.75 tonnes
- C. 1.33 tonnes
- D. 1.50 tonnes

Question 12

Which is the *most* advanced approach?

- A. recycling materials
- B. using biodegradable material
- C. reducing the amount of materials used
- D. creating more durable products

Question 13

Obstacles to recycling include

- A. lack of inclusion of environmental costs in market prices
- B. tax breaks for mining virgin materials
- C. lack of large, steady markets for recycled materials
- D. all of these answers

Question 14

Which environmental problem is among the five leading causes of death worldwide?

- A. El Niño
- B. air pollution
- C. water pollution
- D. nuclear waste

Question 15

Primary pollutants from burning coal include all of the following *except*

- A. droplets of sulfuric acid
- B. sulfur dioxide
- C. particulate matter
- D. ozone

Question 16

Methods to *prevent* pollution from motor vehicle emissions include all of the following *except*

- A. improving fuel efficiency
- B. using pollution-control device
- C. using mass transit
- D. using less polluting fuels

Question 17

Which of the following is a point source of pollution?

- A. acid deposition
- B. urban street
- C. oil tanker
- D. suburban lawn

Question 18

The hydrologic cycle is driven primarily by?

- A. solar energy and gravity
- B. solar energy and the moon
- C. solar and mechanical energy
- D. mechanical and chemical energy

Question 19

All of the following increase the amount of carbon dioxide in the atmosphere *except*

- A. respiration
- B. photosynthesis
- C. combustion
- D. decomposition

Question 20

Scientific hypotheses differ from scientific theories in that they are

- A. widely accepted descriptions of what we find happening over and over in nature
- B. tentative explanations that need further evaluation
- C. not subject to proper investigation and testing
- D. all of these answers