



**NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE**

ENTRANCE EXAMINATION

**ENGLISH LANGUAGE
FORM A**

2001

Time allowed: 3 hours

INSTRUCTIONS

1. This examination contains FIVE (5) sections and comprises TEN (10) printed pages.
2. All 5 sections are compulsory.
3. Read the instructions at the beginning of each section, which specify the marks allocated and give time recommendations.
4. Write all your answers in the ANSWER BOOK provided.
5. Dictionaries should NOT be used.

Section A – Writing

Directions – Choose **one** of the following topics & clearly state the topic in the title of your composition. The length should be **350-500** words. It is recommended that you spend no longer than 60 minutes to complete this section of the test. Allow 10 minutes for organizing, 45 minutes for writing and 5 minutes for proofreading.

1. The pace of technological change has been extraordinarily rapid throughout the past decade. What do you predict will be the major technological advances that may occur within the next decade? Explain your view.
2. As population growth around the region continues, there is tremendous pressure on land use. Many previously untouched areas, including forests and jungles, are now being converted into urban areas. Should governments prioritise the conservation of natural areas or is their destruction an inevitable consequence of population growth? Support your view.
3. Some countries in the region have been trying to attract more foreign talent to boost their economic competitiveness. This has, however, caused some concern in those countries which are faced with a “brain drain”, where their own talented professionals have left to seek better employment opportunities and higher wages in other countries. Do you agree with this practice? Support your view.
4. Social scientists and natural scientists are not always regarded as equal when it comes to financial compensation for the work they have done in their own fields of study. Some people feel that natural scientists, including medical doctors and geneticists, should be paid higher wages, as their work makes a more obvious contribution to the development of mankind. Do you agree with this? Support your view.
5. Computers are becoming a standard feature in school classrooms throughout the world. Can computers be effectively used in the teaching of every subject? Support your view.

TOTAL: 30 MARKS

Section B - Reading Comprehension

Read the following passage and answer the questions that follow it. You are advised to spend a maximum of 50 minutes on the reading section.

THE FUELWOOD CRISIS

1 Two billion people are caught in a specific energy crisis – the shortage of fuelwood. Nearly half of humanity has not yet entered the age of fossil fuels and depends on wood for warmth, light and cooking. But as trees are cut down, fuelwood is becoming scarce over large parts of sub-Saharan Africa, the Middle East and Asia.

2 Fuelwood accounts for a large proportion of all energy consumption in many developing countries. More than 90 per cent of energy use in such nations as Tanzania, Nepal and Ethiopia comes from wood. It even supplies more than four fifths of oil-rich Nigeria's needs, and many other countries get half to three quarters of their energy from wood.

3 Already 100 million people in developing countries cannot get sufficient fuelwood to meet their minimum energy needs, and close to 1.3 billion are consuming fuelwood resources faster than they are being replenished. If present trends continue, the Food and Agriculture Organization of the United Nations (FAO) predicts that, in the next decade, another 1 billion people will be faced with chronic fuelwood shortages.

4 Thus within a decade, more than half of the population of developing countries will not be able to meet their minimum needs for energy or will be forced to consume wood faster than it can be grown. There is little chance that they could find any other source of heat and light. Usually there are no viable alternative fuels and, where there are alternatives, they cost too much. Already even a few sticks of wood can be prohibitively expensive in areas affected by severe shortages. It costs some rural families in India and Pakistan as much to heat the evening dinner bowl as it does to fill it. Health and nutrition are affected, as boiling water becomes an unaffordable luxury. Mothers are forced to feed their children on cereals, which cook quickly, rather than slower cooking and more nutritious foods, like beans.

5 Even in wood-rich areas like the Amazon, some towns are feeling the energy pinch. In Manuas, Brazil, for example, the majority of the poorer residents depend on charcoal for preparing meals. As the jungle recedes further away every year, due to expanding agriculture and logging, the cost of trucking in fuel rises. A week's supply of charcoal for an average family costs around \$2 – a considerable amount of money in a town where the average wage is \$2 a day.

6 As supplies dwindle, villagers – mainly women and children – have to spend more time searching for wood. Women in the village of Kalsaka in Africa walk three and a half hours through searing heat to collect wood that used to be available close to their huts. Families in the uplands of Nepal spend 230 person-days a year on fuelwood collection to meet family needs. Inevitably, less time can be spent in growing food.

7 **Ostensibly**, the fuelwood shortage has been attributed to the over-exploitation of forests and woodlots by the rural poor as human numbers and energy needs increase. This is an important factor. Yet the roots of the fuelwood crisis are more intricate: rampant logging, in combination with animal foraging and slash-and-burn cultivation, contribute to the fuelwood deficit. Deforestation is followed by erosion, desert encroachment, loss of biomass productivity and reduced water retention capacity of the soil.

8 Another consideration, often overlooked, is the increasing consumption of wood and charcoal by urban dwellers. Urbanization concentrates people and puts increasing stress on basic necessities such as food, energy, drinking water and shelter, exacting a heavy toll on the surrounding countryside. A study by the Beijer Institute of Stockholm, made for the Kenyan Government, found that proportionally one of the major contributors to deforestation was not rural fuelwood use, which was found to be mostly sustainable, but the wholesale conversion of wood to charcoal for sale to people living in towns and cities.

9 Charcoal is used to meet city needs because it is so much lighter than the original wood, and therefore much cheaper to transport. But converting wood to charcoal in traditional earthen pits consumes more than half its energy. So each town dweller uses twice as much wood for a given amount of energy as a country person who continues to use the original wood.

10 The World Bank estimates that meeting the fuelwood crisis will require planting 55 million hectares with fast-growing trees at a rate of 2.7 million hectares a year, five times the present annual rate of 555,000 hectares. But simply planting more trees, even fast-growing ones, is only part of the solution. The right species have to be selected for each particular environment, taking into account growth rates, water and mineral needs, and adaptability, among other things. Above all, the trees have to be planted where they will be used and by the people who will use them. This implies an emphasis on community woodlots, not the creation of huge fuelwood plantations filled with monocultures, located too far from where the wood is needed.

11 Some species show great promise. The *Leucaena* or *ipil ipil*, a native of Mexico, is one of the world's fastest growing trees. It can reach heights of 20 meters in six years. A *Leucaena* plantation can provide up to 50 metric tons of wood per hectare per year, or five times the average for cultivated pines in temperate regions. Its nitrogen-fixing roots also replenish the soil.

12 At the same time, more efficient stoves must be developed to allow the wood to burn longer, extracting more energy from each stick. The traditional three-stone fire is a very inefficient way of burning wood; its conversion efficiency may only reach 6 per cent of the fuel value of the wood. Unfortunately, many improved stoves have proved unworkable because they have technical problems or are made with material too expensive or too difficult to obtain. Improved stoves, however, must respond to local needs. The materials for building them have to be locally available, easily accessible and relatively cheap. The Lorena stove from Guatemala cuts fuelwood consumption in half. Molded from mud and sand, and fitted with a simple metal damper and pipe, it costs the equivalent of \$5. The World Bank estimates that the use of more efficient stoves- together with fuel substitution where practicable- could reduce fuelwood consumption by a quarter.

13 The threat of massive fuelwood shortages in the next century should prompt governments and international agencies to commit money and manpower to solving this crisis now, before it turns into a human tragedy.

Questions: The Fuelwood Crisis

This section consists of FIFTEEN (15) multiple choice questions. Choose the correct answer from the alternatives given. In your ANSWER BOOK, write the correct answer (a), (b), (c) or (d) next to the question number. Write in one column. Each multiple choice question carries two marks.

1. The main idea of this reading passage as a whole is that

- a) Charcoal is a substitute for fuelwood, and its widespread use can alleviate the fuelwood crisis.
- b) As supplies of fuelwood decrease, we need to develop new approaches to its production and use.
- c) The development of fast growing trees will help to avert the impending fuelwood crisis.
- d) The fuelwood crisis has occurred as a direct result of rapid urbanization in developing countries.

2. According to the information in paragraph 2, which of the following is NOT correct?

- a) Less than 10% of energy use in nations including Tanzania, Nepal and Ethiopia comes from sources other than wood.
- b) Fuelwood is consumed in large quantities for energy use in developing countries.
- c) Ethiopian wood supplies more than 80% of Nigeria's energy needs.
- d) Less than 20% of Nigeria's energy needs are met by sources other than wood.

3. Within ten years it is likely that

- a) fewer people in developing countries will be faced with continuing fuelwood shortages.
- b) over 50% of people in developing countries will not be able to meet their energy needs.
- c) other sources of heat and light will be discovered.
- d) low cost alternatives to fuelwood will be developed.

4. The example of mothers feeding their children cereal is given in order to

- a) illustrate regional variations in cooking.
- b) support the view that cereal is the most nutritious food for children.
- c) explain the process by which children suffer from malnutrition.
- d) show that the high cost of fuelwood can impact on health and nutrition.

5. The example of women in Kalsaka walking to collect wood is given in order to

- a) illustrate the point that supplies of wood are not as plentiful now.
- b) show that the situation is now better than it was in the past.
- c) explain the process of deforestation in Kalsaka.
- d) support the view that physical exercise is necessary for a healthy life.

6. The main purpose of paragraphs 7-9 is to

- a) explain the complex causes of the fuelwood crisis.
- b) compare the effectiveness of charcoal and wood as energy sources.
- c) show that the rural poor are responsible for the fuelwood crisis.
- d) explain the way in which the fuelwood crisis has influenced urbanization.

7. One disadvantage of the use of charcoal, as opposed to wood, is

- a) its weight .
- b) its cost to transport .
- c) the energy consumption involved in producing it .
- d) the difficulty of producing charcoal in earthen pits .

8. Planting more trees will not work if

- a) the trees grow extremely rapidly .
- b) the appropriate kind of tree is chosen for each special environment .
- c) the people who will use the trees plant them in a convenient location
- d) only fuelwood plantations filled with monocultures are developed .

9. People living in cities have contributed to the fuelwood crisis

- a) because of their reliance on the use of wood and charcoal for energy.
- b) by polluting the atmosphere and destroying large tracts of forests.
- c) because of their preference for wood as a source of energy.
- d) to a lesser degree than rural dwellers, who continue to cut down trees.

10. More efficient stoves have not been widely used because

- a) the traditional three stone fire is the most efficient way of burning wood .
- b) there have been technical problems that have made their use difficult .
- c) it is not possible to make money from producing stoves for developing countries .
- d) the materials used to make them have been easy to get .

11. The writer warns that the consequences of the developing fuelwood crisis will be disastrous unless

- a) governments spend more and devote more human resources to solving the fuelwood crisis .
- b) the World Bank spends more on developing large forests that suit the needs of local populations .
- c) governments control the price of wood and charcoal .
- d) governments delay acting until they have fully established the causes of the fuelwood crisis .

12. Which of the following would be the best replacement for the underlined part of the sentence from paragraph 5?

“Even in wood-rich areas like the Amazon, some towns are feeling the energy pinch.”

- a) stealing wood from neighbouring towns
- b) using only wood to supply the energy needs of their population
- c) having no difficulties meeting the energy needs of their population
- d) finding it a strain to meet their energy needs of their population

13. The word “ ostensibly “ (paragraph 7) is closest in meaning to

- a) unfortunately, given the circumstances
- b) appearing to be true, but not necessarily so
- c) erroneously, with the intent to deceive
- d) infrequently

14. “it costs the equivalent of \$5 (paragraph 12). It refers to

- a) the Lorena Stove
- b) fuelwood consumption
- c) a simple metal damper and pipe
- d) Guatemala

15. This reading would probably have appeared in
- a) a daily newspaper
 - b) an elementary school science textbook
 - c) a senior high school environmental science textbook
 - d) a specialist environmental science journal

TOTAL: 30 MARKS

Section C—Word Forms

In the following, give the correct form of the word or verb in the brackets for each numbered blank. In your answer book, write down the number and your answer against it. DO NOT write out the whole passage. Each answer carries one mark. You are advised to spend a maximum of 30 minutes on this section.

Conservation

Conservation is the sustainable use of natural resources, such as soils, water, plants, animals, and minerals. The natural resources of any area constitute its basic capital, and ...1... (waste) use of those resources constitutes an ...2... (economy) loss. From the aesthetic viewpoint, conservation also includes the ...3... (maintain) of national parks, wilderness areas, ...4... (history) sites, and wildlife.

Natural resources are of two main types, renewable and nonrenewable. Renewable resources ...5... (including) wildlife and natural vegetation of all kinds. The soil itself can be considered a renewable resource, although severe damage is ...6... (extreme) difficult to repair because of the slow rate of soil-forming processes. The natural ...7... (drain) of waters from the watershed of a region can be maintained indefinitely by careful ...8... (manage) of vegetation and soils, and the quality of water can be controlled through ...9... (pollute) control. Nonrenewable resources are those that cannot be replaced or that can be replaced only over ...10... (incredible) long periods of time. Such resources comprise the fossil fuels (coal, petroleum, and natural gas) and the metallic and other ores.

Although the conservation of natural resources has been recognized as ...11... (desire) by many peoples since ancient times, frequently the ...12... (base) principles of sound land use have been ignored, with ...13... (disaster) results. Major losses—for example, the silting of rivers and the flooding of lowlands—resulted from the ...14... (destroy) of the forests and grasslands that ...15... (protection) watersheds in northern China and the Tigris-Euphrates area of Asia. Large areas in North Africa and the Middle East were rendered barren by centuries of uncontrolled livestock grazing, unwise cultivation, and ...16... (excess) cutting of woody plants for fuel. Similar damage has also occurred in most of the more ...17... (recent) developed regions of the world, sometimes through the unwise ...18... (introduce) of species into new environments. The ...19... (increase) industrialization of nations around the world continues to present grave conservation problems although international cooperation efforts have also evolved in certain areas, such as the protection of some ...20... (endanger) species.

TOTAL: 20 MARKS

Section D—Fill in the blanks

Supply a suitable word for each of the numbered blanks (you are given the beginning letter of the required word). In your answer book, write down the number and your answer (the entire word) against it. Do not write out the whole passage. Each answer carries ½ mark. You are advised to spend a maximum of 25 minutes on this section.

Acid Rain

Acid rain, a form of air pollution, is currently a subject of great controversy because of widespread environmental d 1 for which it has been blamed. It forms w 2 oxides of sulfur and nitrogen combine with atmospheric moisture to yield sulfuric and nitric acids, w 3 may then be carried long distances from their source b 4 they are deposited by rain. The pollution may also take the form of snow or fog or be precipitated i 5 dry forms. The dry form of such precipitation is just as damaging to the environment a 6 the liquid form.

The problem of acid rain originated w 7 the Industrial Revolution, and it has been growing ever since. The severity of its e 8 has long been recognized in local settings, as exemplified b 9 the spells of acid smog in heavily industrialized areas. The widespread destructiveness of acid rain, h 10, has become evident only in recent decades. One large area that has been studied extensively is northern Europe, w 11 acid rain has eroded structures, injured crops and forests, and threatened or depleted life in freshwater lakes. In 1984, for example, environmental reports indicated that a 12 half of the trees in Germany's Black Forest had been damaged by acid rain. The northeastern United States and eastern Canada have been p 13 affected by this form of pollution. Damage has a 14 been detected in other areas of these countries and other regions of the world.

Industrial emissions have been blamed as the m 15 cause of acid rain. Because the chemical reactions involved i 16 the production of acid rain in the atmosphere are complex and as yet little understood, industries have tended to challenge s 17 assessments and to stress the need for further studies; and b 18 of the cost of pollution reduction, governments have tended to support this attitude. Studies released by the U.S. government in the e 19 1980s, however, strongly implicated industries as the main s 20 of acid rain, in the eastern U.S. and Canada.

TOTAL: 10 MARKS

Section E- Paraphrasing

Read Sentence A carefully. Complete Sentence B in your answer book, keeping as closely as possible to the meaning in Sentence A. You are advised to spend a maximum of 15 minutes on this section. Each answer carries one mark.

Example:

A. This story doesn't amuse me.

B. don't find.....

➤ **Answer: I don't find this story amusing.**

- A. He ran away as soon as he saw a policeman
B. The moment ...
2. A. The discipline mistress reprimanded our class for making too much noise.
B. Our class ...
3. A. Between Lin Yang and Wong Lu, one of them has to finish the job.
B. Either ...
4. A. Although Jane won the second prize in the story telling competition, she was not happy.
B. In spite of ...
5. A. The man is too old to do anything.
B. The man is so ...
6. A. The experience is fantastic!
B. What ...
7. A. Could you do me a favour?
B. Would you mind ...
8. A. The librarian denied me entry into the library because I didn't have a membership card.
B. I was ...
9. A. I am very familiar with the environment here.
B. The environment here ...
10. A. The movie was interesting.
B. I

TOTAL: 10 MARKS

- END OF PAPER -