Reading Practice

# NEW RULES FOR THE PAPER GAME

**1.** Computerized data storage and electronic mail were to have heralded the paperless office. But, contrary to expectation, paper consumption throughout the world shows no sign of abating. In fact, consumption, especially of printing and writing papers, continues to increase. World demand for paper and board is now expected to grow faster than the general economic growth in the next 15 years. Strong demand will be underprinted by the growing industrialization of South East Asia, the reemergence of paper packaging, greater use of facsimile machines and photocopiers, and the popularity of direct -mail advertising. It is possible that by 2007, world paper and board demand will reach 455 million tonnes, compared with 241 million tonnes in 1991.

**2.** The pulp and paper industry has not been badly affected by the electronic technologies that promised a paperless society. But what has radically altered the industry's structure is pressure from another front-a more environmentally conscious society driving an irreversible move towards cleaner industrial production. The environmental consequences of antiquated pulp mill practices and technologies had marked this industry as one in need of reform. Graphic descriptions of deformed fish and thinning populations, particularly in the Baltic Sea where old pulp mills had discharged untreated effluents for 100 years, have disturbed the international community.

**3.** Until the 1950s, it was common for pulp mills and other industries to discharge untreated effluent into rivers and seas. The environmental effects were at the time either not understood, or regarded as an acceptable cost of economic prosperity in an increasingly import-oriented world economy. But greater environmental awareness has spurred a fundamental change in attitude in the community, in government and in industry itself.

**4.** Since the early 1980s, most of the world-scale pulp mills in Scandinavia and North America have modernized their operations, outlying substantial amounts to improve production methods. Changes in mill design and processes have been aimed at minimizing the environmental effects of effluent discharge while at the same time producing pulp with the whiteness and strength demanded by the international market. The environmental impetus is taking this industry even further, with the focus now on developing processes that may even eliminate waste-water discharges. But the ghost of the old mills continues to haunt industry today. In Europe, companies face a flood of environment-related legislation. In Germany, companies are now being held responsible for the waste they create.

**5.** Pulp is the porridge -like mass of plant fibers from which paper is made. Paper makers choose the type of plant fibre and the processing methods, depending on what the end product will be used for: whether it is a sturdy packing box, a smooth sheet of writing paper or a fragile tissue. In wood, which is the source of about 90% of the world's paper production, fibres are bound together by lignin, which gives the unbleached pulp a brown colour. Pulping can be done by mechanical grinding, or by chemical treatment in which woodchips are "cooked" with chemicals, or by a combination of both methods.

**6.** Kraft pulping is the most widely used chemical process for producing pulp with the strength required by the high-quality paper market. It is now usually carried out in a continuous process in a large vessel called digester. Woodchips are fed from a pile into the top of the digester. In the digester, the chips are cooked in a solution called white liquor,

nosed of caustic soda (sodium hydroxide) sodium sulphide. The chips are cooked at high temperatures of up to 170 degree for up to three hours. The pulp is then washed and rate from the spent cooking liquor which has turned dark and is now appropriately ailed black liquor. An important feature of kraft pulping is a chemical recovery system which recycles about 95 % of the cooking chemicals and produces more than enough energy runs the mill. In a series of steps involving a furnace and tanks, some of the black liquor is transformed into energy, while some is regenerated into the original white cooking liquor. The pulp that comes out has little lignin left in the fibres. Bleaching removes the last remaining lignin and brightens the pulp. Most modern mills have modified their pulping process to remove as much of the lignin as possible before the pulp moves to the bleaching stage.

## Questions 1-4

*Look at the following list of factors **A-C**, which will influence the amount of paper being used in the future.*

*Choose **FOUR** factors which are mentioned in Paragraph 1 of the Reading Passage 3.*

*Write the correct answers **A-C** in boxes **1-4** on your Answer Sheet*

**List of factors**

A more people read newspapers

B increased use of paper bags

C increased boob production for education

D wider use of sign post advertising

E increased use of fax machines

F wider use of leaflet advertising

G greater use of duplicating machines

## Questions 5-7

*Complete the statements from the Paragraph 2,3 and 4 by using **NO MORE THAN THREE WORDS***

*Write your answers in the boxes **5-7** on your Answer Sheet.*

**5** The international community has begun to demand**5**.....

**6** In the past, the environmental effects of pulp mill practices were probably a price to pay for **6**.....

**7** Some paper mills have recently modernized their mill design in order to decrease **7**.....

## Questions 8-12

*Below is the list of steps in the bra ft process of turning wood chips into paper, which are numbered **1-8**. Only **FIVE** of the steps listed below are mentioned in the Reading Passage 3. Decide which steps are mentioned and write the appropriate number for each step in the correct order in the boxes **8-12** on your answer sheet.*

1 the chips are cooked

2 the fibres are bound by lignin

3 the pulp is bleached

4 woodchips are put into a pile

5 the pulp is dried

6 the pulp is removed from the black liquor

7 the chips are put into the white liquor

8 the pulp is washed

## Solution:

**1.** B, E, F, G IN ANY ORDER

**2.** B, E, F, G IN ANY ORDER

**3.** B, E, F, G IN ANY ORDER

**4.** B, E, F, G IN ANY ORDER

**5.** cleaner industrial production

**6.** economic prosperity

**7.** environmental effects

**8.** 4

**9.** 7

**10.** 1

**11.** 8

**12.** 6