

IELTS READING

READING PASSAGE 1

You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 below.

A Brief History of Rubber

A

Rubber is one of the most important products to come out of the rainforest. Though indigenous rainforest dwellers of South America have been using rubber for generations, it was not until 1839 that rubber had its first practical application in the industrial world. In that year, Charles Goodyear accidentally dropped rubber and sulfur on a hot stovetop, causing it to char like leather yet remain plastic and elastic. Vulcanization, a refined version of this process, transformed the white sap from the bark of the Heave tree into an essential product for the industrial age.

B

With the invention of the automobile in the late 19th century, the rubber boom began. As demand for rubber soared small dumpy river towns like Manaus, Brazil, were transformed into over night into bustling centers of commerce. Manaus, situated on the Amazon where it is met by Rio Negro, became the opulent heart of the rubber trade. Within a few short years Manaus had Brazil's first telephone system, 161 miles of streetcar tracks, and an electric grid for a city of a million, though it had a population of only 40,000.

C

The opulence of the rubber barons could only be exceeded by their brutality. Wild Heave trees, like all primary rainforest trees are widely dispersed, with an adaptation that protects species from the South American leaf blight which easily spreads through and decimates plantations. Thus to make a profit, barons had to acquire control over huge tracts of land. Most did so by hiring their own private armies to defend their claims, acquire new land, and capture native laborers. As the Indians died, production soared.

D

The Brazilian rubber market was crushed by the rapid development of the more efficient rubber plantations of Southeast Asia. However, the prospects of developing plantations did not begin on a high note. Rubber seeds, rich with oil and latex, could not survive the long Atlantic journey from Brazil. Finally, in 1876, an English planter, Henry Wickham, collected 70,000 seeds and shipped them to England. 2800 of the seeds germinated and were sent to Colombo, Ceylon (present day Sri Lanka). After several false starts, including one planter in northern Borneo who felled his plantation after finding no rubber balls hanging from the braches, the prospects were grim. One major obstacle was the success of tea and coffee gave planters no reason to try an untested crop.

E

Finally in 1895, Henry Ridley, head of Singapore's botanical garden, persuaded two coffee growers to plant two acres of Heave tress. Twelve years later more than 300,000 ha of rubber grew in plantations in Ceylon and Malaya. New innovations increased efficiency and production doubled every two years. Rubber could be produced at only a fraction of

the cost of collecting wild rubber in Brazil. By 1910, Brazilian production had fallen to 50%. In 1914, Brazil's market share was down around 30%; 1918 -20%, and 1940 -1.3%.

F

However the Second World War threatened to shift the rubber wealth. With Japan occupying prime rubber producing areas in Southeast Asia, the US feared it would run out of the vital material. Every tire, hose, seal, valve, and inch of wiring required rubber. The rubber Development Corporation, the chief overseer of rubber acquisition, sought out other sources including establishing a rubber program that sent intrepid explorers into the Amazon seeking rubber specimen that would be used to produce high yields, superior product, and possibility of resistance against leaf blight. The ultimate goal of the program was to establish rubber plantations close to home. In addition to searching the Amazon and establishing experimental plantations in Latin America, the program came up with some novel plans to produce rubber. Extensive work on synthetic rubber yielded a product that, in time, economists predicted would replace natural rubber. By 1964 synthetic rubber made up 75% of the market.

G

However the situation changed drastically with the OPEC oil embargo of 1973 which doubled the price of synthetic rubber and made oil consumers more conscious of their gas mileage. The concern over gas mileage brought unexpected threat to the synthetic market: the wide-spread adoption of the radial tire. The radial tire replaced the simple bias tires (which made up 90% of the market only 5 year earlier) and within a few years virtually all cars were rolling in radials. Synthetic rubber did not have the strength for radials; only natural rubber could provide the required sturdiness. By 1993 natural rubber had recaptured 39% of the domestic market. Today nearly 50% of every auto tire and 100% of all aircraft tires are made of natural rubber. 85% of this rubber is imported from Southeast Asia meaning that the US is highly susceptible to disruptions caused by an embargo or worse, the unintentional or intentional introduction of leaf blight into plantations. None of the trees in plantations across Southeast Asia has resistance to blight so a single act to biological terrorism, the systematic introduction of fungal spores so small as to be readily concealed in a shoe, could wipe out the plantations, shutting down production of natural rubber for at least a decade. It is difficult to think of any other raw material that is as vital and vulnerable.

Questions 1-7

Reading Passage 1 contains 7 paragraphs **A-G**.

Which paragraphs state the following information?

*Write the appropriate letters **A-G** in boxes 1-7 on your answer sheet.*

- 1 The extensive acceptance of radial tires.
- 2 Searching for new specimens to overcome leaf blight
- 3 The first trading center for the rubber business.
- 4 Asia dominated the rubber market year by year
- 5 Rubber seeds are vulnerable to long distance transport
- 6 Individual wealth accumulated by rubber trading
- 7 Natural rubber gave way to its replacement

Questions 8-13

Complete the summary below based on paragraph G

Use **NO MORE THAN THREE WORDS** from the passage for each answer.

OPEC doubled revenue from synthetic rubber and made oil consuming nations more attentive of 8 _____. This brought threats to the synthetic market by espousing the 9 _____, which would replace all the simple bias tires within a few years. Because 10 _____ is the only material that provides the entailed toughness, synthetic rubber lost significant market share. The US industry is very fragile to disruptions caused by an 11 _____. What's even worse, since the rubber trees in plantations across Southeast Asia cannot withstand 12 _____, the small fungal spores could be so dangerous as to shut down production of natural rubber for a decade. Rubber, hence, is the most 13 _____ raw material in the world.