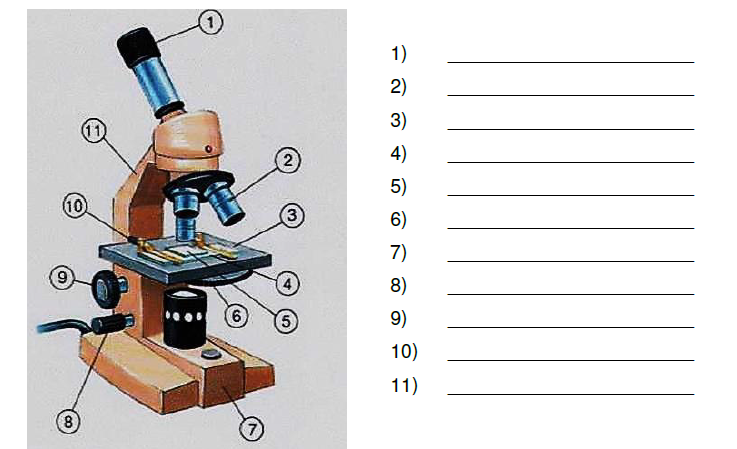
**English exam I**

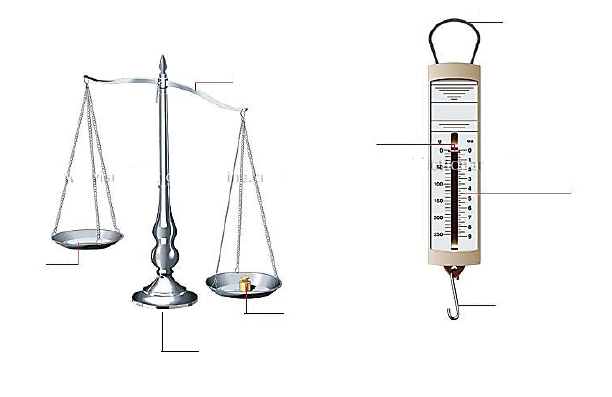
**I. Vocabulary ( 23p. )**

**1. Fill in the right words ( 1 point for each word)**

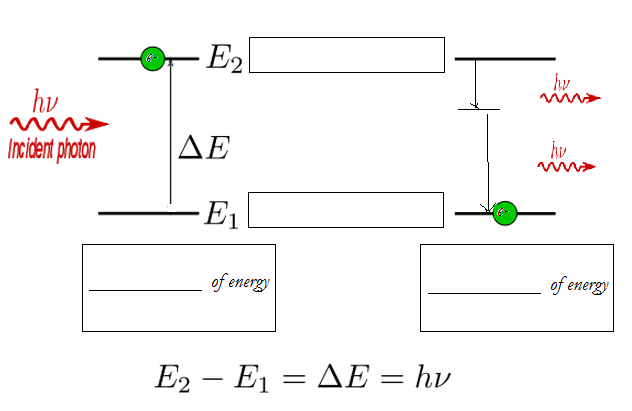
**1.1. The microscope**

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**1.2. Balances**

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**1.3. Electronic transition**

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/23p.

**II: Writing a persuasive essay ( 37 p.)**

*Please choose only one of the following tasks to work on and write in maximum 400 words. Try to rephrase words and sentences and do not just copy.*

**1. In the course of a master thesis, in which you aim at solving one of the global problems, you apply for a research grant which will pay for your expenses as well as costs of living. You are asked to outline your research in a persuasive essay where you refer to the problem to be solved and what benefits your research idea / invention/ discovery provide to it. Use the structure of a funnel introduction, body paragraphs and conclusion. In each body paragraph, write about one argument which is introduced by an introductory sentence.**

**List of problems:**

poverty; hunger; lack of drinking water; cybercrime; crime and prevention; war; international terrorism; new spread of infectious diseases ( HIV, Ebola, measles); increasing global population; lack of energy resources; climate change; loss of natural habitats ( e.g. destruction of rain forests and desertification); extinction of species; transportation; communication; education; diseases in the civil society ( e.g. burnout, cadiac seizure); racism; corruption; democracy; justice; waste ( e.g. chemical, nuclear)

**OR**

**2. Read the following article about an invention which is named " Waterboxx" and is devised to reforest the deserts. Rewrite this article by using the same structure as in the other task based on the information from the text: outlining the problem and its solution in a funnel introduction, stating the mentioned arguments in the subsequent body paragraphs and summing up in a conclusion.**

/37 p.

Remember that stress and panic block you even more. You have all time in the world and you can try over and over again.

GOOD LUCK!!!

Total points: \_\_\_\_\_ / 60 p.,

GRADE: \_\_\_\_\_\_\_\_\_\_\_

**[](http://www.newyorker.com/wp-content/uploads/2011/12/111219_r21628_g2048-1200.jpg)**

**The Great Oasis**

by Burkhard Bilger

**T**he desert is a good place for visionaries. It can flower in the mind even as it withers at your feet. About a third of all land on the planet has been claimed by it—almost twenty million square miles—and the percentage increases every year. Where rain is scarce and the ground is stripped of trees, where soil is eroded by the steady beat of sun, hooves, and seasonal farming, a landscape can turn to dust in a generation. “These are real deserts that are being born today, under our eyes,” the French botanist André Aubréville warned in 1949, when he popularized the term “desertification.” “The desert always menaces.” In the past century, over most of the globe, the amount of dust in the air has doubled.

To Hoff, the solution seems straightforward. If we can replant the forests lost to desertification, he says, we can provide food, fuel, shade, and shelter on an enormous scale. We can conserve water, fertilize the soil, protect wildlife, and cool the atmosphere. Every year, human industry sends about nine billion tons of carbon into the air. An acre of trees, planted in a desert, could pull two to three tons of that carbon back down. “Multiplied by five billion, we have solved the problem,” Hoff says.

As global temperatures rise, reforestation schemes seem to grow ever more extravagant—fever dreams of the desert’s future. One project, proposed three years ago by a group of British and Norwegian designers, would consist of long chains of greenhouses and orchards, running for miles across the Sahara. The trees and crops would subsist on seawater pumped from the coast and desalinated using heat and power from huge solar arrays. Another proposal, from the Swedish architect Magnus Larsson, would make use of an organism called *Bacillus pasteurii*, which can turn sand into sandstone. In Larsson’s scheme, great masses of the bacteria would be injected into dunes across the breadth of the Sahara, creating a bulwark against the sand and solid footing for a shelterbelt of trees. Water would collect in the sandstone’s cool, porous substructure, sustaining the trees’ roots and any settlers who wished to move inside. In Larsson’s drawings, the underground rooms have the groovy, biomorphic look of an old Yes album cover.

Hoff’s invention, which he calls the Waterboxx, was inspired by a trip to Italy in 1994. He was driving past a barren mountain range near Naples, and he began to wonder what it would take to grow trees there. The local climate was fairly dry, but the problem was less a matter of moisture than of timing. Even deserts can get as much as twenty inches of rain a year, but it all comes down at once. The plants that survive tend to rely on condensation—“They drink from the air,” as Hoff puts it. In Africa’s Namib Desert, Welwitschia plants have been known to live for more than a thousand years on the dew that they absorb through their long, porous leaves. What if a device could be built on the same principle? Hoff thought. It could collect rain and dew, then release it to a seed or sapling one drop at a time.

Hoff devoted most of his time and the greater part of his fortune—some thirteen million dollars, at last count—to developing the Waterboxx. By the time I met him, he had spent five years shuttling from desert to desert, testing prototypes with local agronomists. That month alone, he’d been in Kenya, Kuwait, and Bahrain, with Spain and India still to come. “I always search for the most extreme places, where no one expects anything to grow,” he said. All told, he had planted some sixty thousand trees in twenty countries, with a few vegetable patches and vineyards thrown in. (Robert Mondavi Winery was testing Waterboxxes in the Napa Valley.) Oman was his most challenging site yet. If he could grow trees there, Hoff figured, he could grow them anywhere.

The Waterboxxes were arrayed in a circle around the platform. There were forty in all—a gift from Queen Beatrix of the Netherlands to Sultan Qaboos bin Sa’id, commemorating his forty years in power. Like most good tools, they weren’t much to look at: a set of simple ideas combined to surprising effect. Each box had a round, four-gallon tank molded out of polypropylene, with an open-ended shaft in the middle where the seedlings grew. The lid was modelled on a lotus leaf, with radiating folds that collected the rain and the dew and sluiced them into a pair of drains. “If you have a rain shower of only four inches, then this is full,” Hoff said. A wick at the bottom of the tank carried the water to the root at a rate of about four tablespoons a day—a single tank could sustain a seedling for about a year without a refill. The whole box functioned as a temperature regulator, Hoff said. The water absorbed heat by day and released it by night. The shaft was shaped to let in the morning and evening sun but throw shade over the seedling at midday.

Hoff reached down and pried the lid off one of the boxes. “Mother Nature plants trees differently than people do,” he said. “We buy a very big plant and then we dig a hole for it. Mother Nature starts with a seed.” Saplings from nurseries have well-developed secondary roots, which spread laterally through the ground. Short and densely woven, they draw maximum sustenance from the soil, but they need water right away and by the bucketful. A seed can afford to wait. Encased in dung from a passing bird or other animal, it can survive for months without rain. If the soil is dry, it can put all its energy into sending a single taproot in search of groundwater.

The Waterboxx is designed to encourage such persistence. Like nature, it begins with a seed, then gives it just enough sustenance to survive until it finds water. After a year, when the root reaches wetter soil, the box can be lifted away and reused. “See these young leaves?” Hoff said, pointing to a cluster of heart-shaped buds, bright green against the darkened soil. “They show that the root is already tapping deeper.”

(1000 words ; abriged and adapted from the articleby *Burkhard Bilger ;The Great Oasis; The New Yorker; (2009)* )