1. Bài tập 1

SETTING UP IN BUSINESS

A. It takes a considerable commitment to set up and run a small business. Owners must be able to do all the tasks necessary to run the business or have sufficient funds to buy in appropriate external help, and even then they must be able to check the quality of the service they are receiving.

B. Anyone planning to start a business must be realistic about what can be achieved, and in what time frame. Entrepreneurs often work extremely long hours, not just during 'trading' hours, but also after hours doing all the associated paperwork. If entrepreneurs overwork, they will find it difficult to make good decisions and will lack the energy to analyse and evaluate marketing and finance data. If an entrepreneur becomes over tired and over anxious, they can undermine their businesses by giving the impression that things are bad and the business is just about to close down.

C. Many organizations provide support networks for entrepreneurs running small businesses. These networks provide training and access to experienced business mentors for little or no charge. The Business Link network, funded by Department of Trade and Industry, is one source of this kind of support. If entrepreneurs are under 30 years of age, the Prince's Trust also provides training and mentoring for business start-ups. There are various other privately run business networking groups which can be both fun and mutually supportive.

D. Owners need to consider four key issues: training, leadership and team development, delegation and management systems.

E. Investment in training is necessary to ensure that staff have the skills to do their jobs efficiently and they can meet the requirements of current legislation such as health and safety. Staff may also need training to develop skills to meet internationally recognized quality standards for products and service delivery. Research shows that small and medium-sized firms often find it very difficult to organize effective training.

F. Ideally, workplace teams should be happy, creative working groups of individuals who support each other, work to each other's strengths and work towards the business's goals. This might require the owners to undertake self-assessment and target-setting reviews to ensure that the business is staying focused on its objectives. Team development can be fostered by organizing events such as team lunches and days out walking together.

G. Owners should delegate and employ appropriate people to do the tasks that they cannot do or do not have time to do. By freeing themselves from some of the easier day-to-day tasks of the business, owners can spend their time monitoring the overall business and thinking about where the business should be going. Certainly if the owners are passionate about the business, they need time to step back and focus on the long-term goals and vision of the organization. They also need time to network, to build up sales leads and to explore further investment opportunities for the business.

H. In time, owners need to be able to let go of control of some aspects of the business and to develop more formal management systems. This is probably the most difficult task for any entrepreneur. Many entrepreneurs find it very difficult to trust paid employees to run their businesses.

I. At this stage in their development, without outside help and guidance, many businesses simply reach their 'natural' capacity and they do not develop or grow any further. Entrepreneurs need to decide whether they want to keep their business small - so that they retain control of all decisions - or whether they want to go on growing their business and therefore accept that this will necessarily change their role in the business.

Questions 1-6

*The passage below has nine paragraphs **A-I**. Which paragraphs mention the following information? You may use any letter more than once.*

1. physical and mental problems that a business owner can face……..
2. leadership and team improvement ideas.....
3. the advantage of not expanding in business.....
4. individuals and larger groups that are available to help people who are new to business
5. the reasons why the more basic jobs in a small company should not be not be carried out by employers.....
6. external reasons why companies should try to keep their employees' knowledge and expertise up-to-date.....

2. Bài tập 2

RUBIK'S CUBE

How the puzzle achieved success

Erno Rubik first studied sculpture and then later architecture in Budapest, where he went on to become a teacher of interior design. It was while he was working as a teacher that he began the preliminary work on an invention that he called the 'Magic Cube'.

Rubik was inspired by geometric puzzles such as the Chinese tangram, a puzzle consisting of various triangles, a square and a parallelogram which can be combined to create different shapes and figures. However, unlike the tangram, which is two-dimensional, Rubik was more interested in investigating how three-dimensional forms, such as the cube, could be moved and combined to produce other forms.

His design consisted of a cube made up of layers of individual smaller cubes, and each smaller cube could be turned in any direction except diagonally. To ensure that the cubes could move independently, without falling apart, Rubik first attempted to join them together using elastic bands. However, this proved to be impossible, so Rubik then solved the problem by assembling them using a rounded interior. This permitted them to move smoothly and easily. He experimented with different ways of marking the smaller cubes, but ended up with the simple solution of giving a different colour to each side. The object was to twist the layers of small cubes so that each side of the large cube was an identical colour.

Rubik took out a patent for the Cube in 1977 and started manufacturing it in the same year. The Cube came to the attention of a Hungarian businessman, Tibor

Laczi, who then demonstrated it at the Nuremberg Toy Fair. When British toy expert Tom Kremer saw it, he thought it was amazing and he persuaded a manufacturer, Ideal Toys, to produce 1 million of them in 1979. Ideal Toys renamed the Cube after the toy's inventor, and in 1980, Rubik's Cube was shown at toy fairs all over the world. It won that year's prize in Germany for Best Puzzle. Rubik's Cube is believed to be the world's best-selling puzzle; since its invention, more than 300 million Cubes have been sold worldwide.

*Now complete the summary. Choose **NO MORE THAN TWO WORDS** from the passage to each answer.*

Rubik's Cube

Originally named the **1** ……., Rubik's Cube consists of a number of smaller cubes organised in **2** ……. The smaller cubes can be twisted in almost any way, though not **3** ……... The Cube's **4** …… is shaped in a way that allows the smaller cubes to move smoothly. Each side of the smaller cubes has a different colour, and the aim of the puzzle is to organise the cubes so that the colours on the sides of the large cube are **5** ……..

The manufacturers of the puzzle changed the name of the Cube to the name of its **6** ……. it has now sold more than any other **7** …… in the world.

3. Bài tập 3

WHY DON'T BABIES TALK LIKE ADULTS?

Kids go from 'goo-goo' to talkative one step at a time.

By Joshua Hartshorne

A recent e-trade advertisement shows a baby speaking directly to the camera: 'Look at this,' he says, I'm a free man. I go anywhere I want now.' He describes his stock-buying activities, and then his phone rings. This advertisement proves what comedians have known for years: few things are as funny as a baby who talks like an adult. But it also raises an important question: Why don't young children express themselves clearly like adults?

Many people assume children learn to talk by copying what they hear. In other words, they listen to the words adults use and the situations in which they use them and imitate accordingly. Behaviourism, the scientific approach that dominated American cognitive science for the first half of the 20th century, made exactly this argument.

However, this 'copycat' theory can't explain why toddlers aren't as conversational as adults. After all, you never hear literate adults express themselves in one-word sentences like 'bottle' or 'doggie'. In fact, it's easy for scientists to show that a copycat theory of language acquisition can't explain children's first words. What is hard for them to do is to explain these first words, and how they fit into the language acquisition pattern.

Over the past half-century, scientists have settled on two reasonable possibilities. The first of these is called the 'mental-developmental hypothesis'. It states that one-year-olds speak in baby talk because their immature brains can't handle adult speech. Children don't learn to walk until their bodies are

ready. Likewise, they don't speak multi-word sentences or use word endings and function words (‘Mummy opened the boxes') before their brains are ready. The second is called the ‘stages-of-language hypothesis’, which states that the stages of progress in child speech are necessary stages in language development.

A basketball player can't perfect his or her jump shot before learning to (1) jump and (2) shoot. Similarly, children learn to multiply after they have learned to add. This is the order in which children are taught - not the reverse. There's evidence, for instance, that children don't usually begin speaking in two-word sentences until they’ve learned a certain number of single words. In other words, until they’ve crossed that linguistic threshold, the word-combination process doesn't get going.

The difference between these theories is this: under the mental-development hypothesis, language learning should depend on the child’s age and level of mental development when he or she starts learning a language. Linder the stages-of-language hypothesis, however, it shouldn’t depend on such patterns, but only on the completion of previous stages.

In 2007, researchers at Harvard University, who were studying the two theories, found a clever way to test them. More than 20,000 internationally adopted children enter the US each year. Many of them no longer hear their birth language after they arrive, and they must learn English more or less the same way infants do - that is, by listening and by trial and error. International adoptees don’t take classes or use a dictionary when they are learning their new tongue and most of them don’t have a well-developed first language. All of these factors make them an ideal population in which to test these competing hypotheses about how language is learned.

Neuroscientists Jesse Snedeker, Joy Geren and Carissa Shafto studied the language development of 27 children adopted from China between the ages of two and five years. These children began learning English at an older age than US natives and had more mature brains with which to tackle the task. Even so, just as with American-born infants, their first English sentences consisted of single words and were largely bereft of function words, word endings and verbs. The adoptees then went through the same stages as typical American- born children, albeit at a faster clip. The adoptees and native children started combining words in sentences when their vocabulary reached the same sizes, further suggesting that what matters is not how old you are or how mature your brain is, but the number of words you know.

This finding - that having more mature brains did not help the adoptees avoid the toddler-talk stage - suggests that babies speak in babytalk not because they have baby brains, but because they have only just started learning and need time to gain enough vocabulary to be able to expand their conversations. Before long, the one-word stage will give way to the two-word stage and so on. Learning how to chat like an adult is a gradual process.

But this potential answer also raises an even older and more difficult question. Adult immigrants who learn a second language rarely achieve the same proficiency in a foreign language as the average child raised as a native speaker. Researchers have long suspected there is a 'critical period' for language development, after which it cannot proceed with full success to fluency. Yet we still do not understand this critical period or know why it ends.

Adapted from Scientific American: Mind Matters

*Complete the summary using the list of words and phrases, **A-H**, below.*

Two theories about babytalk

According to the writer, there are two main theories related to babytalk. One states that a young child's brain needs **5** ..... to master language, in the same way that it does to master other abilities such as **6** ..... . The second theory states that a child's **7**……. is the key factor. According to this theory, some key steps have to occur in a logical sequence before **8** ..... occurs. Children's **9** ..... develops in the same way.

A. vocabulary level
B. physical movement
C. time
D. attention
E. mathematical knowledge
F. sentence formation
G. learning
H. teaching

4. Bài tập 4

LEARNING COLOR WORDS

Young children struggle with color concepts, and the reason for this may have something to do with how we use the words that describe them.

A. In the course of the first few years of their lives, children who are brought up in English- speaking homes successfully master the use of hundreds of words. Words for objects, actions, emotions, and many other aspects of the physical world quickly become part of their infant repertoire. For some reason, however, when it comes to learning color words, the same children perform very badly. At the age of four months, babies can distinguish between basic color categories. Yet it turns out they do this in much the same way as blind children. "Blue" and "yellow" appear in older children's expressive language in answer to questions such as "What color is this?", but their mapping of objects to individual colors is haphazard and interchangeable. If shown a blue cup and asked about its color, typical two-year-olds seem as likely to come up with "red" as "blue." Even after hundreds of training trials, children as old as four may still end up being unable to accurately sort objects by color.

B. In an effort to work out why this is, cognitive scientists at Stanford University in California hypothesized that children's incompetence at color-word learning may be directly linked to the way these words are used in English. While word order for color adjectives varies, they are used overwhelmingly in pre-nominal position (e.g. "blue cup"); in other words, the adjective comes before the noun it is describing. This is in contrast to post-nominal position (e.g. "The cup is

blue") where the adjective comes after the noun. It seems that the difficulty children have may not be caused by any unique property of color, or indeed, of the world. Rather, it may simply come down to the challenge of having to make predictions from color words to the objects they refer to, instead of being able to make predictions from the world of objects to the color words.

To illustrate, the word "chair" has a meaning that applies to the somewhat varied set of entities in the world that people use for sitting on. Chairs have features, such as arms and legs and backs, that are combined to some degree in a systematic way; they turn up in a range of chairs of different shapes, sizes, and ages. It could be said that children learn to narrow down the set of cues that make up a chair and in this way they learn the concept associated with that word. On the other hand, color words tend to be unique and not bound to other specific co-occurring features; there is nothing systematic about color words to help cue their meaning. In the speech that adults direct at children, color adjectives occur pre-nominally ("blue cup") around 70 percent of the time. This suggests that most of what children hear from adults will, in fact, be unhelpful in learning what color words refer to.

C. To explore this idea further, the research team recruited 41 English children aged between 23 and 29 months and carried out a three-phase experiment. It consisted of a pre-test, followed by training in the use of color words, and finally a post-test that was identical to the pre-test. The pre- and post-test materials comprised six objects that were novel to the children. There were three examples of each object in each of three colors—red, yellow, and blue. The objects were presented on trays, and in both tests, the children were asked to pick out objects in response to requests in which the color word was either a pre nominal ("Which is the red one?") or a post-nominal ("Which one is red?").

In the training, the children were introduced to a "magic bucket" containing five sets of items familiar to 26-month-olds (balls, cups, crayons, glasses, and toy bears) in each of the three colors. The training was set up so that half the children were presented with the items one by one and heard them labelled with color words used pre-nominally ("This is a red crayon"), while the other half were introduced to the same items described with a post-nominal color word ("This crayon is red"). After the training, the children repeated the selection task on the unknown items in the post-test. To assess the quality of children's understanding of the color words, and the effect of each type of training, correct choices on items that were consistent across the pre- and post-tests were used to measure children's color knowledge.

D. Individual analysis of pre- and post-test data, which confirmed parental vocabulary reports, showed the children had at least some knowledge of the three colour words: they averaged two out of three correct choices in response to both pre- and post-nominal question types, which, it has been pointed out, is better than chance. When children's responses to the question types were assessed independently, performance was at its most consistent when children were both trained and tested on post-nominal adjectives, and worst when trained on pre-nominal adjectives and tested on post-nominal adjectives. Only children who had been trained with post- nominal color-word presentation and then tested with post-nominal question types were significantly more accurate than chance. Comparing the pre- and post-test scores across each condition revealed a significant decline in performance when children were both pre- and post-tested with questions that placed the color words pre-nominally.

As predicted, when children are exposed to color adjectives in post-nominal position, they learn them rapidly (after just five training trials per color); when

they are presented with them pre-nominally, as English overwhelmingly tends to do, children show no signs of learning.

*Complete the summary below. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.*

The Hypothesis

Children learn many words quite quickly, but their ability to learn colour words takes longer than expected. In fact, despite **5** ..... many four-year olds still struggle to arrange objects into colour categories. Scientists have hypothesised that this is due to the **6** ..... of the adjectives in a phrase or sentence and the challenges this presents.

While objects consist of a number of **7** ..... that can be used to recognise other similar objects, the **8** ..... of a colour cannot be developed using the same approach. As a consequence, the way colour words tend to be used in English may be **9** ..... to children.

5. Bài tập 5

REDUCING ERRORS IN MEMORY

Sleep may reduce mistakes in memory, according to a first-of-its-kind study led by a scientist at Michigan State University.

The findings, which appear in the September issue of the journal Learning El Memory, have practical implications for many people, from students doing multiple-choice tests to elderly people confusing their medicine, says Kimberly Fenn, principal investigator and assistant professor of psychology.

'It's easy to muddle things in your mind,' Fenn says. This research suggests that after sleep, you're better able to pick out the incorrect parts of that memory.' Fenn and colleagues from the University of Chicago and Washington University in St Louis studied the presence of incorrect or false memory in groups of college students. While previous research has shown that sleep improves memory, this study is the first one that looks at errors in memory, she said.

Study participants were 'trained' by being shown or listening to lists of words. Then, twelve hours later, they were shown individual words and asked to identify which words they had seen or heard in the earlier session. One group of students was trained at 10 a.m. and tested at 10 p.m. after the course of a normal sleepless day. Another group was trained at night and tested twelve hours later in the morning, after about six hours of sleep. Three experiments were conducted. In each experiment, the results showed that students who had

slept did not have as many problems with false memory and chose fewer incorrect words.

How does sleep help? The answer isn't known, Fenn said, but she suspects it may be due to sleep strengthening the source of the memory. The source, or context in which the information is acquired, is a vital element of the memory process. In other words, it may be easier to remember something if you can also remember where you first heard or saw it. Or perhaps the people who didn't sleep as much during the study received so much other information during the day that this affected their memory ability, Fenn said.

Further research is needed, she said, adding that she plans to study different population groups, particularly the elderly. 'We know older individuals generally have worse memory performance than younger individuals. We also know from other research that elderly individuals tend to be more prone to false memories,' Fenn said. 'Given the work we've done, it's possible that sleep may actually help them to reject this false information. And potentially this could help to improve their quality of life.'

Adapted from Michigan State University News

http://news.msu.edu/story/6804

Questions 1-5

*Complete the summary using the list of words and phrases, **A-J**, below.*

Fenn's Memory Experiments

The groups in the study saw or heard lists of words at **1** …….. times of the day. After **2** ……. hours, the groups tried to identify these words correctly in a test. Before the test, one group had **3** …… sleep and chose the words in the evening. The other group had their test in the morning.

In three experiments, the results were **4** ……. the groups that had slept during the experiment remembered **5** …… words correctly than the other groups.

A. more
B. complex
C. 12
D. six
E. less
F. ten
G. different
H. no
I. fewer
J. the same

6. Bài tập 6

OUT OF AFRICA: SOLAR ENERGY FROM THE SAHARA

Vivienne Wait reports on how the Sahara Desert could offer a truly green solution to Europe's energy problems.

A. For years, the Sahara has been regarded by many Europeans as a terra incognita* of little economic value or importance. But this idea may soon change completely. Politicians and scientists on both sides of the Mediterranean are beginning to focus on the Sahara's potential to provide power for Europe in the future. They believe the desert's true value comes from the fact that it is dry and empty. Some areas of the Sahara reach 45 degrees centigrade on many afternoons. It is, in other words, a gigantic natural storehouse of solar energy.

B. A few years ago, scientists began to calculate just how much energy the Sahara holds. They were astonished at the answer. In theory, a 90,600 square kilometre chunk of the Sahara - smaller than Portugal and a little over 1% of its total area - could yield the same amount of electricity as all the world's power plants combined. A smaller square of 15,500 square kilometres - about the size of Connecticut - could provide electricity for Europe's 500 million people. 'I admit I was sceptical until I did the calculations myself,' says Michael Pawlyn, director of Exploration Architecture, one of three British environmental companies comprising the Sahara Forest Project, which is testing solar plants in Oman and the United Arab Emirates. Pawlyn calls the Sahara's potential 'staggering'.

C. At the moment, no one is proposing the creation of a solar power station the size of a small country. But a relatively well-developed technology exists, which

proponents say could turn the Sahara's heat and sunlight into a major source of electricity - Concentrating Solar Power (CSP). Unlike solar panels, which convert sunlight directly into electricity, CSP utilises mirrors which focus light on water pipes or boilers to produce very hot steam to operate the turbines of generators. Small CSP plants have produced power in California's Mojave Desert since the 1980s. The Sahara Forest Project proposes building CSP plants in areas below sea level (the Sahara has several such depressions) so that sea water can flow into them. This water would then be purified and used for powering turbines and washing dust off the mirrors. Waste water would then supply irrigation to areas around the stations, creating lush oases - hence the 'forest' in the group's name.

D. But producing Significant quantities of electricity means building huge arrays of mirrors and pipes across hundreds of miles of remote desert, which is expensive. Gerry Wolff, an engineer who heads DESERTEC, an international consortium of solar-power scientists, says they have estimated it will cost about $59 billion to begin transmitting power from the Sahara by 2020.

E. Building plants is just part of the challenge. One of the drawbacks to CSP technology is that it works at maximum efficiency only in sunny, hot climates - and deserts tend to be distant from population centres. To supply Europe with 20% of its electricity needs, more than 19,300 kilometres of cables would need to be laid under the Mediterranean, says Gunnar Asplund, head of HVDC research at ABB Power Technologies in Ludvika, Sweden. Indeed, to use renewable sources of power, including solar, wind and tidal, Europe will need to build completely new electrical grids. That's because existing infrastructures, built largely for the coal-fired plants that supply 80% of Europe's power, would not be suitable for carrying the amount of electricity generated by the Sahara.

Germany's government-run Aerospace Centre, which researches energy, estimates that replacing those lines could raise the cost of building solar plants in the Sahara and sending significant amounts of power to Europe to about $485 billion over the next 40 years. Generous government subsidies will be needed. 'Of course it costs a lot of money,' says Asplund. 'It's a lot cheaper to burn coal than to make solar power in the Sahara.'

F. Meanwhile, some companies are getting started. Seville engineering company Abengoa is building one solar - thermal plant in Algeria and another in Morocco, while a third is being built in Egypt by a Spanish-Japanese joint venture. The next step will be to get cables in place. Although the European Parliament has passed a law that aids investors who help the continent reach its goal of getting 20% of its power from renewable energy by 2020, it could take years to create the necessary infrastructure.

G. Nicholas Dunlop, secretary-general of the London-based NGO e-Parliament, thinks companies should begin transmitting small amounts of solar power as soon as the North African plants begin operating, by linking a few cable lines under the Med. 'I call it the Lego method,' he says. 'Build it piece by piece.' If It can be shown that power from the Sahara can be produced profitably, he says, companies and governments will soon jump in. If they do, perhaps airplane passengers flying across the Sahara will one day count the mirrors and patches of green instead of staring at sand.

adapted from Time Magazine

*terra incognita - Latin, meaning 'an unknown land'

*Complete the summary below. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.*

Concentrating Solar Power (CSP)

Unlike solar panels, CSP concentrates the sun's rays on boilers by using **10** …… The resulting heat produces high-temperature **11** ……., which in turn moves the turbines which generate electricity. CSP plants will be situated in **12** ……. to allow sea water to run in. This, when purified, can be used to wash the equipment. The resulting dirty water will be used for **13** …….. around the power plant, and in this way oases will be formed.

7. Bài tập 7

SPEED READING

What is speed reading, and why do we need it?

A. Speed reading is not just about reading fast. It is also about how much information you can remember when you have finished reading. The World Championship Speed-Reading Competition says that its top competitors average between 1,000 and 2,000 words a minute. But they must remember at least 50 percent of this in order to qualify for the competition.

B. Nowadays, speed reading has become an essential skill in any environment where people have to master a large volume of information. Professional workers need reading skills to help them get through many documents every day, while students under pressure to deal with assignments may feel they have to read more and read faster all the time.

C. Although there are various methods to increase reading speed, the trick is deciding what information you want first. For example, if you only want a rough outline of an issue, then you can skim the material quickly and extract the key facts. However, if you need to understand every detail in a document, then you must read it slowly enough to understand this.

D. Even when you know how to ignore irrelevant detail, there are other improvements you can make to your reading style which will increase your speed. For example, most people can read much faster if they read silently. Reading each word aloud takes time for the information to make a complete circuit in your brain before being pronounced. Some researchers believe that as long as the first and last letters are in place, the brain can still understand

the arrangement of the other letters in the word because it logically puts each piece into place.

E. Chunking is another important method. Most people learn to read either letter by letter or word by word. As you improve, this changes. You will probably find that you are fixing your eyes on a block of words, then moving your eyes to the next block of words, and so on. You are reading blocks of words at a time, not individual words one by one. You may also notice that you do not always go from one block to the next: sometimes you may move back to a previous block if you are unsure about something.

F. A skilled reader will read a lot of words in each block. He or she will only look at each block for an instant and will then move on. Only rarely will the reader's eyes skip back to a previous block of words. This reduces the amount of work that the reader's eyes have to do. It also increases the volume of information that can be taken in over a given period of time.

G. On the other hand, a slow reader will spend a lot of time reading small blocks of words. He or she will skip back often, losing the flow and structure of the text, and muddling their overall understanding of the subject. This irregular eye movement quickly makes the reader tired. Poor readers tend to dislike reading because they feel it is difficult to concentrate and comprehend written information.

H. The best tip anyone can have to improve their reading speed is to practise. In order to do this effectively, a person must be engaged in the material and want to know more. If you find yourself constantly having to re-read the same paragraph, you may want to switch to reading material that grabs your attention. If you enjoy what you are reading, you will make quicker progress.

Adapted from speed-reading-techniques.com

Questions 1-6

The reading passage has seven paragraphs, A-H.

Which paragraph contains the following information?

Write the correct letter, ***A-H****.*

NB *You may use any letter more than once.*

1. the types of people who need to read more quickly
2. the fastest reading speeds
3. how a reader can become confused
4. why reading material should be interesting
5. a definition of speed reading
6. what you should consider before you start reading

8. Bài tập 8

EXAMINING THE PLACEBO EFFECT

BY STEVE SILBERMAN

The fact that taking a fake drug can powerfully improve some people's health - the so-called placebo effect - was long considered an embarrassment to the serious practice of pharmacology, but now things have changed.

Several years ago, Merck, a global pharmaceutical company, was falling behind its rivals in sales. To make matters worse, patents on five blockbuster drugs were about to expire, which would allow cheaper generic products to flood the market. In interviews with the press, Edward Scolnick, Merck's Research Director, presented his plan to restore the firm to pre-eminence. The key to his strategy was expanding the company's reach into the anti-depressant, market, where Merck had trailed behind, while competitors like Pfizer and GlaxoSmithKline had created some of the best-selling drugs in the world. "To remain dominant in the future", he told one media company, "we need to dominate the central nervous system."

His plan hinged on the success of an experimental anti-depressant codenamed MK-869. Still, in clinical trials, it was a new kind of medication that exploited brain chemistry in innovative ways to promote feelings of well-being. The drug tested extremely well early on, with minimal side effects. Behind the scenes, however, MK-869 was starting to unravel. True, many test subjects treated with the medication felt their hopelessness and anxiety lift. But so did nearly the same number who took a placebo, a look-alike pill made of milk sugar or

another inert substance given to groups of volunteers in subsequent clinical trials to gauge the effectiveness of the real drug by comparison. Ultimately, Merck's venture into the anti-depressant market failed. In the jargon of the industry, the trials crossed the "futility boundary".

MK-869 has not been the only much-awaited medical breakthrough to be undone in recent years by the placebo effect and it's not only trials of new drugs that are crossing the futility boundary. Some products that have been on the market for decades are faltering in more recent follow-up tests. It's not that the old medications are getting weaker, drug developers say. It's as if the placebo effect is somehow getting stronger. The fact that an increasing number of medications are unable to beat sugar pills has thrown the industry into crisis. The stakes could hardly be higher. To win FDA* approval, a new medication must beat placebo in at least two authenticated trials. In today’s economy, the fate of a well-established company can hang on the outcome of a handful of tests.

Why are fake pills suddenly overwhelming promising new drugs and established medicines alike? The reasons are only just beginning to be understood. A network of independent researchers is doggedly uncovering the inner workings and potential applications of the placebo effect.

A psychiatrist, William Potter, who knew that some patients really do seem to get healthier for reasons that have more to do with a doctor's empathy than with the contents of a pill, was baffled by the fact that drugs he had been prescribing for years seemed to be struggling to prove their effectiveness. Thinking that a crucial factor may have been overlooked, Potter combed through his company’s

database of published and unpublished trials— including those that had been kept secret because of high placebo response. His team aggregated the findings from decades of anti-depressant trials, looking for patterns and trying to see what was changing over time. What they found challenged some of the industry's basic assumptions about its drug-vetting process.

Assumption number one was that if a trial were managed correctly, a medication would perform as well or badly in a Phoenix hospital as in a Bangalore clinic. Potter discovered, however, that geographic location alone could determine the outcome. By the late 1990s, for example, the anti-anxiety drug Diazepam was still beating placebo in France and Belgium. But when the drug was tested in the US, it was likely to fail. Conversely, a similar drug, Prozac, performed better in America than it did in western Europe and South Africa. It was an unsettling prospect FDA approval could hinge on where the company chose to conduct a trial.

Mistaken assumption number two was that the standard tests used to gauge volunteers' improvement in trials yielded consistent results. Potter and his colleagues discovered that ratings by trial observers varied significantly from one testing site to another. It was like finding out that the judges in a tight race each had a different idea about the placement of the finish line.

After some coercion by Potter and others, the National Institute of Health (NIH) focused on the issue in 2000, hosting a three-day conference in Washington, and this conference launched a new wave of placebo research in academic laboratories in the US and Italy that would make significant progress toward solving the mystery of what was happening in clinical trials.

In one study last year, Harvard Medical School researcher Ted Kaptchuk devised a clever strategy for testing his volunteers' response to varying levels of therapeutic ritual. The study focused on a common but painful medical condition that costs more than $40 billion a year worldwide to treat. First, the volunteers were placed randomly in one of three groups. One group was simply put on a waiting list; researchers know that some patients get better just because they sign up for a trial. Another group received placebo treatment from a clinician who declined to engage in small talk. Volunteers in the third group got the same fake treatment from a clinician who asked them questions about symptoms, outlined the causes of the illness, and displayed optimism about their condition.

Not surprisingly, the health of those in the third group improved most. In fact, just by participating in the trial, volunteers in this high-interaction group got as much relief as did people taking the two leading prescription drugs for the condition. And the benefits of their "bogus" treatment persisted for weeks afterward, contrary to the belief - widespread in the pharmaceutical industry - that the placebo response is short-lived.

Studies like this open the door to hybrid treatment strategies that exploit the placebo effect to make real drugs safer and more effective, as Potter says- "To really do the best for your patients, you want the best placebo response plus the best drug response".

Adapted from Wired Magazine

* The Food and Drugs Administration (an agency in the United States responsible for protecting public health by assuring the safety of human drugs).

*Complete the summary using the list of words **A-I** below.*

Merck and MK-869

As a result of concerns about increasing **1** ..... in the drugs industry, the pharmaceutical company Merck decided to increase its **2** ..... in the anti-depressant market. The development of the drug MK-869 was seen as the way forward.

Initially, MK-869 had some **3** ....., but later trials revealed a different picture. Although key **4** ..... could be treated with the drug, a sugar pill was proving equally effective. In the end, the **5** ..... indicated that it was pointless continuing with the development of the drug.

A. activity
B. prices
C. success
D. patients
E. tests
F. diseases
G. symptoms
H. competition
I. criticism

9. Bài tập 9

THE BODY

The concept of 'the body' is closely related to the ideas of 'illness' and 'health'.

All of us exist in 'bodies' of different shapes, heights, colours and physical abilities. The main reasons for the differences are genetic, and the fact that people's bodies change as they age. However, a huge range of research indicates that there are social factors too.

Poorer people are more likely to eat 'unhealthy' foods, to smoke cigarettes and to be employed in repetitive, physically difficult work or the opposite: boring, inactive employment. Moreover, their housing conditions and neighbourhoods tend to be worse. All of these factors impact upon the condition of a person's health: the physical shapes of bodies are strongly influenced by social factors. These social factors are also closely linked to emotional wellbeing. People with low or no incomes are more likely to have mental health problems. It is not clear, however, whether poverty causes mental illness, or whether it is the other way around. For example, certain people with mental health issues may be at risk of becoming homeless, just as a person who is homeless may have an increased risk of illnesses such as depression.

There are other types of social factors too. Bodies are young or old, short or tall, big or small, weak or strong. Whether these judgments matter and whether they are positive or negative depends on the cultural and historical context. The culture - and media - of different societies promote very different valuations of

body shapes. What is considered as attractive or ugly, normal or abnormal varies enormously. Currently, for example, in rich societies the idea of slimness is highly valued, but historically this was different. In most societies the ideal body shape for a woman was a 'full figure' with a noticeable belly, while in middle-aged men, a large stomach indicated that they were financially successful in life. In many traditional African and Pacific island cultures, for example, a large body shape was a sign of success and a shape to be aimed at.

It is easy for people to feel undervalued because of factors they have no power to change, for example, their age and height. Equally, they can feel pressured into making changes to their appearance when there is a choice, which in extreme cases can lead to obsessions with weight loss and fitness regimes.

Sociologists, then, are suggesting that we should not just view bodies and minds in biological terms, but also in social terms. The physical body and what we seek to do with it change over time and society. This has important implications for medicine and ideas of health. Thus, the idea of people being 'obese' is physically related to large amounts of processed food, together with lack of exercise, and is therefore a medical issue. However, it has also become a mental health issue and social problem as a result of people coming to define this particular body shape as 'wrong' and unhealthy.

*Using **NO MORE THAN FOUR WORDS** for each, answer the following questions.*

i. In what ways do our bodies physically differ?

ii. Why do our bodies differ physically?

iii. What types of jobs are poor people likely to have?

iv. What aspects of poor people's living environments are not good?

v. What influences how groups of people value bodies?

vi. What have wealthy cultures changed their opinion about?

vii. In the past, what part of the body could indicate that people were rich?

viii. According to sociology, in what ways should we think about the body?

ix. Which two physical factors contribute to whether people are obese or not?

x. What does society say that being obese is?

10. Bài tập 10

THE WORLD WIDE WEB FROM ITS ORIGINS

Science inspired the World Wide Web, and the Web has responded by changing science.

'Information Management: A Proposal'. That was the bland title of a document written in March 1989 by a then little- known computer scientist called Tim Berners-Lee, who was working at CERN, Europe's particle physics laboratory, near Geneva. His proposal, modestly called the World Wide Web, has achieved far more than anyone expected at the time.

In fact, the Web was invented to deal with a specific problem. In the late 1980s, CERN was planning one of the most ambitious scientific projects ever, the Large Hadron Collider*, or LHC. As the first few lines of the original proposal put it, 'Many of the discussions of the future at CERN and the LHC end with the question "Yes, but how will we ever keep track of such a large project?" This proposal provides an answer to such questions.

The Web, as everyone now knows, has many more uses than the original idea of linking electronic documents about particle physics in laboratories around the world. But among all the changes it has brought about, from personal social networks to political campaigning, it has also transformed the business of doing science itself, as the man who invented it hoped it would.

It allows journals to be published online and links to be made from one paper to another. It also permits professional scientists to recruit thousands of amateurs to give them a hand. One project of this type, called GalaxyZoo, used these unpaid workers to classify one million images of galaxies into various types (spiral, elliptical and irregular). This project, which was intended to help

astronomers understand how galaxies evolve, was so successful that a successor has now been launched, to classify the brightest quarter of a million of them in finer detail. People working for a more modest project called Herbaria@home examine scanned images of handwritten notes about old plants stored in British museums. This will allow them to track the changes in the distribution of species in response to climate change.

Another new scientific application of the Web is to use it as an experimental laboratory. It is allowing social scientists, in particular, to do things that were previously impossible. In one project, scientists made observations about the sizes of human social networks using data from Facebook. A second investigation of these networks, produced by Bernardo Huberman of HP Labs, Hewlett-Packard's research arm in Pato Alto, California, looked at Twitter, a social networking website that allows people to post short messages to long lists of friends.

At first glance, the networks seemed enormous - the 300,000 Twitterers sampled had 80 friends each, on average (those on Facebook had 120), but some listed up to 1,000. Closer statistical inspection, however, revealed that the majority of the messages were directed at a few specific friends. This showed that an individual's active social network is far smaller than his 'clan'. Dr Huberman has also helped uncover several laws of web surfing, including the number of times an average person will go from web page to web page on a given site before giving up, and the details of the 'winner takes all' phenomenon, whereby a few sites on a given subject attract most of the attention, and the rest get very little.

Scientists have been good at using the Web to carry out research. However, they have not been so effective at employing the latest web-based social-

networking tools to open up scientific discussion and encourage more effective collaboration.

Journalists are now used to having their articles commented on by dozens of readers. Indeed, many bloggers develop and refine their essays as a result of these comments. Yet although people have tried to have scientific research reviewed in the same way, most researchers only accept reviews from a few anonymous experts. When Nature, one of the world's most respected scientific journals, experimented with open peer review in 2006, the results were disappointing. Only 5% of the authors it spoke to agreed to have their article posted for review on the Web - and their instinct turned out to be right, because almost half of the papers attracted no comments. Michael Nielsen, an expert on quantum computers, belongs to a new wave of scientist bloggers who want to change this. He thinks the reason for the lack of comments is that potential reviewers lack incentive.

adapted from The Economist

* The Large Hadron Collider (LHC) is the world's largest particle accelerator and collides particle beams. It provides information on fundamental questions of physics.

*Answer the questions below. Choose **NO MORE THAN TWO WORDS** from the passage for each answer.*

1. Whose writing improves as a result of feedback received from readers?
2. What type of writing is not reviewed extensively on the Web?
3. Which publication invited authors to publish their articles on the World Wide Web?

11. Bài tập 11

THE MIT FACTOR: CELEBRATING 150 YEARS OF MAVERICK GENIUS

By Ed Pilkington

The Massachusetts Institute of Technology has led the world into the future for 150 years with scientific innovations.

The musician Yo-Yo Ma's cello may not be the obvious starting point for a journey into one of the world's great universities. But, as you quickly realise when you step inside the Massachusetts Institute of Technology, there's precious little going on that you would normally see on a university campus. The cello, resting in a corner of MIT's celebrated media laboratory — a hub of creativity — looks like any other electric classical instrument. But it is much more. Machover, the composer, teacher and inventor responsible for its creation, calls it a 'hyperinstrument', a sort of thinking machine that allows Ma and his cello to interact with one another and make music together. 'The aim is to build an instrument worthy of a great musician like Yo-Yo Ma that can understand what he is trying to do and respond to it,' Machover says. The cello has numerous sensors across its body and by measuring the pressure, speed and angle of the virtuoso's performance it can interpret his mood and engage with it, producing extraordinary new sounds. The virtuoso cellist frequently performs on the instrument as he tours around the world.

Machover's passion for pushing at the boundaries of the existing world to extend and unleash human potential is not a bad description of MIT as a whole. This unusual community brings highly gifted, highly motivated individuals

together from a vast range of disciplines, united by a common desire: to leap into the dark and reach for the unknown.

The result of that single unifying ambition is visible all around. For the past 150 years, MIT has been leading the world into the future. The discoveries of its teachers and students have become the common everyday objects that we now all take for granted. The telephone, electromagnets, radars, high-speed photography, office photocopiers, cancer treatments, pocket calculators, computers, the Internet, the decoding of the human genome, lasers, space travel ... the list of innovations that involved essential contributions from MIT and its faculty goes on and on.

From the moment MIT was founded by William Barton Rogers in 1861, it was clear what it was not. While Harvard stuck to the English model of a classical education, with its emphasis on Latin and Greek, MIT looked to the German system of learning based on research and hands-on experimentation. Knowledge was at a premium, but it had to be useful.

This down-to-earth quality is enshrined in the school motto, *Mens et manus* - Mind and hand - as well as its logo, which shows a gowned scholar standing beside an ironmonger bearing a hammer and anvil. That symbiosis of intellect and craftsmanship still suffuses the institute's classrooms, where students are not so much taught as engaged and inspired.

Take Christopher Merrill, 21, a third-year undergraduate in computer science. He is spending most of his time on a competition set in his robotics class. The contest is to see which student can most effectively program a robot to build a house out of blocks in under ten minutes. Merrill says he could have gone for

the easiest route - designing a simple robot that would build the house quickly. But he wanted to try to master an area of robotics that remains unconquered — adaptability, the ability of the robot to rethink its plans as the environment around it changes, as would a human. 'I like to take on things that have never been done before rather than to work in an iterative way just making small steps forward,' he explains.

Merrill is already planning the start-up he wants to set up when he graduates in a year's time. He has an idea for an original version of a contact lens that would augment reality by allowing consumers to see additional visual information. He is fearful that he might be just too late in taking his concept to market, as he has heard that a Silicon Valley firm is already developing something similar. As such, he might become one of many MIT graduates who go on to form companies that fail. Alternatively, he might become one of those who go on to succeed in spectacular fashion. And there are many of them. A survey of living MIT alumni* found that they have formed 25,800 companies, employing more than three million people, including about a quarter of the workforce of Silicon Valley.

What MIT delights in is taking brilliant minds from around the world in vastly diverse disciplines and putting them together. You can see that in its sparkling new David Koch Institute for Integrative Cancer Research, which brings scientists, engineers and clinicians under one roof.

Or in its Energy Initiative, which acts as a bridge for MIT's combined work across all its five schools, channelling huge resources into the search for a solution to global warming. It works to improve the efficiency of existing energy

sources, including nuclear power. It is also forging ahead with alternative energies from solar to wind and geothermal, and has recently developed the use of viruses to synthesise batteries that could prove crucial in the advancement of electric cars.

In the words of Tim Berners-Lee, the Briton who invented the World Wide Web, 'It's not just another university. Even though I spend my time with my head buried in the details of web technology, the nice thing is that when I do walk the corridors, I bump into people who are working in other fields with their students that are fascinating, and that keeps me intellectually alive.'

adapted from the Guardian

* people who have left a university or college after completing their studies there.

*Answer the questions below. Choose **NO MORE THAN TWO WORDS** from the reading passage for each answer.*

10. What proportion of workers at Silicon Valley are employed in companies set up by MIT graduates?

11. What problem does MIT's Energy Initiative aim to solve?

12. Which 'green' innovation might MIT's work with viruses help improve?

13. In which part of the university does Tim Berners-Lee enjoy stimulating conversations with other MIT staff?

12. Bài tập 12

Read the following text about pedestrian zones in cities.

A large number of European towns and cities have made part of their centres car-free since the early 1960s. These are often accompanied by car parks on the edge of the pedestrianised zone, and, in the larger cases, park and ride schemes. Central Copenhagen is one of the largest and oldest examples: the auto-free zone is centred on Strøget, a pedestrian shopping street, which is in fact not a single street but a series of interconnected avenues which create a very large auto-free zone, although it is crossed in places by streets with vehicular traffic. Most of these zones allow delivery trucks to service the businesses located there during the early morning, and street-cleaning vehicles will usually go through these streets after most shops have closed for the night. In North America, where a more commonly used term is pedestrian mall, such areas are still in their infancy. Few cities have pedestrian zones, but some have pedestrianised single streets. Many pedestrian streets are surfaced with cobblestones, or pavement bricks, which discourage any kind of wheeled traffic, including wheelchairs. They are rarely completely free of motor vehicles.

Fill the gaps below with NO MORE THAN 3 WORDS from the text.

1. In some cases, people are encouraged to park _____ of the town or city centre.
2. The only vehicles permitted in most pedestrian zones are those used for _____ or _____ cleaning.
3. Certain types of road surface can be used to _____ traffic.

13. Bài tập 13

Read the following passage about nocturnal animals.

Nocturnality is an animal behaviour characterised by activity during the night and sleep during the day. The common adjective is "nocturnal", versus its opposite “diurnal”.

Nocturnal creatures generally have highly developed senses of hearing and smell, and specially adapted eyesight. Such traits can help animals such as the Helicoverpa zea moth to avoid predators. Some animals, such as cats and ferrets, have eyes that can adapt to both low-level and bright day levels of illumination. Others, such as bushbabies and some bats, can function only at night. Many nocturnal creatures, including most owls, have large eyes in comparison with their body size to compensate for the lower light levels at night.

Being active at night is a form of niche differentiation, where a species' niche is partitioned not by the amount of resources but by time (i.e. temporal division of the ecological niche). For example, hawks and owls can hunt the same field or meadow for the same rodents without conflict because hawks are diurnal and owls are nocturnal.

Fill the gaps in the summary using words from the list below it.

Nocturnal animals sleep during the daytime, whereas _____ animals are awake during the day and they _____ at night. Animals that are active at night tend to have _____ hearing and smell, and they may have _____ eyesight. Nocturnality allows animals to hunt for prey without having to _____ with predators that are active during daylight hours.

most, sensitive, asleep, conflict, diurnal, compete, exceptional, sleep