lingua inglese

Procedura di selezione per la copertura di n. 25 posti per l'accesso al profilo professionale di Traduttore interprete come di seguito riportati:

- *5 posti lingua inglese*
- *5 posti lingua francese*
- *5 posti lingua spagnolo*
- *5 posti lingua tedesco*
- *5 posti lingua russo*

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Selezione di n. 400 quesiti a risposta multipla per ciascuna lingua in esame

Pediatricians and others are so anxious to promote breast-feeding, they've been reluctant to confront the fact that breast milk is not as good as it could be and as it used to be. It has become very clear to the medical community that over the past 25 to 30 years, a number of toxic chemicals have found their way into breast milk - PCBs, DDT, solvents and heavy metals. People absorb environmental chemicals from polluted air and contaminated foods - fish and animal products in particular. Because chemicals like polychlorinated biphenyls are fat soluble, they are not readily excreted from the body. Instead, they attach to fat cells, where they may stay for a lifetime. But if a woman breast-feeds her child, these fat cells are activated to produce milk. The contaminants, clinging to the fat, go directly into the milk. A woman can shift 20 percent of her total body burden of contaminants into her infant in the first six months of breast-feeding. The few studies on the long-term effects of pollutants in breast milk that have been done show conflicting results. Experts agree that more research is needed. On a positive note, a researcher of the Natural Resources Defense Council stated that levels of PCBs, DDT and dioxins in breast milk have gone down in Western countries, largely because of bans or strict regulatory controls on these chemicals.

1 **The medical community has found out that:**

A the infant absorbs chemical directly from polluted air

B breast-feeding is not as secure as it used to be, since several toxic chemicals absorbed from air and foods go directly into the milk

C solvents are not fat soluble like PCBs

D because chemicals are not fat soluble they are not readily excreted from the body

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2 **Over the past 25 to 30 years:**

A pediatricians have begun to question the safety of breast-feeding

B PCBs, DDT, solvents and heavy metals have found their way into breast milk

C environmental pollution has definitely increased

D solvents and heavy metals have contaminated human fat cells, in particular of nursing women

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3 **When chemicals are absorbed by human body they:**

A become fat soluble

B need about six months to be excreted

C immediately attach to fat cells

D attach to breast-feeding women's fat cells since they are activated to produce milk

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4 **Levels of some chemicals in breast milk:**

A are lower in Western countries thanks to strict controls

B have had a 20 percent rise over the past 30 years

C are higher in the first six months of breast-feeding

D go easily down because they are fat soluble

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5 **In the first six months of breast-feeding:**

A fat cells risk to stop to produce milk because of contaminants clung to them

B a woman can shift her total body burden of contaminants into her infant

C 20 percent of the total body of chemicals absorbed by the mother's body is excreted

D the infant can receive 20 percent of chemicals absorbed by his mother's body

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6 **Experts maintain that:**

A the studies on the long-term effects of pollutants in breast milk are sufficient to show that breast milk is a danger for babies

B breast-feeding is safer than before thanks to bans and strict controls on breast milk

C as the results of the studies done are still conflicting more research is needed

D breast milk is as good as it used to be

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7 **Fat cells:**

A are a carrier of contaminants for breast milk

B protect breast milk against toxic chemicals

C produce pollutants which go directly into breast milk

D contain 20 percent of the mother's total body burden of contaminants

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8 **The set of rules on chemicals:**

A has not been sufficient to lower the levels of dioxins in breast milk

B has been able to reduce the levels of toxic chemicals like DDT in Western countries

C has particularly focused on fish and animal products which are the most exposed to the risk of pollution

D has reduced the levels of PCBs in breast milk but has not solved the problem of dioxins which can also be found in it

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Widely recognized as South Africa's leading research institution, the Medical Research Council is not often second-guessed. But when the council issued mortality figures showing that AIDS had become the leading cause of death in South Africa, it found itself pitted squarely against what in any other country would seem an unlikely adversary: the government. In defending a policy that has been widely criticized for failing to provide therapy to poor people infected with the AIDS virus, the government has pointed to violence and accidents as the country's leading causes of death and said that South Africa's scarce public health funds should be steered toward those priorities. But the research council's report challenged the underpinnings of the government's policy. More than 4 million South Africans are infected with HIV. But African National Congress has questioned the link between HIV and AIDS and until recently had refused to administer even reduced-priced antiretroviral medicines, which researchers generally agree slow the replication of HIV cells.

9 **African National Congress:**

A acknowledges the link between HIV and AIDS, but cannot meet the excessive expense of antiretroviral medicines

B has refused to administer antiretroviral medicines because they do not slow the replication of HIV cells

C throws doubt upon the link between HIV and AIDS

D has accepted to buy antiretroviral medicines though questioning the link between HIV and AIDS

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10 **South African policy has been criticized:**

A for neglecting violence and accidents which are the country's leading causes of death

B for underestimating the problem of AIDS which is the leading cause of death in South Africa

C for questioning the administration of a therapy to people infected with AIDS virus

D for steering all public health funds toward the problem of violence and accidents

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11 **The Medical Research Council:**

A expected the government to oppose the report about mortality rate brought about by AIDS

B issued mortality figures showing that AIDS would soon become the leading cause of death in South Africa

C was supported by government in spite of some initial perplexity

D challenged the government's policy

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12 **Researchers:**

A maintain that antiretroviral medicines can slow the replication of HIV cells

B have reduced the price of antiretroviral medicines

C affirm that AIDS is one of the main causes of death in South Africa together with violence and accidents

D criticize the government for failing to provide the correct therapy to people infected with the AIDS virus

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13 **South Africa's government failed to provide therapy to help poor people against AIDS:**

A after exhausting the scarce public health funds

B because antiretroviral medicines were too expensive

C although the statistics showed that AIDS has become the leading cause of death in the country

D because there is no link between HIV and AIDS

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14 **The research council's report:**

A showed that public health funds had to be spent to face up to the spreading of AIDS

B stated that antiretroviral medicines are able to slow the replication of HIV cells

C advised to reduce the price of antiretroviral medicines

D has questioned the link between HIV and AIDS

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15 **In any other country:**

A a research institution would never challenge the government's policy

B the leading research institution is often second-guessed

C the leading research institution would have agreed with the government's policy against violence and accidents

D a government would have never questioned the data issued by a leading research institution

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16 **More than 4 millions South Africans:**

A are ill with AIDS

B are receiving antiretroviral medicines

C need a therapy to slow the replication of HIV cells

D are waiting for a cut in the price of antiretroviral medicines

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Four years ago - as the wave of technology-driven change swept through many economies around the world and Singapore found itself under increasing challenge to adapt or risk falling behind and suffering a potentially catastrophic collapse in its high standards of living - the government decided it had to reform the education system. As a small island-state without natural resources, Singapore depends on the skills and resourcefulness of its people to attract and retain investment in manufacturing and a wide range of service industries, from banking and finance to logistics and the law. The first step to having a quality labor force is to develop a quality education system. The program is known officially as "Thinking Schools, Learning Nation." Its aim is to shift emphasis away from the old industrial models on which schools were based - the model of the factory, processing raw materials into a product that met standardized quantity and quality requirements - and away from the metaphor of the machine - well-oiled, with everything hierarchically controlled from the top. Instead schools must become learning organizations in the fullest sense, open to new ideas and drawing upon a wider range of learning resources in their communities and beyond. Schools have to prepare tomorrow's Singaporeans for life in a global world.

17 **The "Thinking Schools, Learning Nation" program aims at:**

- **A** preserving the model of the factory on which schools are based
- **B** changing schools into perfect organizations with everything hierarchically controlled from the top
- **C** defending the traditional learning resources
- **D** making modern schools open to new ideas and new learning resources

18 **The wave of change produced by technology in many economies around the world:**

- **A** led to a catastrophic collapse in Singapore's high standards of living
- **B** induced government to reform the education system
- **C** did not trouble Singapore's government
- **D** made Singapore fall inevitably behind

19 **The skills and resourcefulness of Singaporeans are:**

- **A** indispensable to the economic development of the state
- **B** not enough appreciated
- **C** important but not sufficient to guarantee investment
- **D** used to develop manufacturing

20 **A quality education system:**

- **A** is essential to have a quality labor force
- **B** is based on the respect of well-established models
- **C** emphasizes the model of the factory which aims at meeting the request of standardized quantity and quality requirements
- **D** has to follow the models of the factory and the well-oiled machine

21 **Which is the future of schools in Singapore?**

- **A** They won't stop being hierarchically controlled organizations
- **B** They will be based on industrial models
- **C** They will turn to their communities for learning resources
- **D** They will become the metaphor of the well-oiled machine

22 **Four years ago:**

A Singapore suffered a collapse in its high standards of living

B the world wave of technology-driven change constrained Singapore to try to adapt

C Singapore was not able to accept the increasing challenge to adapt to the new world economic situation

D Singapore's economy depended on natural resources which are now exhausted

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23 **A quality labor force:**

A depends on a school hierarchically controlled from the top

B is able to attract investment principally in banking and finance

C does not depend on a quality education system

D allows the country to get investment in manufacturing and a wide range of service industries

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24 **The reform of the education system:**

A started before the wave of change brought about by technology in many economies

B replaces the model of the factory with the metaphor of the machine

C is necessary to prepare qualified and global-minded citizens

D was slowed down by the difficulty in putting aside the old industrial models

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A DNA analysis has given tentative support to the belief that the remains in an ancient lead coffin are those of the evangelist Luke. DNA has been extracted from a tooth in the coffin. The conclusion was that the DNA was characteristic of people living near the region of Antioch, on the eastern Mediterranean, where Luke is said to have been born. Radiocarbon dating of the tooth indicated that it belonged to someone who died at some time from A.D. 72 to 416 B.C. The evangelist, according to ancient sources, was born in Antioch, worked as a doctor and died at age 84 in about 150 in Thebes, Greece. The coffin with his remains was taken to Constantinople, the capital of the Byzantine Empire, around 338 and was later moved to Padua, Italy. The spread in the radiocarbon dating indicates at least two possibilities. One is that the body was that of a man who died at the same time as Luke; the other is that for some reason a new body was put in the coffin in Constantinople around 300. To help distinguish between the two, experts on genetics analyzed fragments of DNA from the canine tooth found in the coffin and sought to compare them with likely living representatives of the ancient populations of Antioch and Constantinople. The dimensions of the coffin exactly fit the tomb in Thebes considered to be Luke's. In the coffin was a skeleton, almost complete apart from its head - the tooth was found on the floor of the coffin - and several coins, a sign the body was venerated as a relic.

25 **The coins found in the ancient lead coffin:**

- **A** are a sign that the dead person was a noble
- **B** indicate that the body was looked upon as a relic
- **C** date back to 416 B.C
- **D** belonged to the ancient populations of Antioch and Constantinople

26 **After the radiocarbon dating of the tooth, experts:**

- **A** compared the fragments of DNA with likely living representatives of the ancient populations of Antioch and Constantinople
- **B** moved the coffin to Padua
- **C** concluded that the DNA was characteristic of people living near the region of Antioch
- **D** were able to distinguish between the two possibilities indicated by the radiocarbon dating

27 **Together with the tooth:**

- **A** a skull was found, besides several coins
- **B** a complete skeleton was found
- **C** the head of the skeleton was not found
- **D** few remains of a skeleton were found

28 **In addition to the DNA analysis:**

- **A** the fact that the dimensions of the coffin perfectly fit Luke's supposed tomb strengthens the hypothesis that the remains in the coffin belonged to him
- **B** radiocarbon dating has also cleared up the identity of the skeleton found in the coffin
- **C** radiocarbon dating was necessary to indicate that the tooth belonged to someone who died at age 84
- **D** the coins found in the coffin confirmed that the tooth belonged to the evangelist Luke since they date back to 300

29 **According to ancient sources:**

- **A** Luke was born in and died in Antioch
- **B** the coffin was taken to the capital of the Byzantine Empire around 338
- **C** Luke worked as a doctor
- **D** Luke died at the age of 84 in Constantinople

30 **Radiocarbon dating:**

A indicates that the evangelist was born around 300

B indicates that the evangelist died in 150

C revealed that the tooth could only belong to a man who died at the same time as Luke

D is not able to give a definitive identity to the owner of the tooth

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31 **A canine tooth found in an ancient coffin:**

A is supposed to belong to the evangelist Luke

B probably belonged to someone who lived near Padua

C dates exactly back to 416 B.C

D has been moved to Padua, Italy, by experts on genetics

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32 **Experts on genetics:**

A analyzed some fragments of the tooth

B maintain that Luke's body was definitely replaced with a new body put in the coffin in Constantinople

C extracted fragments of DNA from the canine tooth

D analysed a tooth found in a coffin in Costantinople

Early in the nineteenth century, there were a number of famines in Ireland, culminating in the Great Famine of 1845 - '49, when about a million people died and a further million went into exile. The population increased from an estimated figure of four and a half million in 1800 to over eight million by 1841. The pressure of this vast increase exacerbated the fragile subsistence economy of the period, as land became subdivided into smaller and smaller plots. Destitution was already a fact of life for many and evictions became regular occurrences in the Irish countryside. Most of the impoverished population depended on the potato as their staple food product. Disaster struck in August 1845, when a killer fungus started to destroy the potato crop. By 'black forty-seven', people were dying in their thousands from starvation-related diseases. The workhouses, built in the early 1840s to relieve appalling poverty, were unable to cope with the numbers seeking admission. Various parsimonious relief measures were inadequate to deal with the scale of the crisis. The number of evictions increased. This process of 'clearance' (as it was called) was aided by the 'quarter-acre clause' in the Poor Law Extension Act of 1847 which excluded from relief anyone who had more than a quarter acre of land. Any such unfortunate person who was starving had to abandon his holding and go to the workhouse if he and his family wanted a chance to survive.

33 **Between 1845 and 1849:**

- **A** the population increased
- **B** the amount of potato crops increased
- **C** the number of workhouses increased
- **D** the numbers seeking admission to the workhouses increased

34 **With the Poor Law Extension Act:**

- **A** new workhouses were built to house the increasing number of poor people
- **B** the unfortunate people who were starving had the chance to go to the workhouse
- **C** a number of people were not deprived of their land
- **D** due to the "quarter-acre clause" a lot of needy families had to abandon their holdings

35 **In the ‘black forty-seven’:**

- **A** a killer fungus started to destroy the potato crop
- **B** anyone who had more than a quarter acre of land was excluded from relief
- **C** land became to be subdivided into smaller and smaller plots
- **D** destitution became a fact of life

36 **The process of 'clearance':**

- **A** consisted in a considerable number of evictions
- **B** was called the ‘quarter acre clause’
- **C** was able to solve the crisis
- **D** excluded anyone who had up to a quarter acre of land

37 **The workhouses crowding:**

- **A** produced the depopulation of the countryside
- **B** was favoured by the increasing number of evictions
- **C** decreased when a further million people went into exile
- **D** exacerbated the fragile subsistence economy of the period

38 **In 1845:**

A a large number of Irish people were already poverty-stricken

B population began to impoverish

C destitution did not involve many people yet

D there were a number of famines in Ireland

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39 **Because of the Great Famine of 1845 - '49, in Ireland:**

A a lot of workhouses were built

B potato became the only food product easily available

C a million people were compelled to leave the country

D considerable relief measures were taken to deal with the crisis

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40 **Irish economy:**

A was not able to face up to the population increase between 1800 and 1841

B was fragile because a killer fungus had destroyed the potato crop

C could tackle the problem of the population increase by subdividing land into smaller and smaller plots

D faced up to the population increase taking appropriate measures

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People differ widely in their linguistic ability and behaviour - the age at which they begin speaking, for example, and the speed with which they master language. Experts say that language development is probably controlled by many, many genes, each with a small effect, working in many bits of the brain. Rather than language being something that you've got or you haven't, all these genes conspire to place people somewhere on the scale of linguistic ability. The network of language genes may be like a tree. Genes such as FOXP2 could be at the trunk - where sawing through them would knock out lots of aspects of language. Other genes might fine-tune aspects such as grammar further down the line; knocking these out would be analogous to lopping off a branch. FOXP2 belongs to a group that controls the activity of other genes by making a protein that sticks to DNA. FOXP2 is not unique to humans - it is switched on in the lungs and brain of mice. But subtle differences in its sequence or workings may illuminate why humans talk and animals don't, and how our ability evolved. Ultimately, we need to understand how genes give rise to brain structure, and how our brain structure gives rise to language. This job is just beginning: a full grasp of such processes is 50 to 100 years away. Researchers are involved in a study of 16,000 pairs of British twins. It has found a strong heritable component to language disorders, but individual genes are hard to pin down. Researchers are optimistic, but progress has been a lot slower than people thought it would be.

41 **Language genes:**

- **A** work in one little area of the brain
- **B** produce a small effect on the speed with which people master language
- **C** are too few to control linguistic ability
- **D** work in many bits of the brain

42 **Studies on language development:**

- **A** are about to have a full grasp of such processes
- **B** have pinned down the genes that produce language disorders
- **C** will give sure and complete answers in 50 years at least
- **D** proceed faster than people thought

43 **According to a study of 16,000 pairs of British twins, language disorders:**

- **A** are often heritable
- **B** are brought about by one individual gene
- **C** are caused by a protein that sticks to DNA
- **D** are hard to correct

44 **The activity of some language genes:**

- **A** is sped up by a protein that sticks to DNA
- **B** is slowed up by a protein that sticks to DNA
- **C** is controlled by a group of other genes through the production of a protein that sticks to DNA
- **D** is controlled by just one gene called FOXP2

45 **Language genes are arranged:**

- **A** like a tree where the trunk is made of genes like FOXP2
- **B** like the branches of a tree, whose trunk is the brain
- **C** so that all people have the same linguistic ability
- **D** so as to control the activity of DNA

46 **Experts believe that:**

A only few parts of the brain contain language genes

B linguistic ability depends on a specific gene which works in the brain

C FOXP2 gene is probably present in the lungs and brain of mice

D a network of genes controls our linguistic ability

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47 **FOXP2 :**

A is exactly the same gene which can also be found in mice

B is the only gene that controls the activity of a protein that sticks to DNA

C is the name of the network of language genes

D is a gene which can also be found in mice although it has not exactly the same characteristics

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48 **Experts' ultimate job focuses on:**

A language aspects such as grammar

B the rise of language in the brain

C FOXP2 gene

D the similarities between the FOXP2 gene present in human brain and that which can be switched on in mice

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Photographs from the Hubble Space Telescope and from Mars Global Surveyor, now orbiting the planet, show that dust is obscuring virtually the whole surface of the red planet, the biggest Martian storm ever seen. Mars is covered with a veil of hazy, reddish dust. The planetwide storm sprang to life from a smaller duster that appeared in a southern plain called the Hellas basin. Sequential views show that dust from that basin spread north and east, and soon the whole planet was blotted from view by a reddish-orange cloud. The dust obscures the sun so much that the Martian surface has cooled by about 10 degrees. Dust thrown aloft, however, has absorbed sunlight and has warmed by some 80 degrees to about 4 degrees from its normal minus 76. The storm is settling now but other storms will occur in the next future as Mars makes its closest approach to the sun. NASA scientists said the storm is associated with Mars' southern spring. The planet is tilted on its axis, rather like Earth, and its closest approach to the sun comes when it is spring in the southern hemisphere. The Hellas basin is in the south. It is not clear to scientists why a local storm on Mars suddenly bloomed into a planetwide roar. NASA scientists said dust kicked up from the Martian surface now towers more than 40 miles. Winds at the surface are thought to be clipping along at more than 80 miles an hour, while high-altitude winds are even faster, close to 260 miles an hour. Cloud patterns on Mars have been observed from Earth for more than a century, but a planetwide dust storm was first seen in 1956. Fifteen years later, the Mariner 9 spacecraft arrived in Martian orbit only to find the planet shrouded in dust. After that, dust storms were sighted every four to five years.

49 **In Mars' southern spring:**

A the Martian surface warms by about 80 degrees

B dust always covers the whole planet

C dust thrown aloft cools by about 10 degrees

D storms are favoured because Mars is closer to the sun

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50 **The Hellas basin:**

A is a plain in the south of Mars where a local storm bloomed into the biggest Martian storm ever seen

B gives rise to storms because there winds clip along at more than 80 miles an hour

C has a temperature of 80 degrees, 4 degrees higher than in the rest of the planet

D was blotted from view by a reddish-orange cloud when the plant tilted on its axis

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51 **Mars' surface:**

A is covered with reddish dust which now towers more than 40 miles

B has been studied since 1956

C has warmed by 80 degrees because of the planetwide storm

D is swept by winds close to 260 miles an hour

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52 **In the future:**

A the biggest Martian storm will occur as Mars makes its closest approach to the sun

B the storm will finally settle when Mars makes its closest approach to the sun

C other storms will occur as Mars tilts on its axis and approaches the sun

D new storms will occur

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53 **The biggest Martian storm:**

A concerned just a southern plain called the Hellas basin

B was observed a century ago

C aroused from a smaller duster in Mars' southern spring

D covered just the Hellas basin with a reddish-orange cloud

---

54 **Dust storms on Mars:**

A were sighted every four to five years after the Mariner 9 spacecraft had found the planet shrouded in dust

B have been observed for more than a century

C can be observed from Earth just when it is spring

D are not likely to occur again

---

55 **NASA scientists:**

A think that when the storm started, winds at Mars' surface moved at more than 80 miles an hour

B have discovered that when Mars makes its closest approach to the sun a planetwide storm occurs

C say that a local storm on Mars suddenly turned into a planetwide roar, although they still don't know exactly the causes of this phenomenon

D have discovered that Mars was covered with dust only in 1956

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56 **By the effect of the dust:**

A the absorbed sunlight has warmed the martian surface

B temperature on Mars' surface has cooled by about 10 degrees

C temperature has warmed in the southern hemisphere of the planet

D just Mars's southern hemisphere has been obscured

Digital art is something quite different from digitized art. A generation of artists proclaims that digital is a new medium, a fully legitimate medium in which 0's and 1's replace paint and canvas. Getting critics and curators to agree, however, has been more complicated. Despite numerous websites devoted to digital art and thousands of practitioners, many mainstream art critics have maintained that digital as an artform has not yet really taken shape. What hasn't really taken shape, however, may be, more exactly, a framework, a vocabulary in which digital art can be discussed and appreciated by non-practitioners. The history of digital art may go through a set of steps increasingly familiar in cyberspace. First, creative amateurs circulate their own work without charge partly because there is still no market for it and partly because no one quite knows how to charge for it. Second, nonprofit institutions confer legitimacy upon and provide protective custody for the kids while introducing them to the right people. Third, a true market emerges, and the kids get rich, if they are lucky, or are cast aside, if they are not. Digital art reaches the tipping point when it successfully turns the wired world to artistic ends remote from those envisioned by the engineers who brought that digital fusion of the telephone, the television, and the computer into existence. The digital reproduction of works of art on the Internet is just that, but the experience of works of art uniquely created for the Net is a fundamentally different category. Also, though major shows on the left and right coasts may mark a museum breakthrough in North America, there are more digital artists in Europe.

57 **What digital art still lacks is:**

A a true market

B a framework in which it can be put and discussed

C a shape

D a sufficient number of practitioners

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58 **The turning point in the history of digital art is when:**

A a market is found

B a generation of artists proclaims that digital is a new medium

C even non-practitioners finally appreciate it

D it successfully turns the wired world to artistic ends

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59 **Nonprofit institutions:**

A aim at making non-practitioners approach digital art

B take care of digital artists

C ensure digital art a true market

D provide protective custody for young artists after they get rich

---

60 **Critics state that digital art:**

A is nothing but digitized art

B is not appreciated by non-practitioners

C cannot be considered as an artform with its own definite shape

D lacks a framework

---

61 **In the history of digital art:**

A there is not immediately a market for it because creative amateurs do not know how to charge for their work

B a true market emerges only after that nonprofit institutions legitimate and safeguard creative amateurs

C a true market is still to emerge

D there is still no market for it

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62 **Digital art:**

A mainly consists in the digital reproduction of works of art on the Internet

B consists in the creation of works of art uniquely created for the Net

C is a sure source of considerable income

D is necessarily made by engineers

---

63 **The numerous websites devoted to digital art:**

A have not totally convinced critics of the value of this new kind of art

B show that it is not so different from digitized art

C give it legitimacy as an artform

D have shown critics that this is a real artform

---

64 **In North America:**

A digital art has more opportunities to be shown to the public than in Europe

B there are not many digital artists

C there are more digital artists than in Europe

D there is a museum of the digital reproduction of works of art on the Internet

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Applied Materials, a leading maker of semiconductor manufacturing equipment, is aiming to increase its revenues tenfold in the fast-growing China market to $1bn within four years. James Morgan, the chairman of Applied Materials, said China had all the correct underpinnings for their own chip industry- skilled engineers and technological experience in building and managing the complex infrastructure to make wafers. Only about a quarter of the mainland's fast-growing PC and consumer electronics industries are powered by made-in-China chips, and most of those are at the low end of the market. Mr. Morgan said that if China could produce cost-effective chips, then there would be a tendency to buy from the local market, and work closely with the local design houses. Like Japan and South Korea before it, Mr. Morgan believes that Chinese policymakers also see the need for a homegrown chip industry to protect their balance of payments. Mr. Morgan said he did not think that the US export restrictions to China on equipment capable of producing the most advanced chips would present an obstacle to Applied Materials' expansion on the mainland. On prospects for a recovery in the global chip industry, Mr. Morgan said the company hadn't yet seen an upturn, and was not able to predict when one would come.

65 **Applied Materials operates in:**

- **A** the import-export business
- **B** the technological field
- **C** the building trade
- **D** the processing industry

66 **Within four years, Applied Materials is expecting:**

- **A** a low decrease of China's semiconductor industry
- **B** a complete renewal of Chinese wafer plants
- **C** to widen its share of the market in China
- **D** a drastic change of the political situation in China

67 **According to the chairman of Applied Materials, China**

- **A** cannot compete with foreign semiconductor industries
- **B** has difficulties in managing complex infrastructures
- **C** will soon develop its own chip industry
- **D** lacks skilled technicians

68 **Policymakers consider the growth of homegrown chip industry necessary to :**

- **A** avoid Japanese and South Corean competition
- **B** avoid US export restrictions to China
- **C** protect the balance of payments
- **D** strengthen regional markets

69 **If China could produce chips providing adequate financial return there would be:**

- **A** a decline in the local market
- **B** a harsh competition with the US chip industry
- **C** an upturn in the global chip industry
- **D** a closer cooperation with the local design houses

70 **US export restrictions to China will:**

A prevent local market from developing its own chip industry

B hinder Applied Materials' expansion

C not affect Applied Materials' expansion

D present an obstacle to cooperation

---

71 **An upward trend in the global chip industry is:**

A unpredictable

B expected within four years

C under way

D highly improbable

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72 **Chinese PC and consumer electronics industries are powered:**

A exclusively by homemade products

B by chips produced in Japan and South Corea

C mostly by imported chips

D by low-quality products

A successful treatment for social phobias is the cognitive-behavioral therapy, in which patients slowly expose themselves to the places and circumstances that frighten them and reframe the catastrophic thinking that torments them. If such therapy doesn't help social phobics drugs can. Ever since the popularization of Prozac in the early 1990's, the family of modern psychopharmacological drugs has grown steadily. Most of these medications are selective serotonin reuptake inhibitors which selectively block the brain's reabsorption of the neurotransmitter serotonin, helping to produce feelings of satisfaction. Progress in treating social-anxiety disorder is also providing hope for the most disabling of the families of phobias: panic disorder. Unlike people suffering from social phobias who know what will trigger their fear, the victim of panic attacks never knows where or when one will hit. Someone who experiences an attack in a supermarket will often not return there, associating the once-neutral place with the traumatic experience. But the perceived circle of safety can quickly shrink, until sufferers may be confined entirely to their homes. When this begins to happen, panic disorder mutates into full-blown agoraphobia. In this case, recovery takes longer than it does for social phobias because agoraphobic behavior can become quite entrenched.

73 **In a cognitive-behavioral therapy, patients suffering from social phobias:**

- **A** are taught to recognize their fears
- **B** are shockingly exposed to their fears
- **C** are gradually exposed to their fears
- **D** are taught to conceal their fears

74 **Over the last decade, psychopharmacological drugs:**

- **A** have grown in number
- **B** have become less effective
- **C** have become more debilitating
- **D** have remained substantially unchanged

75 **Most psychopharmacological drugs:**

- **A** inhibit the production of serotonin
- **B** stimulate the production of serotonin
- **C** favour the brain's reabsorption of serotonin
- **D** block the brain reabsorption of serotonin

76 **People suffering from panic disorder:**

- **A** are generally able to prevent panic attacks
- **B** are overwhelmed by no apparent reason
- **C** are generally aware of the cause of their fears
- **D** have an exact knowledge of what frightens them

77 **Serotonin is :**

- **A** an inhibitory substance
- **B** a neurotransmitter
- **C** a psychopharmacological drug
- **D** a recently-developed treatment

78 **People suffering from agoraphobia:**

A fear enclosed spaces

B feel the compulsive need to leave their home

C have the terror of anything inside their home

D become progressively homebound

---

79 **Panic disorder mutates into agoraphobia when:**

A patients feels unsafe at home

B patients feels unsafe just in the place where they experienced a panic attack

C patients feel safe only in crowded places

D patients feel safe only at home

---

80 **In most cases agoraphobia:**

A is easier to treat than social phobias

B can be treated as quickly as social phobias

C takes a longer time to be cured than social phobias

D is as untreatable as social phobias

The stratosphere begins about 10 kilometres above the ground, and extends to a height of about 50 kilometres. Conditions here generally change more slowly than they do lower in the atmosphere, but there are occasional large shifts in the pattern of air movement. Mark Baldwin, of Northwest Research Associates in Bellevue, Washington, analysed daily satellite maps of a stratospheric air current called the Arctic Vortex. This blows westwards, with occasional reversals, around the top of the globe at 200-300 kilometres per hour. Baldwin and collegues found a strong relationship between unusual wintertime conditions in the vortex and subsequent unusual weather in the Northern Hemisphere. The vortex extends into the lower atmosphere, where it tends to trap cold air at the North Pole. If it weakens, the air can drift south, taking cold, snowy and windy conditions to Europe, Asia and North America. An abnormally strong vortex, in contrast, presages unseasonably mild weather. Changes that are strong enough to cause weather blips happen a little more than once a year. The stratosphere could act like a sort of delayed mirror, reflecting changes in the lower atmosphere back down several months later.

81 **The stratosphere:**

A is the lowest part of the atmosphere

B extends for about 40 kilometres

C originates from the Earth's surface

D stretches for more than 50 kilometres

---

82 **Weather conditions in the stratosphere:**

A always change, causing large shifts in the pattern of air movement

B generally change very rapidly

C never change

D occasionally change considerably

---

83 **The Arctic Vortex blows:**

A from the Antarctic to the north

B towards the west

C from west to east

D with no constant direction

---

84 **Meteorologists have found a strong relationship between the vortex and:**

A cold air in the South Pole

B sudden weather changes in Asia

C heavy snowfall in Europe when the vortex is particularly strong

D unusual weather conditions in the Northern Hemisphere

---

85 **An abnormally strong vortex can presage:**

A mild weather in spring and autumn

B mild weather in winter

C snowy and windy conditions in Europe

D cold weather in North America

---

86 **Strong changes in the stratosphere happen:**

A very frequently

B once or twice a year

C at fixed intervals

D only during the summer

---

87 **When the Vortex weakens:**

A the air drifts south

B the air blows around the top of the globe

C the air is trapped at the North Pole

D the air warms

---

88 **The straosphere can reflect changes in the lower atmosphere:**

A as soon as these occur

B within a few weeks

C several months later

D in a fortnight

Comets - icy visitors from the outer solar system - are easily vaporized. Even a little sunlight will cause one to bubble and froth, dispensing a tail that stretches millions of kilometres through space. Now imagine a solar system in which not one but billions of comets are vaporizing- all at the same time! That's what astronomers may have found around an aging star called CW Leonis. CW Leonis was once a well-behaved main-sequence star as our Sun is now. But the aging giant is substantially heavier than the Sun- as a young star it contained 1.5 to 4 solar masses- so it evolved more quickly. About one billion years ago, CW Leonis ran out of hydrogen fuel in its core. Since then hotter fusion reactions involving helium and carbon have replaced simple hydrogen burning- swelling the star enormously. Astronomers think they are witnessing the type of apocalypse that will ultimately befall our planetary system. Several billion years from now, the Sun will become a giant star and its power output will increase five thousand fold. As the luminosity of the Sun increases, a wave of water vaporization will spread outwards through the solar system, starting with Earth's oceans, and extending well beyond the orbit of Neptune. Icy bodies as large as Neptune will be mostly vaporized, leaving a cinder of hot rock.

89 **CW Leonis is:**

- **A** a recently-born solar system
- **B** part of our solar system
- **C** a star containing vapor in its core
- **D** a star surrounded by vapor

---

90 **Billions of years from now, our planetary system:**

- **A** will undergo a process of vaporization
- **B** will be replaced by CW Leonis
- **C** will be absorbed by outer solar systems
- **D** will extend well beyond the orbit of Neptune

---

91 **About one billion years ago, CW Leonis:**

- **A** produced more hydrogen fuel
- **B** stored a great quantity of hydrogen fuel
- **C** exhausted hydrogen fuel
- **D** absorbed hydrogen fuel

---

92 **The Sun will eventually:**

- **A** reduce its power output
- **B** vaporize
- **C** increase its luminosity
- **D** become an icy body

---

93 **Being heavier than the Sun, CW Leonis:**

- **A** has increased its output five thousand fold
- **B** has run out of hydrogen more slowly
- **C** has developed more rapidly
- **D** has increased its luminosity five thousand fold

---

94 **If the Sun becomes a giant star, the process of vaporization will involve:**

A earth-like planets

B visitors from the outer solar system

C the entire solar system

D only the Earth's oceans

---

95 **A comet:**

A vaporizes on approaching the Sun

B disintegrates on approaching the Sun

C burns on approaching the Sun

D collapses on approaching the Sun

---

96 **Hotter fusion reactions:**

A have expanded CW Leonis enormously

B have reduced CW Leonis enormously

C have fragmentized CW Leonis enormously

D have contracted CW Leonis enormously

Even in the information age, economic markets can be hampered by insufficient knowledge. Some economists revealed the consequences when one party in a transaction knows more than the other. It's an everyday situation. When you buy a used car, you can't possibly know its foibles as well as the seller does. Such 'asymmetric information' has become a burning issue for the life-insurance market, companies wonder how to insure clients who may know that they are genetically predisposed to a life-threatening disease. Conventional economic models assume that everyone knows everything. Prices are therefore assumed to find their fair market value efficiently, guided only by market forces, the push and pull of supply and demand, without any central coordinator. But if buyers and sellers lack this omniscience, as they inevitably do, market forces don't necessarily create an ideal market. The asymmetric information can either cause a market to collapse or can flood it with bad products, an effect called adverse selection. Economists illustrated this with reference to used-car sales. Here, because the seller knows more than the buyer, the market can become awash with bad vehicles, called 'lemons' in the United States. Economic lemons can be more invidious than shoddy cars. These effects could cause exploitative interest rates to prevail in local credit markets in developing countries, for example, and lead to discrimination against minority groups in labour markets. Fair sellers, who can be squeezed out in such situations, try to counter asymmetry of information by offering guarantees and other contracts to buyers.

97 **People aware that they are genetically predisposed to a life-threatening disease:**

- **A** are not allowed to take out a life-insurance policy
- **B** can be insured without any problem as for insurance companies
- **C** are a burning issue for insurance companies
- **D** are discriminated because they represent a problem for the insurance company

98 **Minority groups in labour markets:**

- **A** are awash with bad products
- **B** are discriminated because of effects such as the adverse selection
- **C** produce exploitative interest rates, but only in developing countries
- **D** are affected by the asymmetric adversion

99 **When one party in a transaction knows more than the other:**

- **A** markets can be hampered
- **B** prices find their fair market value efficiently
- **C** life-insurance market inevitably collapses
- **D** market forces can always create an ideal market

100 **The adverse selection:**

- **A** can favour minority groups in labour markets
- **B** can cause a market to be flooded by bad products
- **C** can cause exploitative interest rates to prevail in local credit markets
- **D** concerns used-car sales in the United States

101 **Economic lemons:**

- **A** can invade the market because the asymmetric information between the seller and the buyer favours the seller
- **B** can bring about the collapse of used-car sales
- **C** can cause the car market to collapse
- **D** are always better than shoddy cars

102 **The push and pull of supply and demand:**

- **A** cause an asymmetric information between buyer and seller
- **B** always create an ideal market
- **C** can cause a market to collapse
- **D** are assumed to guide prices to find their fair market value

---

103 **The asymmetric information between buyer and seller:**

- **A** cannot ruin a market because there is always a central coordinator that guides a transaction
- **B** particularly worries the life-insurance market when the client knows he is genetically predisposed to a life-threatening disease
- **C** is guided by market forces
- **D** concerns the used-car market exclusively

---

104 **Fair sellers:**

- **A** can do nothing against asymmetric information
- **B** offer guarantees and other contracts to buyers to oppose asymmetric information
- **C** are not worried by asymmetric information, since it only concerns the life-insurance market
- **D** have always been squeezed out in situations involving exploitative interest rates

---

Depletion experts forecast in 1956 that oil production in the United States would peak in the early 1970s and then slowly decline, in something resembling a bell-shaped curve. At the time, their forecast was controversial, and many rubbished it. After 1970, however, empirical evidence proved them correct: oil production in America did indeed peak and has been in decline ever since. Oil production in a new area typically rises quickly at first, as the easiest and cheapest reserves are tapped. Over time, reservoirs age and go into decline, and so lifting oil becomes more expensive. Oil from that area then becomes less competitive in relation to other fuels, or to oil from other areas. As a result, production slows down and usually tapers off and declines. That made for a bell-shaped curve. Some experts argue that global production could peak as soon as 2004 .Some others insist that the world will be awash in oil for another 70 years. Who is right? Nearly all the predictions for 2000 made after the 1970s oil shocks were far too pessimistic. That points to what will probably determine whether the pessimists or the optimists are right: technological innovation. Some argue that because the industry has already spent billions on technology development, it makes it difficult to ask today for new technology, as most of the wheels have already been invented. Yet techno-optimists argue that the technological revolution in oil has only just begun. Average recovery rates (how much of the known oil in a reservoir can actually be brought to the surface) are still only around 30-35%. Industry optimists believe that new techniques on the drawing board today could lift that figure to 50-60% within a decade.

105 **As oil reservoirs age:**

- **A** that oil becomes cheaper
- **B** that oil is replaced by other fuels less competitive
- **C** that oil becomes less competitive
- **D** lifting oil becomes cheaper

106 **In 1956 oil production:**

- **A** peaked
- **B** slowly began to decline
- **C** began to decline in the United States
- **D** was supposed to peak in the early 1970s

107 **According to average recovery rates:**

- **A** only 30-35% of the known oil in a reservoir can be brought to the surface
- **B** more than 50% of the known oil in a reservoir can be brought to the surface thanks to new technologies
- **C** the percentage of the known oil that can be drilled is definitely increasing
- **D** the percentage of available oil in a reservoir is inevitably decreasing

108 **In a new area:**

- **A** oil is very expensive at first
- **B** oil production is considerable at first
- **C** lifting oil is always more expensive
- **D** oil production rises slowly at first and more quickly when the easiest and cheapest reserves are tapped

109 **Since 1970:**

- **A** oil production has increased by around 30-35%
- **B** depletion experts have been saying that oil production can peak as soon as 2004
- **C** oil production in the United States has been in decline
- **D** global oil production has decreased

110 **Some depletion experts say that:**

- **A** oil production in America is likely to decline soon
- **B** global oil production will reach its peak in 2004
- **C** other fuels are replacing oil
- **D** american oil production will peak in 70 years

---

111 **Technology:**

- **A** is supposed to curb oil production decline
- **B** requires a lot of money to make new wheels
- **C** has lifted recovery rates to 50-60% thanks to the new techniques introduced
- **D** is considered by all experts useless to slow oil production decline

---

112 **Techno-optimists maintain that:**

- **A** the technological revolution in oil has just begun
- **B** new wheels will be invented
- **C** oil production will peak in 2004 thanks to the introduction of new techniques
- **D** average recovery rates will certainly drop to 50-60% within a decade

---

"The Blue Planet" is an extravagant eight-part British-American co-production that has broadcast on the BBC. The series aims to reveal the complete natural history of our blue planet. More than 70% of the earth's surface is covered by the sea, and yet less is known about the deep oceans than is known about the moon. "The Blue Planet "shows us life in the shallows. But it is for its ventures into the deep, that it will really be remembered. There, the film makers entered a twilight zone, where, for animal life, survival hinges on seeing while not being seen, and many creatures have become completely transparent. In trying to inform as well as entertain, "The Blue Planet" is old-fashioned in its goals, a throwback to the early days of nature films. Over the past decade natural-history broadcasting has expanded very much. Not surprisingly, the films themselves have also changed. In a bid for viewers, especially younger viewers raised on fast-moving cartoons, programme makers have gone for ever more sophisticated computer graphics or for attention-grabbing presenters. "The Blue Planet" tried to avoid this. Science, its makers say, was a priority. Yet their big budget enabled cameramen, with little or no help from the computer, to return over and over, if necessary, to one spot to get the perfect shot. Perhaps inevitably, sensation and drama won out. By limiting the presenter to little more than a soothing, authoritative voice-over, science loses to the oceanic showcase. Much of the sea seems a lonely wasteland to those who travel on its surface, but the lasting impression of "The Blue Planet" is of a grand operatic drama. With its careful editing, its fine storytelling, powerful music and dramatic sequences, "The Blue Planet" succeeds because it's not television, it's cinema.

113 **One of "The Blue Planet" aims is:**

- **A** to combine entertainment and information
- **B** to show the deep instead of the shallows
- **C** to use ever more sophisticated computer graphics
- **D** to limit the use of the voice-over as much as possible

114 **In "The Blue Planet" the film makers:**

- **A** use attention-grabbing presenters
- **B** try to avoid sensation and drama
- **C** show animal life in the deep oceans
- **D** take inspiration from fast moving-cartoons to attract young people's attention

115 **The success of "The Blue Planet" is due to:**

- **A** its sophisticated computer graphics
- **B** its cinematographic character
- **C** its authoritative voice-over
- **D** its old-fashioned goals

116 **In the last ten years:**

- **A** powerful music and dramatic sequences have characterized natural-history broadcasting
- **B** natural-history broadcasting has tended to be more and more like cinema
- **C** natural-history broadcasting has focused on sensation and drama
- **D** the number of natural-history broadcasts has increased

117 **"The Blue Planet" is:**

- **A** a documentary that is to be broadcast on the BBC
- **B** a sit-com dealing with life in the shallows
- **C** a co-produced natural-history series
- **D** a drama

118 **Thanks to their big budget:**

A "The Blue Planet" cameramen have been able to use sophisticated computer graphics

B "The Blue Planet" cameramen have obtained perfect shots

C film makers have made a great number of natural films over the last decade

D programme-makers have gone for very famous presenters

---

119 **"The Blue Planet" represents a throwback to the first nature films because:**

A it just wants to entertain

B it has recours to the traditional presenter

C it aims at simple information

D it avoids an excessive use of computer

---

120 **The main goal of "The Blue Planet" is:**

A to be like a cartoon

B to show all we do not know about the deep oceans

C to get perfect shots

D to reveal the complete natural history of our entire planet

---

Complex molecules, such as many drugs, are usually built up from a core with several near-identical hooks on which chemists hang different chemical units. Adding the reagents needed for any one of these additions usually attaches units randomly to any available sites. Chemists normally mask all the sites but the one they want to modify. After transforming the exposed site, they remove all the protecting units and repeat the process for the next site using a different shaped protecting group. It is a painstaking task, each protection and deprotection step can waste a little of their precious molecule. The alternative is: 'unichemo' protection. This doesn't eliminate protecting groups, but it greatly simplifies their use. The researchers use essentially the same protecting group for all the different sites, so that the same chemical reactions can attach and detach the groups. But they expose just one site at a time for modification. The protecting groups aren't all removed from the core molecule at the same time because they are different lengths. They are oligomers - short chains of identical links. These are attached simultaneously, and then whittled away one link at a time. Sites protected by a one-link oligomer are the first to be stripped naked, whereas those with longer chains attached remain protected. A further round of link removal exposes sites capped with two-link oligomers, and so on. Researchers demonstrate their approach by modifying a short peptide, a protein-like molecule. The peptide has five almost identical sites to which the researchers affix modifying groups. They protected these sites with oligomers of one, two, three, four and five links. Using reactions that attack only the dangling end of the chains, the researchers cut away the protecting groups one link at a time and stuck a different molecule onto each of the peptide's five sites.

121 **Sites protected by a several-links oligomer:**

- **A** are cut away later than sites protected by one-link oligomer
- **B** remain protected for a longer time
- **C** are the first to be stripped naked
- **D** are not removed from the core molecule at the same time

122 **All the different sites of a molecule core:**

- **A** have the same protecting group only in the case of ‘unichemo protection’
- **B** have necessarily to be protected by different chemical groups
- **C** are protected by one-link oligomer
- **D** are masked at the same time for modification

123 **To show the working of ‘unichemo protection’, researchers:**

- **A** affix modifying groups to the sites of a protein-like molecule, the peptide
- **B** use a short peptide of different links
- **C** use an oligomer with five almost identical sites
- **D** protect the sites of a peptide with an oligomer of five chains

124 **In the ordinary process of sites’ modification:**

- **A** chemists normally use the same chemical units
- **B** chemists mask the site they want to modify
- **C** a little of molecules can be wasted
- **D** researchers normally make the same chemical reactions attach and detach the groups

125 **Oligomers are:**

- **A** short chains used to protect sites
- **B** attached one link at a time
- **C** removed at the same time
- **D** different lenghts and of different links

126 **'Unichemo' protection:**

- **A** exposes all sites simultaneously
- **B** removes all the protecting groups from the core molecule
- **C** uses different protecting groups
- **D** simplifies the use of protecting groups

---

127 **To transform a molecular site, chemists:**

- **A** first mask all the other sites to expose the chosen one
- **B** remove all the protecting units
- **C** remove all the other sites
- **D** first modify all the protecting units

---

128 **A peptide is:**

- **A** a protein
- **B** an oligomer
- **C** a core molecule
- **D** a complex molecule

Corporate venture capital (CVC) is money invested by a larger company in a smaller, unquoted, company in the form of a direct minority stake. CVC can bring advantages to both sides, and is practiced quite widely in the US. CVC can be described as the targeted use of capital to support external technology development: most large firms use CVC to open technology windows that may affect their core businesss. These are closely-related financial benefits - most investors specify a minimum internal rate of return of 25% and an average of 40. By contrast some CVC investment is made for reasons of social responsability - for instance by coal and steel corporations which are looking to help redundant empolyees make a new start. In Europe, CVC seems to be a relatively sporadic activity. Excluding the largest social-responsability investors, each investor averages 1.4 CVC investments a year, and most companies use CVC as just one of several ways to acquire technology. National telecoms companies are among the most active corporate venturers, for instance, but are also very active in acquisitions and alliances. Successful CVC should also benefit the company receiving the investment, generally by lending it credibility in the marketplace and access to new resources in marketing and technology.

129 **In a corporate venture capital investment:**

- **A** small companies receive financial aid
- **B** large companies purchase stakes from small ones
- **C** European companies merge with US corporations
- **D** small companies invest capitals in large ones

130 **CVC investors expect:**

- **A** an average rate of return of 40%
- **B** an average rate of return of 25%
- **C** a minimum internal rate of 40%
- **D** lower tax rates

131 **Most large firms use CVC to:**

- **A** reinvest money in other fields
- **B** contrast competition from smaller companies
- **C** support access to new technology
- **D** reinforce credibility in the marketplace

132 **In Europe, CVC is:**

- **A** the most used way to acquire new technology
- **B** a widespread form of investment
- **C** used exclusively by telecoms companies
- **D** used sporadically

133 **European national telecoms companies:**

- **A** prefer acquisitions and alliances to CVC
- **B** are active corporate venturers
- **C** use CVC reluctantly
- **D** use exclusively CVC investments

134 **Some CVC investments can have a social responsability in:**

A financing telecoms companies

B gaining access to new technology

C helping surplus personnel to make a new start

D encouraging small companies

---

135 **A CVC investment can bring advantages:**

A only to smaller companies

B to large companies as well as small ones

C only to unquoted companies

D exclusively to companies with the largest amount of capitals

---

136 **The company receiving a CVC investment:**

A acquires credibility in the marketplace

B is damaged by the investor

C has no valuable advantages

D has no appropriate counterbalance

Every few weeks, a fiery light streaks across the sky casting strange shadows and unleashing sonic booms. Astronomers call them fireballs or 'bolides'. They're unusually bright meteors caused by small asteroids that disintegrate in our planet's atmosphere. Often they explode high in the air like kilotons of TNT- blasting tiny meteorites far and wide. Luckily, most debris from space falls unseen over oceans or sparsely-populated land areas. Objects from space that enter Earth's atmosphere are very cold and they remain so even as they blaze a hot-looking trail toward the ground. The outlayers are warmed by atmospheric friction, and little bits flake away as they descend. This is called ablation and it's a wonderful way to remove heat (some commercial heat shields use ablation to keep spacecrafts cool when they re-enter Earth's atmosphere). Asteroids move faster than the speed of sound in Earth's atmosphere. As a result, the air pressure ahead of a fireball can substantially exceed the air pressure behind it. The difference can be so great that it actually crushes the object. Small fragments from such explosions lose much of their kinetic energy as they heat the atmosphere via friction. They quickly decelerate and become sub-sonic. Dusty debris from airbursts can linger in the atmosphere for weeks or months carried around the globe by winds.

137 **The astronomers call fireball or "bolide":**

A an unidentified flying object crossing the atmosphere

B cosmic dust lingering in the atmosphere

C a spacecraft re-entering the atmosphere

D a bright meteor that often explodes

---

138 **Most debris from space is likely to fall:**

A over highly inhabited areas

B over uninhabited areas

C over built-up areas

D over rural areas

---

139 **Ablation can be used to:**

A keep spacecrafts at a low temperature when they re-enter the Earth's atmosphere

B fuel spacecrafts when they re-enter the Earth's atmospere

C reduce the speed of spacecrafts when they re-enter the Earth's atmosphere

D lower the pressure of spacecrafts when they re-enter the Earth's atmosphere

---

140 **Ablation is:**

A the overheating of asteroids

B the air pressure ahead of asteroids

C the wearing away of parts of the asteroid's outer layers

D the total disintegration of an asteroid caused by atmospheric friction

---

141 **The crushing of asteroids is caused by:**

A the speed of sound

B sonic explosions

C kinetic energy

D a difference of air pressure

---

142 **Small fragments falling to the ground:**

- **A** move faster than the speed of sound
- **B** keep their speed constant
- **C** reduce their speed
- **D** increase their velocity

---

143 **Dusty debris from airbursts:**

- **A** usually fall quickly to the ground
- **B** can remain suspended in the air for months
- **C** are completely disintegrated before reaching the ground
- **D** never reach the ground

---

144 **Small cosmic fragments heat the atmosphere through:**

- **A** deceleration
- **B** ablation
- **C** acceleration
- **D** friction

Marine scientists have found a complex community of creatures thriving in the crevices beneath the colourful surface of coral reefs in the Red Sea. Many of the animals may be completely new to science, says one of the discoverers, Mark Wunsch of the University of Bremen. The creatures could shed light on the worldwide coral-reef crisis. This newly-found microcosm could also solve the 'coral reef paradox' that Charles Darwin identified in 1842. He noticed that reefs, the most biologically rich areas of the ocean, occur in some of the most nutrient-poor waters. Reef inhabitants may harness nutrients from the water and make them available to corals, suggests Wunsch. Otherwise, all these nutrients would just float by. Wunsch's team found 2.5 to 7.5 times more surface inside the reef than outside, crammed with sponges, bacteria and filter-feeding relatives of sea squirts. Of the 370 different animals they counted, the researchers have so far identified only 150. They calculate that these crevice-dwellers filter out up to 60% of the plant and animal plankton passing through the reef. Corals are a partnership between animal and plant. They can draw some food from water, but not enough. Wunsch's team thinks that the nitrogen and phosphorous excreted by sponges after digesting plankton fertilizes the corals, and allows them to thrive in nutrient-poor water.

145 **The 'coral reef paradox' identified by Charles Darwin in 1842 is:**

A the depletion of nutrients in biologically rich areas

B the process of fertilization which allows the corals to proliferate

C the presence of reefs in nutrient-poor waters

D the discovery of a complex microcosm in the Red Sea

146 **Red Sea's reef inhabitants:**

A are not able to draw food from water

B filter more than half of the plankton passing through the reef

C do not exceed the number of 150

D excrete nutrients from the reef

147 **The reef internal surface has large quantities of:**

A sponges and bacteria

B nourishing substances

C plant and animal plankton

D sea squirts

148 **The proliferation of corals in nutrient-poor water is due to:**

A the nitrogen and phosphorous absorbed by sponges

B the nutrients hidden in the crevices

C the accumulation of plankton in the crevices

D the substances excreted by sponges after digesting plankton

149 **The microcosm found in the Red Sea may help to:**

A better understand the relationship between reefs and nutrient-rich waters

B better understand the worldwide crisis of coral reefs

C calculate the quantity of nitrogen and phosphorous excreted by sponges

D calculate the quantity of plankton passing through the reef

150 **Filter-feeding animals:**

A prevent nutrients from floating by

B prevent corals from drawing food from water

C prevent nitrogen and phosphorous from fertilizing the corals

D prevent corals from thriving

---

151 **The internal structure of reefs:**

A is 2.5 to 7.5 times more limited in extent than the external surface

B has approximately the same extension of the exterior

C provides much more surface than the exterior

D is not as extended as outside

---

152 **In the reefs of the Red Sea, researchers have so far identified:**

A 370 different animals

B up to 60% of the animals they counted

C no more than 150 crevice-dwellers

D from 2.5% to 7.5 %of the animals crammed inside the crevices

---

Devices such as Active Home and Event Control System, available in the U.S. for as little as $100, allow your computer to control almost any electrical device, showing the status of your house on a control box or on the television screen. A 'Smart Home' consists of a home computer acting as a controller, several receivers for the remote control, and any number of other devices from tiny motors to weather sensors to simple electrical switches. Using suitable software, virtually any appliance can be plugged into your computer. The 'Smart Home' is usually programmed via a simple calendar interface on a PC. Alternatively, it can work on macros, sets of recorded instructions that mimic your normal behaviour. The Smart Home also makes energy savings as a matter of course. The central heating can respond to your location in the house. One facility that is being offered is for the computer to co-ordinate weather sensors with appliances in the home, adjusting heaters, house lights and blinds according to how much light there is outside. Smart Homes can even be operated remotely. Most of the controllers on the market use the X-10 standard. With an additional telephone unit, any of the Smart Home appliances can be operated or have their schedules changed by using the keypad in a simple passworded phone call. Pressing a button on your internet screen switches a lamp on and off several thousand miles away.

153 **To control an electrical appliance through Active Home and Event Control System, the user has to:**

A insert data in a personal computer through several receivers

B use fit software

C use fit hardware

D make just a passworded phone call

---

154 **How is the 'Smart Home' programmed?**

A by pressing a button

B via an additional telephone unit

C through a simple calendar

D through a personal computer

---

155 **Smart Homes can be operated remotely. For example:**

A pressing a button switches a lamp on and off several thousand miles away

B with an additional telephone keypad, any appliances can be operated

C the central heating can respond to your location in the house

D controllores co-ordinate weather sensor

---

156 **Macros are:**

A the biggest parts of a personal computer

B specific electrical switches

C various kinds of instructions

D instructions expressly conceived to make energy savings

---

157 **Weather sensors work:**

A only if there is sufficient light outside

B only in particular weather conditions

C if they are connected with receivers

D if co-ordinated with specific devices

---

158 **What kind of appliances can a user connect with a personal computer?**

- **A** Only tiny motors, weather sensors and simple electrical switches
- **B** The X-10 standard
- **C** Every kind of appliances
- **D** Only adjusting heaters, house lights and blinds

---

159 **Active Home and Event Control System are available in the U.S.A. for:**

- **A** less than 100 dollars
- **B** more than 100 dollars
- **C** 100 dollars
- **D** about 100 dollars

---

160 **A controller can be:**

- **A** a remote-control device
- **B** the central heating
- **C** an electrical switch
- **D** an additional telephone unit

The lush life described by Robert Lawton of the University of Alabama in Huntsville, may be threatened. Satellite pictures show that deforestation at the foot of western Costa Rican mountains is drying out swirling summit mists. When warm, wet tradewinds blowing off the Caribbean are forced upwards by the mountains, they cool and condense into a damp fog. Lawton and colleagues report that where agriculture has eroded lowland forests, the fluffy cumulus clouds that feed the peaks' forests no longer form. Water evaporating between the trees normally lowers the air temperature. In its absence, air is warmer and has to be lifted higher before it cools into mist. The findings may explain why the base of the cloud forest has begun to dry out, killing many species of frogs and toads. If lost, the forests would take more unique plants and animals with them. The peaks are isolated nests of biodiversity. Cloud forests also clean channels and provide fresh drinking water to people in towns below. Tropical cloud forests on the mountain ranges of Central and South America, Africa and Asia could face a similar fate. Trees are being cleared apace in these countries to make plantations and animal pasture.

161 **An effect of deforestation in Costa Rica is:**

A the increase of the number of species

B the increase of the strength of wet tradewinds

C the cooling of summit mists

D the drying out of clouds on the peaks' forests

162 **Cloud forests favour:**

A plants and animals of the same species

B different species of plants and animals

C animal pasture

D a warm temperature

163 **Lawton and colleagues report that:**

A the lack of clouds is due to the erosion of lowland forests caused by agriculture

B the air temperature rises when water evaporates between the trees

C the existence of biodiversity depends on the type of agriculture adopted

D lowland forests can produce negative effects on the human race

164 **The condition at risk of Costa Rican forests is:**

A specific of those regions

B typical of Central and South America

C due to the presence of local warm winds

D the same condition as that of other forests in different parts of the world

165 **Summit mists are the result of:**

A fluffy clouds

B the cooling and condensation of tradewinds

C the drying out of a damp fog

D the clearing of trees

166 **The lush life Lawton describes may be threatened by:**

- **A** unique plants and animals
- **B** the presence of a satellite
- **C** human agency
- **D** people in towns below the cloud forests

---

167 **Tradewinds contribute to:**

- **A** good crops in agriculture
- **B** the killing of many species of frogs and toads
- **C** the deforestation
- **D** biodiversity

---

168 **In a treeless landscape air:**

- **A** cools into mist at a greater height
- **B** is colder because the lack of trees lowers the air temperature
- **C** cools into mist at a lower height
- **D** is forced upwards by the mountains

Not long time ago visitors to Enron's glittering headquarters in Houston were greeted by a giant banner that proclaimed the firm, 'The world's leading energy company'. That annoyed Enron's smaller energy-trading rivals, but not as much as what came next, a new banner, declaring Enron 'The world's leading company'. Recently, as the company has been engulfed by a financial crisis, that banner has quietly been removed. The heady mix of audacity, ambition and arrogance revealed by the banners is as good a guide as any to Enron's remarkable rise and fall. Forged in the 1980s by the merger of two troubled gas-pipeline firms, Enron drove the development of the sophisticated spot-and-derivatives markets in energy that it has come to dominate. Indeed, such is the scale of its operations, and its dealings with many of the world's financial institutions, that some observers see parallels with Long-Term Capital Management (LTCM), the hedge fund that failed in 1998, and not just because seemingly brilliant financial alchemists have been humbled. Were Enron to go bust, unlikely, but in the current nervous climate, not impossible, might a crisis ensue? Day by day, Enron seems to be sinking deeper into a financial quagmire that is largely of its own creation. Not least thanks to its lack of transparency, the firm's credibility with the markets has eroded to the point that talk of a possible takeover or even bankruptcy is widespread.

169 **Markets:**

- **A** do not trust Enron because it is on the brink of bankruptcy
- **B** are afraid of Enron's takeover
- **C** do not trust Enron also because of its lack of transparency
- **D** are spreading the news of Enron's crash

170 **In 1980:**

- **A** Enron finally came to dominate the spot-and-derivatives markets
- **B** was already able to fully control the sophisticated spot-and-derivatives markets in energy
- **C** two gas-pipeline firms merged and founded Enron company
- **D** Enron merged with two gas-pipeline firms

171 **Enron's progressive fall:**

- **A** does not depend on its financial experts
- **B** will soon turn into a real bust because of the current nervous climate
- **C** has nothing to do with the scale of its operations
- **D** is the result of its impetuous and arrogant attitude

172 **Enron's lack of transparency:**

- **A** is definitely leading it to bankruptcy
- **B** is one of the factors which could lead to the assumption of its control by some other company
- **C** has not dented Enron's credibility yet
- **D** has definitively damaged Enron's credibility

173 **Spot-and-derivatives markets in energy:**

- **A** have developed thanks to Enron company
- **B** have supported Enron company's rise
- **C** have been affected by Enron's fall
- **D** developed thanks to Enron in 1980

174 **Enron is:**

- **A** the result of a merger
- **B** a gas-pipeline firm
- **C** a hedge fund
- **D** a small energy company

---

175 **"The world's leading energy company" was:**

- **A** Enron's new banner which vexed its smaller rivals
- **B** the banner that Enron had to remove after its financial crisis
- **C** a banner that showed Enron's ambition and arrogance
- **D** Enron's banner that greeted visitors immediately before the firm's fall

---

176 **Observers say that:**

- **A** Enron's situation is very much like LTCM's one
- **B** if Enron went bust a crisis would surely ensue
- **C** Enron is likely to go bust as the LTCM hedge fund did in 1998
- **D** Enron's financial experts have been humbled even more than LTCM's ones were

---

The story of Civil War quilts is a mixture of fact and myth. There are intriguing stories of how quilts were used to help the slaves escape through the Underground Railroad. A Log Cabin quilt hanging in a window with a black center for the chimney hole was said to indicate a safe house. Underground Railroad quilts, a variation of Jacob's Ladder, were said to give cues as to the safe path to freedom. There is no solid evidence that this actually occurred but these stories have been told from generation to generation filling our imagination with visions of quilts being a part of the flight for freedom. Another area where the line between truth and myth is blurred is on specific quilt blocks with names like Lincoln's Platform, Sherman's March, Birds in the Air and Evening Star. The first documented Log Cabin quilt is not dated until sometime during the war and the pattern wasn't really common until after the war. The Log Cabin may have become popular after the death of Abraham Lincoln. His leadership in freeing the slaves might explain the stories that Log Cabin quilts were a part of the flight to freedom. Perhaps many of these favorite blocks were really made and named in memory of the Civil War and the freeing of the slaves. What we are certain of is that in the north women made quilts with inscriptions on them indicating the evils of slavery. Some even included pictures of slaves in shackles. As early as the 1830s abolitionists were actively pushing for antislavery laws. They hosted many handicraft fairs over the years to raise money for their cause and to keep it in the public eye. These activities had a powerful influence on events leading up to the war.

177 **Handicraft fairs:**

- **A** were just a cover for abolitionists
- **B** contributed to make people know the antislavery cause
- **C** were mostly held in the north
- **D** were mostly held by women

178 **The line between truth and myth:**

- **A** is clean in Lincoln’s Platform quilt stories
- **B** is also the line between Underground Railroad quilt stories and Log Cabin’s ones
- **C** is definitely shifted to myth
- **D** is not easy to distinguish as for quilt blocks like the Evening Star

179 **Before the Civil War:**

- **A** handicraft fairs were rare
- **B** pictures of handcuffed slaves were often found on Log Cabin quilts
- **C** abolitionists fostered the sale of handicrafts like quilts to fund their cause against slavery
- **D** handicraft fairs had not many visitors

180 **Even though there is no sure evidence:**

- **A** women sometimes used to make quilts with inscriptions on them indicating the evils of slavery
- **B** Log Cabin quilts are said to date back to the war
- **C** quilt stories were made in memory of Abraham Lincoln
- **D** Underground Railroad quilts were said to help slaves escape

181 **The stories about the quilt:**

- **A** have generally an oral character
- **B** are always documented
- **C** all date back to the end of the Civil War
- **D** are called Log Cabin

182 **In the north:**

A quilts became popular after the death of Abraham Lincoln

B quilts were sometimes decorated with pictures of slavery

C quilts were made to help slaves escape towards freedom

D women used to hang quilts in the windows

---

183 **During American Civil War:**

A quilts indicated safety

B quilts had always a black center

C Log Cabin quilts were not produced yet

D quilts were the most important symbol of slavery

---

184 **Pictures of slaves in shackles:**

A were always found on quilts

B have spread even before the death of Abraham Lincoln

C were sometimes found on quilts

D were never found on quilts

An international team of astrophysicists has observed what they say is the first evidence of energy being extracted from a supermassive black hole. The black hole, at the centre of a distant galaxy, is spinning and pumping out energy, heating the surrounding gas, which is already unimaginably hot from the force of its gravity. Black holes are objects, usually collapsed stars, that are so massive even light cannot escape their gravity. Astronomers say most galaxies have black holes at their centres and have already shown that smaller black holes spin, but this is the first time they've seen the same behaviour in supermassive black holes. And it's the combination of the black hole's spin and its gravity that causes it to lose energy. The black hole is so massive it twists the fabric of space around it. This distorts the surrounding magnetic fields, causing them to tighten around the black hole, slowing its spin. But the lost energy has to go somewhere. The "friction" between the black hole and the surrounding space heats up the nearby gases, causing them to emit X-rays. It's this X-ray glow that the scientists observed using the European Space Agency's XXM Newton satellite, launched in 1999. By calculating the spin and other characteristics of supermassive black holes, they hope to learn how the galaxies themselves were formed. The possibility of energy transferring from a black hole to its surroundings was first predicted mathematically 25 years ago, using the laws of conservation of energy.

185 **The contact between the black hole and the surrounding space :**

A generates attrition

B produces new gases

C causes a loss of X-rays

D reduces the nearby gases

---

186 **The black hole's loss of energy:**

A is due to the combination of its spin and gravity

B distorts the surrounding magnetic fields

C occurs when a star collapses

D depends on its spin acceleration

---

187 **The gases which surround the black hole:**

A retain the energy it gives off

B increase their temperature because of the energy it releases

C cause it to lose its gravity

D cause it to lose its energy

---

188 **Astrophysicists state that:**

A the laws of conservation of energy will maybe explain the heating of gases surrounding the black hole

B whilst small black holes spin, the supermassive ones are immovable because of their enormous force of gravity

C the energy extracted from a supermassive black hole produces magnetic fields around it

D galaxies usually have a spinning black hole at their centres

---

189 **The energy released by a supermassive black hole:**

A is transferred to a smaller one

B causes emissions of X-rays by the surrounding gas

C gives rise to a new black hole

D distorts the fabric of space around it

---

190 **Black holes are:**

A objects with an extraordinary force of gravity

B magnetic fields

C still collapsed stars

D still massive objects

---

191 **Because of its enormous mass:**

A the surrounding magnetic fields tighten around the black hole

B the black hole loses its force of gravity

C the black hole does not disperse its energy

D the black hole receives energy from the nearby gases

---

192 **Supermassive black holes' behaviour:**

A cannot be compared with that of smaller ones

B is still a mistery

C will be observed by the XXM Newton satellite

D can help to know galaxies formation

Around 50 million people worldwide have epilepsy, sudden and recurrent disruptions to their mental function, consciousness, senses or movements caused by sporadic malfunctions of certain nerve cells. Up to 30% of those are resistant to more than three medications and are said to have 'intractable epilepsy'. A strict high-fat, low-carbohydrate, calorie-restricted diet reduces seizures in children with intractable epilepsy. So concludes the largest and longest trial of eating plan that was first suggested almost a century ago. For about two years, epileptic youngsters on a 'ketogenic diet' eat 25% less than normal and consume 90% of their daily calories as fats. They take vitamins and minerals to avoid malnutrition and their condition is monitored by a doctor and a dietician. Ketogenic meals produce a high blood concentration of partly burned fat molecules called ketone bodies. But it is not clear why this reduces convulsions. There is now a flurry of activity to identify the biochemistry underlying the treatment's success and to develop new drugs that mimic its anticonvulsant effects.The diet is an excellent alternative to drugs for children whose seizures cannot be controlled easily but the study confirms that the diet should not be considered as a last-ditch treatment for children resistant to conventional anti-epileptic therapies.

193 **Epilepsy is caused by:**

A a sporadic loss of consciousness

B intermittent failures of some nerve cells

C an unbalanced diet

D sudden convulsions

---

194 **Ketogenic meals produce:**

A a defective assimilation of calories

B a slowing down in the absorption of vitamins and minerals

C a high blood concentration of ketone bodies

D a more rapid reduction of fat molecules

---

195 **Patients are said to have 'intractable epilepsy' when:**

A they cannot undergo a ketogenic diet

B they average more than three seizures per month

C they resist to more than three treatments with drugs

D they cannot reduce the frequence of seizures

---

196 **The ketogenic diet can be used as:**

A a valid alternative to anticonvulsive drugs

B a desperate attempt to avoid conventional drugs

C a valid treatment to lower fats in the blood

D an efficacious method to avoid malnutrition

---

197 **Researchers have not so far been able to clearly understand:**

A whether the ketogenic diet works or not

B the ketogenic diet's long-lasting effects

C how the ketogenic diet affects nerve cell's biochemical processes

D how the scarce assumption of vitamins and minerals through a ketogenic diet can be counterbalanced

---

198 **A ketogenic diet is based on:**

A the consumption of high quantities of fats

B food rich in carbohydrates

C a regular assumption of fruit and vegetables

D the assumption of vitamins and minerals

---

199 **Following the study's results, researchers:**

A have already developed new drugs imitating the anticonvulsant effects of the ketogenic diet

B have optimized the already existing drugs

C are trying to devise new anticonvulsant drugs

D have been able to develop a drug that raises levels of ketone bodies in the blood

---

200 **In children following a ketogenic diet, the assumption of vitamins and minerals is necessary to:**

A prevent the effects of an unbalanced regimen

B receive the proper quantity of daily calories

C provide some protection against excessive fats in the blood

D lower the blood concentrations of ketone bodies

All enterprises, regardless of size and sector, operate in an increasingly competitive global marketplace where all survival strategies rely on new ideas, new products, and never-ending improvements in service. Large businesses set up their own research and development departments which spend billions to boldly go where no company has gone before. But what of the small and medium enterprises? Some small companies begin with a brilliant new idea and highly trained personnel - often acquired ready-trained by a large company. But even this type of small and medium enterprise must develop continuously, and day-to-day demands can overwhelm efforts to keep up with new ideas and develop new products.To find ways through this maze, the European Commission initiated the Regional Innovation and Tecnhological Transfer Strategies (RITTS) programme in 1994, and it has since spread to 42 regions. EU innovation policies had already stimulated the proliferation of local innovation support mechanisms such as science parks, advice centres, and university technology transfer offices, but it had become apparent that these local mechanisms needed to be integrated into a regional approach if they were to provide the appropriate mix of support. The RITTS approach is based on three characteristics. Strategies should be driven by small and medium enterprises' needs as identified from various case studies; they must build a consensus among as many of the various stakeholders as possible; and they must develop practical solutions to the problems identified.

201 **In an increasingly competitive global market:**

- **A** small and medium enterprises are obliged to set up their own research and development departments
- **B** only large companies need the implementation of survival strategies
- **C** large companies as well as small and medium enterprises must develop continuously
- **D** innovation is not necessary for a healthy business

202 **Small and medium enterprises:**

- **A** need to associate against large companies in order to survive
- **B** are able to have their own research and development departments
- **C** often acquire highly-trained personnel from large companies
- **D** need advanced machinery

203 **The RITTS programme aims to:**

- **A** support large companies
- **B** form highly-trained personnel for large companies
- **C** develop new products
- **D** favour interaction between regions and local mechanisms

204 **The RITTS programme has so far:**

- **A** been harshly criticized by the European Union
- **B** spread to 42 regions
- **C** obtained poor consensus
- **D** proved unable to support small enterprises with innovation support mechanisms

205 **One of the characteristics of the RITTS programme is:**

- **A** to build a widespread agreement among stakeholders
- **B** to develop general strategies
- **C** to develop theoretical solutions to the problems identified
- **D** to help small firms to get over bureaucratic hurdles

206 **Survival strategies in a competitive global market rely on:**

A cooperation between large companies and small firms

B total restructuring of infrastructures

C the creation of consortia for the acquisition of new equipment

D never-ending improvements

---

207 **Before starting the RITTS programme in 1994, the European Union:**

A had already stimulated the cooperation between regions and local mechanisms

B had already stimulated the proliferation of infrastructures for innovation

C had completely underestimated the problems concerning small and medium enterprises' needs

D had already devised schemes to provide an appropriate integration between regions and small firms

---

208 **Day-to-day demands in a competitive marketplace:**

A can overwhelm small and medium enterprises' efforts to innovate

B do not particularly affect large companies' policy

C can be easily faced by small and medium enterprises

D are useful to small firms to face the need of new ideas and products

---

Psychologists maintain that it is while dreaming that the brain consolidates information it has absorbed during waking hours. But some neuroscientists in Los Angeles, rebut this claim. In particular, they attack the idea that 'rapid-eye movement' (REM) sleep, when dreams usually occur, is necessary for learning. For a start, dream research is a methodological nightmare. Take the hypothesis that periods of intensive learning are correlated with longer periods of REM sleep. One way to test this idea is to measure levels of REM sleep in laboratory animals which have been through novel 'learning situations', and compare them with controls which have not. Yet these learning situations typically force animals to work out how to avoid electric shocks, or to perform some clever trick to get a bit of food. The stress of these experiences, could produce increases in REM sleep: the learning itself may have nothing to do with it. Testing the reverse hypothesis, that preventing REM sleep blocks memory formation, poses similar problems. Some researchers have deprived rats of REM sleep by placing them on a small platform in a tub of water. In rats, as in humans, REM sleep relaxes the muscles. When the rat on the platform goes into REM sleep and relaxes, it falls into the water. Rats who get doused in this fashion show worse memory retrieval than rats who sleep undisturbed on a larger platform. The lack of REM sleep may be to blame, but another study suggests that the discomfort of being confined to a small platform, fatigue and the shock of getting wet have more to do with it. When a team of researchers came up with a less stressful way of blocking REM sleep in rats, by gently rocking the animals awake when they drifted off, the REM-deprived rats did no worse than usual on the memory tasks.

209 **To test the theory of the correlation between learning and REM sleep:**

- **A** rats are first forced to find a way to get food and then deprived of REM sleep through exclusive recourse to stressful ways
- **B** laboratory animals have been subjected to 'learning situations' and then compared with others which have not
- **C** rats are always deprived of REM sleep
- **D** laboratory animals are first deprived of REM sleep and then forced to try to avoid electric shocks which could damage their long-term memory

210 **When a rat is deprived of REM sleep:**

- **A** its muscles relax
- **B** its memory retrieval is inevitably worse
- **C** its memory retrieval may get worse
- **D** it tends to lose its balance

211 **The link between REM sleep and learning is:**

- **A** questioned by some neuroscientists
- **B** possible only with very long periods of REM sleep
- **C** always evident in rats
- **D** rare in rats

212 **Learning situations:**

- **A** are never stressing
- **B** can produce increases in REM sleep since they are particular stressing
- **C** strictly consist in forcing animals to find a way to get a bit of food
- **D** have no effect on REM sleep

213 **Psychologists:**

- **A** agree with neuroscientists that dreams are necessary for learning
- **B** say that brain dreams about experiences made during waking hours
- **C** say that dreams are related to learning and memory
- **D** do not believe that brain can't have memory of the information absorbed during sleeping hours

214 **In comparison with laboratory animals exposed to a stressful way of blocking their REM sleep, rats more gently deprived of it:**

A showed worse memory retrieval all the same

B were immediately able to avoid electric shocks

C went through learning situations more easily

D did not show a worsening of their memory retrieval

---

215 **The fact that a rat can show worse memory retrieval after falling into the water from a small platform while sleeping:**

A necessarily happens because it was deprived of REM sleep

B may depend on the stressful way of blocking its REM sleep

C always depends on the intensity of learning situations

D is due to the too short REM sleep duration

---

216 **When a rat is placed on a small platform in a tub of water:**

A its REM sleep is consequently blocked because if the animal relaxes it falls into the water

B it immediately falls into the water

C it is not able to fall asleep because it is afraid of water

D its muscles cannot relax

What has 10 feet, weighs 10,000 kg, travels with a 15,000-kg companion and will be making minefields in Bosnia and Herzegovina safe for both local people and returning refugees from the 1992-95 war? The answer is Bigfoot, a remote-controlled British mechanical superhero that inventor Bob French, financial backer Redbus Investments, demining experts and NGO representatives say is safer, faster and more cost-effective than traditional clearing methods. Bob French developed the Redbus Land Mine Disposal System consisting of Bigfoot and its companion, Mineworm. Working together, the machines are expected to clear 5,000 sq m of land a day. A human demining team could cover only 200 sq m in that time. Equipped with four cameras, the machines are steered and monitored from a portable base station. Bigfoot's job is to stamp, with equal pressure, on every square centimeter of ground that it passes over, detonating any mines and aborting the shocks through a system of blast deflection and energy dissipation. If a foot is damaged by a large device, such as an antitank mine, it can easily be replaced. Mineworm follows behind, crushing ordnance and removing ferrous metal. A rotating excavator lifts the soil and returns it, ready for agricultural use, to the ground.

217 **Traditional methods of mine clearance:**

A are more advantageous than Bigfoot because they are safer

B allow men to work in conditions of maximum safety

C are expensive because they require high maintenance costs

D are less advantageous than Bigfoot because they do not allow the demining team to work very fast

---

218 **Bob French is:**

A the inventor of Bigfoot but not the inventor of Mineworm

B the financial backer of Redbus Investments

C the inventor of Redbus Land Mine Disposal System

D the chairman of NGO

---

219 **The system used by Bigfoot to detonate mines avails itself of:**

A shocks to avoid blast deflection and energy dissipation

B both processes of deflection and dissipation

C every square centimeter of ground that it passes over

D wind deflection as well as of energy dissipation

---

220 **Bigfoot's main movement is:**

A to tread on the ground with a regular pressure

B to crush every ferrous object it finds on the ground

C to lift the soil to find out possible ordnance

D to run on the ground keeping the same pressure

---

221 **Bigfoot can clear and make safe:**

A 5,000 sq m of land a day if it works alone, much more if it works together with its companion

B 200 sq m of land a day

C 10 feet of land a day

D 5,000 sq m of land a day but only if it works together with its companion

---

222 **How is Bigfoot controlled?**

- **A** It is steered by its companion Mineworm
- **B** It is programmed electronically before it operates
- **C** It is controlled by its inventor Bob French
- **D** It is remote-controlled

---

223 **To make vegetation grow on demined fields it is necessary:**

- **A** to spread a particular kind of fertilizer
- **B** to wait five or six years
- **C** to use an excavator that lifts and drops the soil
- **D** to replace every antitank mine after the clearance

---

224 **Mineworm is a machine that:**

- **A** follows Bigfoot and weighs 10,000 kg
- **B** goes hand in hand with its companion and weighs 10,000 kg
- **C** comes after Bigfoot and weighs 15,000 kg
- **D** comes ahead of its companion and weighs 15,000 kg

When you squeeze the bright star-shaped yellow buds of the hardy perennial Hypericum perforatum, they yield a red juice that reminded medieval Europeans of the blood of John the Baptist. Valued for its magical healing powers, St. John's wort, as the shrub is commonly called, has been used since the time of ancient Greece for treating any number of ailments, from liver and bowel disorders to hysteria, obesity and insomnia. But St. John's wort came into its own in 1984, when the German government classified it as a MAO inhibitor, on the basis of in-vitro studies, and approved its use as a mild, natural antidepressant. Sales took off both in Germany, where St. John's wort easily outsells prescription drugs like Prozac, and in the U.S., where concoctions of the herb became flagships of the booming alternative-medicine industry. Before last year's warnings that St. John's wort could interfere with other medications, notably AIDS treatment, antibiotics, cardiac drugs and oral contraceptives, yearly sales had reached $310 million. Even today, some 1.5 million Americans take the extract regularly to treat their psychic pain. In what is by far the most definitive study yet of the efficacy of St. John's wort in treating major depression, doctors last week concluded that the extract is essentially useless. On the basis of these findings, Dr. Richard Shelton, a psychiatrist at Vanderbilt University and the study's lead author, says flatly that he wouldn't recommend St. John's wort to any of his patients. The study's conclusions touched a raw nerve among those who see herbal medicine as a gentler, more natural route to healing.

225 **When the German government approved the use of St. John's wort in 1984 as a natural antidepressant:**

- **A** sales decreased and products like Prozac went sky-high
- **B** sales increased and exceeded those ones of drugs like Prozac
- **C** the alternative-medicine industry suffered a bad blow
- **D** the sales did not come up to producers' expectations

226 **The Hypericum perforatum is:**

- **A** a plant resembling St. John's wort
- **B** the root of St. John's wort
- **C** the scientific name of St. John's wort
- **D** a concoction of herbs used in medieval medicine

227 **According to Dr. Richard Shelton, St. John's wort is:**

- **A** an effective extract for treating ailments such as liver and bowel disorders
- **B** an effective antidepressant that can also be used to treat other ailments
- **C** a useless antidepressant that can't give good results
- **D** a useless antidepressant because its effects are too slow

228 **The reaction of those people that use herbal medicine as a treatment for their health problems to Dr. Shelton's conclusions has been the following one:**

- **A** they have dismissed herbal medicine abruptly
- **B** they have lowered their doses of herbal medicine
- **C** they have dismissed Dr. Shelton's conclusions as a matter of no importance
- **D** they have been directly involved into the matter

229 **The use of St. John's wort can:**

- **A** have contraindications for those patients who follow an AIDS treatment or take antibiotics
- **B** have no contraindications at all as it is very mild
- **C** be dangerous in case of pregnancy
- **D** cause problems if the patient makes use of other medicines whatever they are

230 **The Hypericum perforatum has:**

A red berries containing a purple juice

B star-shaped leaves of two different hues

C juicy buds but no leaves

D yellow exterior parts containing a bloody juice

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231 **In the U.S.A. high sales of herbal medicines:**

A haven't included St. John's wort

B have mostly been due to the presence of St. John's wort in various concoctions

C have hardly ever been recorded on the market

D have favoured the spreading of St. John's wort

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232 **In the U.S.A. yearly sales of St. John's wort products amounted to $310 million:**

A some years ago but now they are falling

B before they were introduced in Germany

C before the findings relative to their contraindications

D after the conclusions of Dr. Shelton's study

Text messaging isn't just for short notes any more. Yoko Kataoka, a 19-year-old from Kitakyushu in southern Japan, wrote the novel Hotekura (Hotel Residence) on her cell phone, using nothing but her thumbs. Kataoka submitted snippets of a quasi-autobiographical account of a high school girl's summer romance to an online e-mail magazine service called GoodCrew PAFE run by electronics maker Casio. For a monthly fee of $1.70, GoodCrew PAFE subscribers receive access every morning to a newsletter, composed mostly of letters, poetry, jokes and daily musings written by other users. Kataoka began her literary career about two years ago during frequent bouts of insomnia. Satoshi Ogasawara, editor of GoodCrew PAFE, sensed fresh talent after reading the first few chapters of Hotekura. Kataoka continued installments of her novel, which comprises 131 chapters, each 400 to 1,000 characters long, for the next 11 months. Kataoka says it took her between five and ten minutes to punch a chapter into her cell phone. A couple of weeks after the series concluded, Ogasawara called her with yet another proposition: how would she feel about publishing a novel on paper? Ogasawara introduced Hotekura to Review Japan, a company that runs an Internet book-review site and recently launched a direct publishing project in which books are printed only after orders are received.

233 **Yoko Kataoka used her cell phone to:**

- **A** write a novel as well as poems
- **B** let people know her work
- **C** send promotional messages to the users of GoodCrew PAFE
- **D** get in touch with the editor Satoshi Ogasawara

234 **$1.70 is the monthly sum paid by:**

- **A** GoodCrew PAFE in favour of Yoko Kataoka
- **B** electronics maker Casio
- **C** GoodCrew PAFE users
- **D** Yoko Kataoka to advertize her novel

235 **How did Yoko Kataoka publish the remaining part of her work?**

- **A** In installments on her cell phone
- **B** All at once in a review
- **C** On paper in a review
- **D** In installments in an Internet book-review site

236 **What is Hotekura about?**

- **A** It is entirely about Yoko Kataoka's own life
- **B** It is about Yoko Kataoka's literary career
- **C** It is about a chance meeting in a summer school
- **D** It is about a girl's love affair

237 **The editor of GoodCrew PAFE thinks Yoko Kataoka:**

- **A** lacks talent therefore she won't become a famous writer
- **B** has to look for a financial backer if she wants to see her works published
- **C** is talented and she can write a novel using the traditional method
- **D** is talented but she needs more practice

238 **Review Japan is a company which:**

A controls the e-mail magazine service called GoodCrew PAFE

B invests exclusively in young talents

C has had the idea of printing books only if they are ordered before

D is in competition with an Internet book-review site

---

239 **Who read the initial parts of Yoko Kataoka's Hotekura first?**

A A girl in a summer high school

B The editor of GoodCrew PAFE

C The editor of Review Japan

D One of the subscribers of GoodCrew PAFE

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240 **Users of GoodCrew PAFE are offered:**

A only excerpts of Yoko Kataoka's novel

B various kinds of writings

C an economic telephone service for international calls

D a constant service of information operating 24 hours a day

Almost 500 years ago, Leonardo da Vinci sketched out what fans call the "Mona Lisa of bridges" and what critics said could not be built. Five centuries after a Turkish sultan rejected the project, the bridge opened yesterday, albeit 1,500 miles north of the sunny spot he intended. With a helicopter buzzing overhead, cranes lifted the huge white cloth to unveil the bridge to the 500 people gathered in the rain, wind and cold of Norway. This is the first time any of Leonardo's architectural and civil engineering designs has been built. Da Vinci designed the bridge in 1502 to cross the Golden Horn inlet at Istanbul. With a length of 346 meters, it would have been the world's longest bridge at the time, if only Sultan Bajazet II had believed it feasible. Vebjoern Sand, a Norwegian artist who fell in love with the structure in 1995, convinced the Norwegian highway department that the bridge could be built in any scale, which led to the commissioning of a modest 100-metre-long, eight-metre-high wooden version in Aas Township, about 20 miles south of the capital, Oslo. Although Da Vinci envisioned the bridge in stone, the Norwegians thought it too expensive and settled for a wooden version. The bridge, actually a pedestrian crossing, is supported by three light-coloured wooden arches, like a series of archer's bows pulled back in parallel. Over them, a pathway in wood spans the E18 highway. The arches are built in glued pine, a process used in many of the venues at the 1994 Winter Olympics further north in Lillehammer.

241 **About 500 years ago:**

- **A** as the Turkish sultan Bajazet II had rejected Leonardo's project of a bridge, a Norwegian king supported it
- **B** the Turkish sultan Bajazet II did not accept Leonardo's project of a bridge
- **C** a bridge was built in Norway although at first it had to be built in Turkey
- **D** a new-built bridge wasn't opened because it wobbled

242 **Leonardo Da Vinci designed the 'Mona Lisa of bridges' to:**

- **A** cross an inlet in Norway
- **B** give a pedestrian crossing to the inhabitants of Aas Township
- **C** satisfy a Turkish sultan who asked for a bridge in his country
- **D** cross an inlet in Turkey

243 **500 is the number of people:**

- **A** present at the inauguration of the bridge
- **B** the bridge can carry
- **C** needed for the construction of the bridge
- **D** involved in the planning and construction of the bridge

244 **The new bridge that has been built has a length of:**

- **A** 346 metres
- **B** 1,500 miles
- **C** 100 metres
- **D** 20 miles

245 **Vebjoern Sand thought:**

- **A** the old project needed some modifications
- **B** Leonardo Da Vinci's bridge could not be realized
- **C** Leonardo Da Vinci's bridge was feasible in all measures
- **D** Leonardo Da Vinci's bridge was feasible only in a particular scale

246 **The bridge built in Norway is made up of:**

A a series of bows pulled back in parallel

B a series of arches made of stone

C three light-coloured eight-metre-hight wooden arches

D three coloured arches built in glued pine

---

247 **The arches of the new Norwegian bridge have been built in glued pine, a process used at the 1994 Winter Olympics:**

A in different Norwegian localities north of Lillehammer

B just in the suburbs of Lillehammer

C in the town of Lillehammer

D just in the north side of the town of Lillehammer

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248 **What happened on the occasion of the celebration for the new bridge?**

A It was postponed because of the rain, wind and cold

B A big cloth was taken off and the bridge shown to the people present

C Critics said the construction of the bridge had been a big mistake

D A helicopter crashed on the crowd

From popular films featuring the exploits of Jason and the Argonauts to a lexicon including phrases such as "Achilles' heel," the heroes and gods of the ancient world are still with us. Using silly illustrations and plenty of information on the myths of the mortals and immortals of long ago, drawing upon Homer's "Iliad" and "Odyssey" and the works of Apollodorus, who wrote centuries after the myths were first narrated, but provided a solid retelling, Mr Skidmore has assembled an efficient site featuring cartoony representations of the characters and stories to which he pays tribute. The site's opening page shows a Disney-style Zeus wielding a lightning bolt and accompanied by cronies who come to life as visitors pass the cursor over the main sections, "Gods," "Heroes," "Today" and "Encyclopedia." "Gods" begins with a gorgeously drawn page by Gordon Dean that depicts the 12 major Olympians: Aphrodite, Apollo, Zeus, etc. A click on each deity displays a biography. Next, the "Heroes" section offers a multipage illustrated presentation of each hero's story, including an index of characters. Finally, the recent addition "Today" offers a place for Mr Skidmore to explain the relevance of these mythological characters in today's world. He uses Hercules to demonstrate the phrase "herculean effort". I found a tiny link on the front page, "Mythology in the News," more interesting. It had a small feature on how dinosaur bones found in ancient times might have helped inspire some of the Greek mythologies.

249 **Where did Mr Skidmore draw upon to create his site?**

- **A** a gorgeously drawn page by Gordon Dean
- **B** popular films featuring the exploits of Jason and the Argonauts
- **C** Homer's Iliad and Odyssey and the works of Apollodorus
- **D** Walt Disney cartoons

250 **The 12 major Olympians are depicted in:**

- **A** the site's opening page
- **B** one of the main sections of the site
- **C** 'Mithology in the News'
- **D** an index of characters

251 **Mr Skidmore features Greek myths through:**

- **A** cartoony representations
- **B** pictures from popular films
- **C** Gordon Dean's illustrations and comments on mythological characters
- **D** a mythological lexicon which unfortunately remains unexplained

252 **Some of the Greek mythologies might have been inspired by:**

- **A** the myth of Hercules as narrated in the "Odyssey"
- **B** dinosaur bones
- **C** the cronies that accompanied Zeus
- **D** biographies such as that of Artemis

253 **If a visitor needs information about a particular deity he has to:**

- **A** pass the cursor over the main sections in the "Encyclopedia" page
- **B** look for the site's opening page drawn by Gordon Dean
- **C** click on that particular deity in the section 'Gods'
- **D** click on that particular deity in the section 'Heroes'

254 **Mythological characters are relevant in today's world because:**

- **A** their stories can be narrated and retold
- **B** they refer to mortals as well as immortals of long ago
- **C** a lot of expressions of our language refer to them
- **D** their stories lend themselves to several illustrated presentations

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255 **In his site Mr Skidmore avails himself of:**

- **A** myths coming from all over the world
- **B** the visitors' tips
- **C** ancient illustrations
- **D** illustrations as well as written information

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256 **Zeus is depicted:**

- **A** on the first page of each main section
- **B** only on the front page of the section 'Gods'
- **C** next to the index of characters
- **D** on the site's opening page as well as on the first page of the section "Gods"

The addictive pull of internet shopping is dragging thousands of victims into a spiral of debt, including thousands of women who have run up huge credit card bills they cannot repay. The lure of 24-hour access and the explosion in goods and services on offer has seen a 10 per cent increase in credit card debts in the UK this year. Much of it has been attributed to online spending. The latest report on internet usage shows the number of adults logging on at home has risen from 10 million in October last year to 15.5m this month. The report by Continental Research, which has monitored internet access in the UK for the past six years, found that while online shopping used to be experimental it is now becoming habitual, especially for women. Most of us can shop online sensibly, but for some it provides an easy, anonymous and accessible way to feed their habit. It also provides secrecy, a central part of any addiction. Dr Samantha Haylett, a psychologist and expert in addiction, said that it's compulsive in the same way as alcohol and gambling, and addicts find themselves completely unable to stop themselves, despite debt mounting and relationships disintegrating. It's the thrill and the buzz of purchasing that overrides all the negative consequences. But confidence is also growing in online security. Danny Meadows-Klue, chairman of Interactive Advertising Bureau, the internet commercial watchdog, said that online card fraud is a drop in the ocean compared to total credit card fraud, but it is increasing.

257 **A lot of victims of internet shopping:**

- **A** have been robbed of their credit cards
- **B** having run up huge bills, have been deprived of their credit cards
- **C** have run into debt because the system did not work well
- **D** having used their credit cards incautiously, have got into debt

258 **According to the last report on internet usage, this year the number of:**

- **A** women shopping online has increased due to credit card debts
- **B** people shopping online is the same as last year
- **C** people shopping online has decreased
- **D** grown-ups shopping online has increased

259 **The report by Continental Research proved that online shopping:**

- **A** cannot become habitual for men
- **B** was at first experimental but now it is becoming habitual for people
- **C** is experimental as well as habitual only for women
- **D** was at first experimental because it monitored shoppers' habits

260 **The chairman of Interactive Advertising Bureau stated that:**

- **A** the percentage of online card fraud is very high if compared to that of total credit card fraud
- **B** online card fraud is only a small part of total credit card fraud
- **C** online card fraud is a considerable problem but it is lessening
- **D** total credit card fraud depends mostly on online card fraud

261 **The 10% increase in credit card debts in the United Kingdom may depend on factors such as:**

- **A** the circulation of large quantities of money
- **B** the widespread consumerism
- **C** the alluring internet shopping 24 hours a day and the offer of various goods and services
- **D** the sense of unfulfilment that is spreading among the people

262 **The psychologist Samantha Haylett thinks:**

A online shopping addicts do not run the same risks as alcohol addicts and gamblers

B online shopping addicts are not like alcoholics or gamblers because they can stop if they want to

C an online shopping addict cannot be said to be a proper addict because his/her shopping is not compulsive

D an online shopping addict is not able to stop himself/herself even though he/she runs up debts and destroys relationships

---

263 **Online shopping is widely spreading also because:**

A it gives the opportunity of buying without being seen out in public

B shoppers don't have to pay any taxes on the products

C shoppers can have all products before they are put on the market

D it is cheaper and faster than regular shopping

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264 **Who has run up huge debts by internet shopping?**

A a lot of men and women

B only shopping addicts

C above all alcohol addicts and gamblers

D people having serious problems in their family relationships

---

Many shades on the market don't fully block the two main types of ultraviolet radiation that have been linked to everything from wrinkles to sunburn to skin cancer. Ophthalmologists are increasingly convinced that prolonged exposure can lead to a host of vision problems as well. Sometimes the trouble shows up right away. Water skiers, or snow skiers for that matter, can develop a type of temporary blindness, called photokeratitis, that occurs when reflected sunlight actually burns the cornea. Other conditions may be triggered after years of exposure. Studies have linked UV radiation to an increased risk of cataracts, in which the lenses of the eyes become cloudy, as well as to macular degeneration, in which the cells in the central part of the retina slowly die. A good pair of sunglasses should have an official label indicating that the lenses absorb 99% to 100% of the UVA and UVB rays. What you shouldn't accept, however, is any nonspecific wording such as 'UV block'or 'maximal UV protection.'Without the right label, deeper tints can actually make things much worse. It's normal for our eyes to widen and let it more light when we wear dark glasses. For a little extra margin of safety, choose lenses that are 'polarized.' This cuts down on glare by reflecting the sunlight that bounces off smooth surfaces.

265 **Cataracts and macular degeneration are two effects of:**

A the use of sunglasses with lenses reflecting all UVA and UVB rays

B UV radiation and photokeratitis

C a degeneration of the lenses of the eyes

D UV radiation

---

266 **Ultraviolet radiation can cause:**

A wrinkles, sunburn, skin cancer and other problems

B either wrinkles or sunburn

C the macular degeneration of the lenses of the eyes

D wrinkles, sunburn, skin cancer and other problems only to subjects prone to these troubles

---

267 **The trouble caused by prolonged exposure:**

A always appears right away

B appears gradually soon after the exposure

C generally appears after a long period of exposure

D can appear right away as well as after long periods of exposure

---

268 **A good pair of sunglasses should have a wording such as:**

A UVB protection

B 'UV block' or 'maximal UV protection'

C UVA protection

D 99% or 100% UV protection

---

269 **Sight conditions are made worse by:**

A polarized lenses

B dark sunglasses without the right label

C labelled dark sunglasses

D light sunglasses with the right label

---

270 **‘Polarized’ lenses are advised by ophthalmologists because they:**

A reduce light by diverting sun rays that are reflected in smooth surfaces

B reduce light by focusing sun rays that are reflected in smooth surfaces

C cut down the glare by absorbing the sunlight

D lower light by altering sun rays that are reflected in smooth surfaces

---

271 **Photokeratitis is a temporary blindness that occurs:**

A when the cornea is damaged by reflected sunlight

B when reflected sunlight holes the cornea

C when the cornea is still sensitive to sun rays

D when the central cells of the retina dies

---

272 **There are good sunglasses on the market that:**

A don’t block UVA and UVB rays

B can block either UVA rays or UVB rays

C block the two main types of ultraviolet radiation

D can’t block UVA and UVB rays at the same time

The U.K. Government announced that it plans to spend over $100 million on setting up or expanding nearly 250 CCTV systems in city centers, housing estates, train stations and parking lots in England and Wales, adding to the estimated 1 million cameras already in place. The nightmare world of George Orwell's 1984, where cameras followed citizens into the bedroom, seems dangerously close. Mark Littlewood, campaigns director of human-rights group Liberty, says CCTV use is mushrooming. His organization worries over the lack of regulation: material gathered by CCTV is only covered by a footnote to the 1984 Data Protection Act. The London Borough of Newham, however, is delighted with the way CCTV has made its streeets safer. Security chief Bob Lack says the borough can't put up cameras fast enough for the public. His team is now adding FaceIt facial-recognition software from U.S. firm Visionics to deter persistent young street thieves. Offenders enrolling in the borough's two-month-old Intensive Surveillance and Supervision Programme live in the community under constant watch instead of going to prison. So they know what they're up against, they're brought into the control center and shown the banks of hardware. The software has led to no direct arrests, but criminals have been deterred thanks to the publicity. Lack says they know it's there and realize an alibi won't be so convincing if their face has been seen around town.

273 **The U.K. Government intends to invest in:**

- **A** the construction of new roads
- **B** a careful public watch
- **C** publicity of softwares
- **D** bank's surveillance

274 **1984 is:**

- **A** the year of the first setting-up of the CCTV system
- **B** the title of one of George Orwell's novels
- **C** the year of the first tests with the CCTV system
- **D** the year of improvement of the CCTV system

275 **Mark Littlewood thinks:**

- **A** CCTV system is wrong
- **B** CCTV use is decreasing very fast
- **C** CCTV use is a danger for citizens, thus agreeing with the footnote in 1984 Data Protection Act
- **D** CCTV system is spreading very fast

276 **Offenders under the Intensive Surveillance and Supervision Programme live:**

- **A** in the community but just for two months
- **B** in prison
- **C** in the community
- **D** in the control center

277 **CCTV has already had results such as:**

- **A** the presence of a great number of criminals around town
- **B** more arrests
- **C** less arrests
- **D** a widespread determent among criminals

278 **U.S. firm Visionics produces:**

A FaceIt facial-recognition software

B the Intensive Surveillance and Supervision Programme

C material to improve the FaceIt facial-recognition software

D CCTV systems

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279 **CCTV use is regulated by:**

A a great deal of rules

B an important rule included in the 1984 Data Protection Act

C a simple note to the 1984 Data Protection Act

D the 1984 Data Protection Act

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280 **Security chief Bob Lack stated that:**

A the borough doesn't have sufficient cameras to put up

B the borough doesn't intend to invest in cameras any more

C the borough has interpreted the needs of the public

D the borough needs more instructions to put up cameras

Molecular biologists are trying to make sense of protein molecules in the cell. Two new techniques may help. One deduces a protein's function from its shape; the other deduces its shape from a list of component parts. Having read most of the human genome, researchers can deduce a protein's sequence - the chain of amino acid building blocks of which it is made. In a functioning protein, this chain folds up in a particular three-dimensional way. The first step in understanding a protein's job is therefore to work out its shape. Most proteins contain dozens or hundreds of amino-acids, so there is an astronomical number of ways in which these might be arranged into a compact, folded structure. Fortunately, only a tiny fraction of these folds are found in natural proteins. The challenge is to deduce the best fit of a particular protein sequence to one of these folds. This is called the protein-threading problem. Traditionally, the problem is tackled by assuming that each amino acid prefers to be surrounded by others of a specific kind, and then to look for the best compromise between the needs of all the amino acids. Instead of trying to deduce this from physical and chemical principles, Jayanth Banavar of Pennsylvania University and colleagues use a set of known protein structures to train a computer program to recognize the preferences of each amino acid. Once trained, the program can then predict unknown structures.

281 **Amino acids might be arranged in:**

A one dozen ways

B just a few ways

C a great number of ways

D almost one hundred ways

---

282 **Molecular biologists are trying to deduce:**

A the human genome

B the kind of protein molecules in the cell

C the component parts of each protein

D the best combination of a protein sequence with one of the folds of the amino acid structure

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283 **The computer program used by Jayantah Banavar and colleagues can:**

A reveil unknown protein structures in advance

B recognize the most important amino acids present in a protein

C deduce the exact number of possible combinations of amino acids in a protein

D recognize a set of known protein structures

---

284 **One of the new techniques related to the challenge that molecular biologists are facing aims at:**

A collecting data of unknown molecules

B deducing the number of natural proteins in the cell

C deducing a protein’s job from its shape

D deducing the shape of a protein from its function

---

285 **The traditional method used to face the protein-threading problem avails itself of:**

A a computer program

B assumptions about amino acid preferences

C conventional researches on proteins in a three-dimensional way

D two new techniques

---

286 **A fold is:**

A the protein-threading problem

B a component part of a protein

C a particular type of amino acids

D a way the amino acid structure is organized

---

287 **The new techniques may help:**

A give a name to protein molecules in the cell

B understand the proteins' functions

C make protein molecules in the cell more sensitive

D order the different proteins in the cell

---

288 **A protein's sequence consists of:**

A a chain of chemical principles

B a chain of amino acids arranged in a loose structure

C a chain of amino acids

D a chain of cells

Thanksgiving in Los Angeles. Nothing could be more American. Odd, then, that cinema's latest take on the quintessential U.S. holiday was directed by a woman best known for exploring what it means to be British. But, as she shows in her new film What's Cooking?, Gurinder Chadha has a flair for crossing cultural boundaries on the big screen. Eight years ago, Chadha charmed audiences and critics on both sides of the Atlantic with Bhaji on the Beach, which uses a day out in Blackpool to examine society's constraints on Anglo-Asian women. In What's Cooking? she again focuses on people largely ignored by mainstream filmmakers, this time four ethnically diverse families celebrating Turkey Day four different ways. Before making films, Chadha worked for BBC radio and regional TV news that honed her instincts for a good story but left little room for self-expression. So, while still in her twenties, she traded her tape recorder for a camera. The resulting 1989 documentary, I'm British But…, was hailed as the first film to discuss British immigrant identity from a second-generation Asian point of view. Chadha had found a career, a theme and a mission. What's Cooking? is a fullhearted comedy that makes the point that American identity doesn't come through color or social status, but through shared experience. Although the film only grossed a little over $1 million during its five-week run, it received critical acclaim for its British view of American life. Chadha says that the idea of taking very different communities and putting them together in one film is quite a British idea as multiculturalism is taken for granted in this country in ways that it isn't in the U.S.

289 **In her new film Gurinder Chadha focuses on:**

- **A** a typical American family celebrating the traditional Thanksgiving Day
- **B** a British family celebrating Thanksgiving Day during a holiday in the U.S.
- **C** different people celebrating Thanksgiving Day in America in diverse ways
- **D** four different Turkish ways of celebrating Thanksgiving Day in America

290 **Gurinder Chadha always:**

- **A** tries to present a different culture in every film she makes
- **B** avoids to match ethnically different families in her films
- **C** shows some limitations in crossing cultural boundaries
- **D** tries to overcome cultural boundaries in her films

291 **Chadha's film Bhaji on the Beach deals with:**

- **A** the Atlantic passage of a group of Anglo-Asian women
- **B** a group of Anglo-Asian women perfectly fitted in English society
- **C** the way of living of Anglo-Asian women who want to integrate with the British society
- **D** the troubles Anglo-Asian women meet in the British society

292 **The documentary I'm British But... is:**

- **A** Chadha's first work as a director before she was 30
- **B** a documentary produced by the BBC
- **C** about the problems of second-generation Anglo-Asian people in Britain
- **D** one of Chadha's reportages realized when she still worked for the BBC

293 **In What's Cooking? American identity emerges:**

- **A** from the sharing of the same cultural western traditions
- **B** as the result of a successful social ascent
- **C** from the sharing of the same life experiences
- **D** with difficulty because it is overcome by other different cultural identities

294 **Gurinder Chadha has stated that:**

A multiculturalism is a typical aspect of American society

B multiculturalism in the U.S. is not meant as it is in Great Britain

C American society should follow British example to get to a real racial integration

D multiculturalism in America is not so rooted as people think

---

295 **How has Chadha's last film been received during its first five-week run?**

A Critics and audiences have been charmed by it

B Critics have appreciated the British point of view in dealing with American life

C Audiences have acclaimed and critics have been moderately enthusiastic about it

D Critics have panned it

---

296 **What kind of people does Chadha present in her films?**

A ethnically different people who are normally neglected by great filmmakers

B unfortunate people sharing the same experiences

C immigrants that have become influential personalities in their adopted country

D people belonging to the same cultural tradition

‘Mad cow’ disease, foot-and-mouth disease and fears over health effects from eating hormone-injected cattle or genetically engineered crops have all conspired to undermine the long accepted notion that 'right off the farm' is synonymous with ‘good for you’. But what if the whole enterprise of agriculture, which first emerged 10,000 to 12,000 years ago in the Fertile Crescent of the Middle East, turns out to be deleterious to human health? At first the idea seems absurd. After all, when inhabitants of what is now southeastern Turkey began cultivating naturally occurring einkorn wheat, they were laying the foundation for what would become the first permanent human settlements. But at the same time, say advocates of the ‘Paleolithic diet,’ agriculture launched humankind into essentially unnatural dietary habits. According to Staffan Lindeberg, a Swedish physician, ailments ranging from heart disease and diabetes to arteriosclerosis, osteoporosis and rickets can probably be prevented by diets resembling those of hunter-gatherers. Lindeberg contends that a typical European gets at least 70% of his or her calories from foods that were practically unavailable during human evolution. Proselytizers of the Paleolithic believe the modern European diet relies too heavily on wholewheat bread and handmade pasta or pretzels and beer. The relative scarcity of game may have been one of the factors that encouraged some hunter-gatherers to take up tilling and harvesting. But if the cost of that adaptation shows up in health problems, its benefits are even more apparent. Through agriculture humankind has flourished by the purest measure of evolutionary success: sheer numbers.

297 **Agriculture dates back to:**

- **A** hundreds of years ago
- **B** the prehistoric period
- **C** the Middle Ages
- **D** an indefinite age

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298 **The widely accepted notion that 'right off the farm' stands for 'good for you':**

- **A** is reinforced by the effects of modern agriculture
- **B** is undermined by ancient studies of evolutionary nutrition
- **C** acquires a new deep meaning nowadays due to the failure of modern European diet
- **D** is weakened by the spreading of new diseases and techniques of cattle-breeding and tilling

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299 **Researchers in favour of the 'Paleolithic diet' think:**

- **A** agriculture does not allow men to follow natural dietary habits
- **B** agriculture led men to a natural diet
- **C** Europeans should eat more pasta and less vegetables
- **D** diets of hunter-gatherers can cause various ailments

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300 **Some hunter-gatherers of the prehistoric period took up agriculture driven by different reasons among which:**

- **A** they did not have sufficient food to forage their cattles
- **B** the number of animals had lowered
- **C** they did not know how to amuse themselves in their spare time
- **D** the appearance of the first social organizations that favoured collective field work

---

301 **Deleterious effects of agriculture:**

- **A** are present in the area of modern southeastern Turkey
- **B** occurred about 12,000 years ago in the Fertile Crescent of the Middle East
- **C** occurred in the Paleolithic period
- **D** can cause a lot of diseases such as diabetes and arteriosclerosis

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302 **One of the most important advantages brought about by agriculture is:**

A that the population has increased

B the introduction of light foods that were unavailable in the prehistoric period

C the reduction of health problems

D the end of unhealthy dietary habits

---

303 **According to Lindeberg, a typical European diet:**

A is mostly made up of wheat which is essential to fight various diseases

B contains light healthy foods that were not available in the 'Paleolithic diet'

C is rather similar to the ‘Paleolithic diet’

D is not healthy and it should resemble the 'Paleolithic diet'

---

304 **Proselytizers of the Paleolithic period are those people that:**

A disagree with the dietary habits introduced by modern agriculture

B defend the benefits brought about by agriculture

C do not accept the assumptions concerning a supposed healthy diet followed by prehistoric men

D are in favour of a diet mostly consisting of corn-based food

---

Archaeologists announced rather shamefacedly yesterday that they had finally discovered one of the country's largest hill forts, which has slumbered under their noses since prehistoric studies began. Traces of the sophisticated complex on precipitous Roulston Scar, near Thirsk in North Yorkshire, have been recorded over the centuries, but it is only now to be given its proper place in the schedule of ancient monuments. A combination of global positioning technology by mappers' satellites and 'good old-fashioned legwork' revealed the awesome scale of the fort. Built of timber palisades and girdled by more than a mile of partly stone walk way, the fort has been provisionally dated at 400 BC. As well as its defensive function, archaeologists think it may have been a 'statement of power', possibly housing the Iron Age equivalent of a regional assembly. Satellite plotting, followed up by field surveys, has discovered two heavily defended gates and a four metre high box rampart following the contours of the hilltop. Roulston's colourful history has been one reason for the fort's elusiveness; the famous white horse, carved in the chalk, obliterated a stretch of rampart with its head. Richard Darn, for English Heritage, said that the Victorian schoolmaster who carved the horse created a fake prehistoric monument by destroying part of a real one, which he didn't know was there. The site was also damaged during the second world war, when defensive works were dug in the main area, which has been the base of the Yorkshire Glider Club for 80 years.

305 **At the discovery of one of the English oldest forts, archaeologists:**

- **A** appeared embarassed because they had hoped to discover the fort much earlier
- **B** appeared amazed as well as satisfied with their find
- **C** said that they cannot explain the presence of the fort in that area
- **D** have begun to excavate in the areas near the fort to find other remains

306 **The recently discovered fort:**

- **A** was already recorded in the schedule of ancient monuments
- **B** was never mentioned in documents or chronicles
- **C** was already mentioned in documents that have been lost
- **D** had left traces throughout the ages

307 **The fort may have had the function of:**

- **A** defence of the people gathering inside just for regional assembly
- **B** housing a religious assembly
- **C** defence and gathering of the inhabitants
- **D** control of the territorial acquisitions

308 **The dimensions of the fort have been revealed by:**

- **A** just mappers' satellites
- **B** mappers' satellites and human agency
- **C** just instruments of modern technology such as computer, satellite and X-rays
- **D** a group of archaeologists that have worked together with Richard Darn

309 **Roulston's famous white horse is:**

- **A** the prehistoric monument that supported a rampart of the fort
- **B** a real prehistoric monument partially destroyed by a Victorian artist
- **C** Richard Darn's latest creation
- **D** a false prehistoric sculpture made of chalk

310 **Roulston's history has contributed to:**

A the failure of all previous researches for the finding of the fort

B the finding of the fort

C archaeologists' successful results in that area

D the reconstruction of the fort history

---

311 **The area where the fort is situated was:**

A used as the base of the Yorkshire Glider Club only during the second world war

B damaged by bombs during the second world war

C damaged by excavations made for defence during the second world war

D partly damaged during the second world war and then used as the base of the Yorkshire Glider Club

---

312 **The fort is made up of:**

A two gates and an enclosure made of timber palisades

B a high number of palisades following the contours of the hilltop

C two gates, an enclosure and a rampart adorned by the sculpture of a horse

D two gates, a very long rampart and a path partly made of stone

---

The effectiveness of schemes that seek to promote biodiversity by paying farmers to cut back on intensive agriculture could be called into question by some research findings from Holland. The incentive programmes are partly motivated by the desire of European governments to subsidize farming without promoting the overproduction of food. But the programmes have been publicly justified by claims that they will help to restore ecological biodiversity on farmlands.The study, led by David Klein of the University of Wagenigen, report results from one of the first schemes of this kind, operated by the Dutch government since 1981. Klein finds that it has failed to significantly increase biodiversity in fields where farmers were paid to delay mowing or grazing, and to reduce the amount of fertilizers they used. Klein's study counted species and numbers of plants, birds, bees and hoverflies in 78 fields last summer. Only bee and hoverfly diversity increased under the scheme. Birds actually seemed to prefer intensively farmed fields, possibly because reductions in fertilizer use lead to smaller invertebrate populations and so less food. Klein thinks the study area is representative of farmlands across Northern Europe, but admits that the effectivenesss of such schemes in hill-farm regions, for example, may be quite different.

313 **Subsidy schemes are designed to:**

A enhance intensive agriculture

B implement biological biodiversity

C refund farmers for damages caused by an intense exploitation of farmlands

D to drive noxious birds away from farmlands

---

314 **One of the first incentive schemes operated by the Dutch government:**

A has significantly improved biodiversity

B has intensified mowing and grazing

C has promoted the overproduction of food

D has not proved successful in increasing biodiversity

---

315 **Research findings from Holland have:**

A underlined the importance of promoting biodiversity in Northern Europe

B led to criticism against Europen Governments for not investing money on intensive agriculture

C cast doubt upon the validity of schemes intended to promote biodiversity

D has called into question the high price of subsidy schemes

---

316 **In monitoring 78 fields, Klein found that the scheme:**

A had increased only bee and hoverfly diversity

B had enriched the bird population

C had made the soil more productive

D had favoured the use of fertilizers

---

317 **Birds seem to prefer intensively farmed fields because:**

A food is more abundant

B the number of insects is reduced

C the use of fertilizer is reduced

D the invertebrate population is smaller

---

318 **Through subsidies farmers are asked to:**

- **A** reduce intensive agriculture
- **B** use natural fertilizers
- **C** intensify grazing and mowing
- **D** delay sowing

---

319 **Schemes to subsidize biodiversity:**

- **A** have proved successful in Northern Europe
- **B** have failed all over Europe
- **C** may prove more successful in hill-farm regions
- **D** may prove more successful in intensively farmed fields

---

320 **In subsidizing farming, European governments:**

- **A** fear to reduce the overproduction of food
- **B** aim to stimulate the overproduction of food
- **C** try to avoid the overproduction of food
- **D** help agriculture to increase the overproduction of food

---

It was no comfort to Nelson Mandela that for about 20 years in prison on Robben Island, off Cape Town, he could look out on one of the world's most dramatically beautiful coastlines. The former prison island is just a 30-minute ferry ride from the Cape Town Waterfront. The Robben Island tour service runs from a jetty on the Victoria and Alfred waterfront and is soon to have a 'Little Venice' canal system that will link the lower city with the sea. Once on Robben island things turn a little more rugged: the buses that rattle around the 2-km by 3.5-km island take a battering from the weather and many of the guides are veterans of the African National Congress freedom struggle who are not professional communicators. A Cape Town tradition is tea and cucumber sandwiches at the Victorian-era Mount Nelson, known affectionately as the Nellie and as splendid as some of the English dowagers who stay there. From the pillared gates of the Mount Nelson it is a straight downhill walk to the foreshore past the Gardens, originally planted by the Dutch East India Company settlers of 1652 to supply fresh vegetables, to the South African Museum, the National Art gallery and the parliamentary complex, where a statue of an unsmiling Queen Victoria invites the attention of pigeons. Downtown, the District Six museum reminds visitors of the apartheid past when an entire colored community was evicted from homes near the city center to make way for white development. Now, with the end of apartheid, the colored people are returning to District Six.

321 **Nelson Mandela was imprisoned on Robben Island where:**

A he couldn't look out of the window to admire the beautiful coastlines

B he was relieved by the beautiful view of the coastlines

C he was not relieved by the wonderful landscape even though he could look out on it

D he depicted the beautiful landscape he could see from the window of his cell

---

322 **On Robben Island visitors:**

A are admitted but just for 30 minutes

B are not allowed because of weather conditions that are usually very bad

C can find modern and noiseless buses that cross the whole island

D are admitted and a tour service is available for them

---

323 **The Nellie is:**

A the nickname given by Capetonians to the dowagers who live in the town

B a Cape Town tradition consisting of tea and cucumber sandwiches

C a famous palace resembling some Victorian-era houses

D a famous place where people have tea and cucumber sandwiches

---

324 **In the apartheid past, District Six was the district where:**

A a mixed-race community lived

B the white community lived

C colored people were evicted to make way for a museum

D colored people were confined

---

325 **The statue of Queen Victoria in the parliamentary complex:**

A is not smiling and acts as a lure for birds

B reminds people of an awesome past

C stands as the symbol of an austere age

D smiles at the pigeons gathering around

---

326 **To go to the foreshore a tourist has to:**

A take a ferry from a jetty

B go down Mount Nelson, walk straight and go beyond the Gardens

C walk down Mount Nelson and stop before the Gardens

D go up to Mount Nelson as far as the pillared gates

---

327 **The Victoria and Alfred waterfront:**

A links the city of Cape Town with the sea

B will soon be rebuilt in the same ancient style as that of Venice

C will soon have a canal system like that of Venice

D resembles Venice in its canal system

---

328 **Many of the guides of Robben Island:**

A are professionists that belong to the African National Congress

B were political militants engaged in the struggle for freedom

C can be met on the Cape Town Waterfront

D show to possess a perfect speech due to their past political activities in the African National Congress

---

Doctors are all too familiar with the final stages of Alzheimer's disease, when neurodegenerative plaques and tangles spread throughout the brains of their patients, robbing them of memory, dignity and finally their lives. But what if there were a way to halt this terrifying decline? Researchers at Washington University, last month disclosed what may be an important step towards that goal. No, they didn't announce a new therapy that can stem the ravages of Alzheimer's disease. Instead, they provided compelling evidence that a condition called mild cognitive impairment, or MCI, which is characterized by repeated lapses in short-term memory, is in fact in many patients the earliest stage of Alzheimer's disease. There is also evidence suggesting that a diagnosis of MCI can be confirmed with a magnetic-resonance scan of the brain. Typically, in cases of what turns out to be pre-Alzheimer's MCI, these images will reveal that the hippocampus, a central portion of the brain associated with short-term memory, is somewhat smaller than normal or even shrunken in appearance. At least five therapies are now being studied around the world for their potential in treating MCI. Among the candidate treatments are vitamin E and anti-inflammatory medications called cox-2 inhibitors. The first results aren't expected for three to four years. Until then, doctors are likely to proceed fairly cautiously.

329 **Mild cognitive impairment, or MCI, is:**

A the final phase of Alzheimer's disease characterized by frequent forgetfulness

B a condition of emotional trauma deriving from the incurableness of Alzheimer's disease

C the consequence of full-blown Alzheimer's disease

D the earliest stage of Alzheimer's disease characterized by frequent lapses of memory

---

330 **Researchers at Washington University:**

A have announced a new therapy against Alzheimer's disease

B have made an important step forward in repairing the damages Alzheimer's disease does to the brain

C have provided evidence that MCI is the earliest stage of Alzheimer's disease

D have found out a successful strategy for attacking MCI

---

331 **In the final stage of Alzheimer's disease, brain:**

A shows little activity in areas linking language to memory

B is scattered with neurodegenerative bundles

C produces high concentration of cox-2 inhibitors and vitamin E

D is affected with lapses just in short-term memory

---

332 **Patients with MCI:**

A suffer from frequent lapses in short-term memory

B are adults who generally have difficulties in remembering events of their childhood

C suffer from learning disability

D are subject to stiffness and lack of mobility

---

333 **Through a magnetic scan of the brain:**

A MCI can be verified

B MCI can be treated

C MCI can be stopped

D MCI can be reduced

---

334 **Vitamin E and cox-2 inhibitors are :**

- **A** substances enhancing neuron growth
- **B** substances produced by the brain
- **C** substances which accumulate in the brain
- **D** substances being tested as potential treatments for MCI

---

335 **The hippocampus is:**

- **A** a chemical messenger between nerve cells
- **B** a substance that can reverse the neuron degeneration
- **C** a part of the brain linked to short-term memory
- **D** a part of the brain associated to long-term memory

---

336 **Therapies for treating MCI:**

- **A** have been cautiously adopted by doctors
- **B** will not be available before at least 4 or 5 years
- **C** are decades away
- **D** were developed around the world

Birds fly more efficiently when loaded with food, new research suggests, helping to explain how they can migrate thousands of kilometres without stopping. And a second study has confirmed the century-old suspicion that birds fly in a V formation to save substantial amounts of energy. Ander Kvist at Lund University in Sweden looked at flying efficiency in red knots, small waders that double in size for their annual migration from Siberia to Africa. Fully fed, red knots flying in a wind tunnel for 6-10 hours extracted significantly more power from each unit of food. The research flies in the face of computer predictions that birds are less efficient when full. Understanding the relationship between food and flight might help ecologists to measure the impact of habitat change on migratory birds. It is unclear how birds increase their efficiency when migrating, Kvist says. Puzzingly, they don't adopt the most economical strategy at all times. Kvist speculates that when birds are breeding they may keep reserves of strength for sudden manoeuvres such as speeding up or swerving to avoid a predator. Birds also conserve fuel by flying in V formations. By measuring heart rates, researchers in France now have proof that pelicans use 11-14% less energy flying together, even when they are not perfectly positioned to take advantage of the wake from those in front of them.

337 **Researchers have found out that birds:**

A waste more energy when loaded with food

B need more stopovers when flying loaded with food

C fly more efficiently when loaded with food

D are less efficient when loaded with food

---

338 **Understanding the relationship between food and flight is important to:**

A help ecologists to protect endangered species

B assess the impact of habitat change on migratory birds

C devise special protection schemes for fragile and threatened habitats

D to help ecologists to fight illegal shooting

---

339 **Fully fed red knots flying in a wind tunnel for 6-10 hours:**

A considerably wasted their energy

B were able to obtain more power from each unit of food

C reduced the quantity of energy extracted from each unit of food

D proved unable to increase their energy

---

340 **Measuring pelicans' heart rates, researchers have proved that birds:**

A use less energy when flying together

B reduce their speed when flying in a V formation

C cannot perform sudden manoeuvres

D dissipate their energy when flying in the wake of those ahead of them

---

341 **When breeding, birds:**

A lose part of their efficiency

B always adopt the same economical strategy

C are unable to save energy

D may maintain energy for unexpected manoeuvres

---

342 **Birds fly in a V formation to:**

A increase their speed

B avoid abrupt manoeuvres

C save amounts of energy

D avoid predators

---

343 **Red knots migrating from Siberia to Africa:**

A reduce their size

B become increasingly thinner

C can't extract a significant amount of energy from food

D increase their size twice as much

---

344 **Computer predictions assessing that birds are less efficient when full:**

A have been confirmed by the research on red knots

B have been disproved by the research on red knots

C have been disproved by the research on pelicans

D have confirmed a century-old suspicion

By far the most celebrated of the new cancer fighters are the antiangiogenesis drugs. Like monoclonal antibodies before them, these compounds, which keep tumors from growing their own blood supplies, were briefly touted as magic one-shot cancer cures, although Dr. Judah Folkman, the Harvard researcher who pioneered the field in the 1970s, was always circumspect about making premature claims. Indeed, while the execution has proved difficult, the idea is very simple. Tumors, like any other cell, need oxygen and nutrients to survive. At first they eat their way through healthy tissue, looking for blood vessels to tap for these essentials. Eventually, though, they start to grow their own capillaries and vessels, like oil companies eager to guarantee a steady flow of crude. Folkman's insight was to look for substances that prevent tumors from building those pipelines. This approach worked beautifully on mice. Thus far, only a tiny number of human patients treated with these compounds have seen their tumors shrink or disappear. Researchers are nonetheless encouraged; they have begun to evaluate angiogenesis inhibitors in conjunction with traditional chemotherapy, radiation and surgery. Preliminary trials involving patients with advanced non-small-cell lung cancer and kidney cancer suggest that the combination of angiogenesis with standard therapy improves survival rates beyond those of either treatment alone.

345 **Antiangiogenesis drugs:**

A destroy targeted malignant cells

B repair the genetic mutation which causes malignant cells to multiply

C prevent the growth of new blood vessels to choke off the flow of nutrients

D drive cancerous cells to self-destruction

---

346 **Doctor Judah Folkman:**

A was cautious about the success of antiangiogenesis therapy

B considered antiangiogenesis drugs as a potential magic one-shot treatment

C claimed that antiangiogenesis therapy would definitely beat cancer

D stated that antiangiogenesis drugs would work beautifully on humans

---

347 **Standard therapy includes:**

A monoclonal antibodies

B chemotherapy, radiation and surgery

C antiangiogenesis compounds

D antigrowth drugs

---

348 **Tests on patients with lung cancer and kidney cancer have proved that:**

A standard therapies improve survival rates beyond those of antiangiogenesis drugs

B angiogenesis inhibitors often leave behind some malignat cells

C angiogenesis inhibitors work best in conjunction with traditional treatments

D different therapies give the best results when applied separately

---

349 **Thus far, only few patients treated with antiangiogenesis drugs:**

A have had tumors regressed or disappeared

B have had severe side effects

C have accepted to undergo preliminary trials

D have had a relapse

---

350 **To tap nutrients, malignant cells:**

- **A** break off and migrate through the blood
- **B** eat their way through blood
- **C** promote the formation of new blood vessels
- **D** divide uncontrollably

---

351 **Folkman's idea was:**

- **A** to target cancerous cells with radiation or chemotherapy
- **B** to attack both healthy and cancerous cells
- **C** to activate different pathways of cell destruction
- **D** to find substances to prevent cancerous cells from growing vessels and capillaries

---

352 **Tumors:**

- **A** unlike other cells, feed on oxygen and nutrients
- **B** owe their existence to oxigen and nutrients, like any other cell
- **C** hinder the absorption of oxigen and nutrients, unlike other cells
- **D** secrete oxigen and nutrients, like any other cell

A decade ago, the idea that the planet was warming up as a result of human activity was largely theoretical. We knew that since Industrial Revolution began in the 18th century, factories, automobiles and farms have been loading the atmosphere with heat-trapping gases, including carbon dioxide and methane. But evidence that the climate was actually getting hotter was still murky. Not anymore. Two recent separate studies have linked a significant increase in the temperature of the oceans with global warming caused by human activity. An authoritative report by the U.N.-sponsored Intergovernmental Panel on Climate Change also found that worldwide temperatures have climbed more than 6°C over the past century. The IPCC asserts that this slow warming had an impact on 420 physical processes. Glaciers are disappearing from mountaintops around the globe. Drought is the norm in parts of Asia and Africa. The Arctic permafrost is starting to melt. Mean sea level is rising in consequence of the expansion of sea water and run-off from melted ice sheets. The higher temperatures are evaporating more water, thus leading to increased and more variable precipitations. Plants and animals are shifting their ranges poleward and to higher altitudes. Unfortunately, temperatures may be rising faster and heading higher than anyone expected. By 2100, average temperatures will increase between 1.4°C and 5.8°C, more than 50% higher than predictions of just half a decade ago.

353 **Two separate sudies concluded that:**

- **A** there are still many controversies about the relationship between climate changes and human activity
- **B** our current understanding of global warming is still murky
- **C** climate changes are the direct results of human activity
- **D** the causes of global warming are still uncertain

354 **Worldwide temperatures:**

- **A** are forecast to rise more than 6°C by the end of this century
- **B** have risen by about 6°C over the last century
- **C** have risen 50% higher than estimated a decade ago
- **D** have risen sharply over the last 50 years

355 **The IPCC's report asserts that:**

- **A** the world is unquestionably getting warmer
- **B** the increase of temperatures is still in dispute
- **C** worldwide temperatures have been stable over the past century
- **D** worldwide temperatures have become slightly cooler over the past decade

356 **One of the consequences of global warming is :**

- **A** a growth of the Arctic ice sheet
- **B** an extension of world snow cover
- **C** a widespread retreat of mountain glaciers
- **D** the consolidation of the Artic permafrost

357 **In some parts of Asia and Africa:**

- **A** precipitations have increased and become more variable
- **B** there are prolonged periods of scanty rainfall
- **C** there are high risks of flooding
- **D** water supplies are contaminated by pollutants

358 **Since the Industrial Revolution began:**

- **A** gases like methane and carbon dioxide have been phased out
- **B** methane and carbon dioxide output has grown by 50%
- **C** the concentration of heat-trapping gases has been rising
- **D** the emissions of heat-trapping gases have been cut by half

---

359 **Precipitations are becoming:**

- **A** scarcely sufficient
- **B** scantier and less predictable
- **C** less constant and more abundant
- **D** less abundant and more continuous

---

360 **Plants and animals are shifting their range:**

- **A** to higher altitudes
- **B** to coastal zones
- **C** to tropical areas
- **D** to southern regions

From under the snow-covered lava fields that make up the bulk of the Icelandic land mass, hot water from the island's volcanic underbelly boils and surges to the surface in the form of steaming geysers and hot springs. Hot water is an inexhaustible source of energy for Iceland's inhabitants, who meet 90% ot their needs from geothermal and hydroelectric power. That gives Icelanders a marvelous opportunity: they are trying to eliminate the use of fossil fuels entirely and make Iceland the first country in the world to get all of its energy from clean, renewable sources. The goal of Iceland is to create the first hydrogen economy: its centerpiece will be the hydrogen fuel cell, the versatile little power plant that combines hydrogen with oxygen from the air and gives off only energy and water vapour. The good news is that hydrogen can be derived from water, a virtually unlimited source. The bad news is that electrolysis process used to extract it requires large amounts of energy. Icelandic New Energy launched a four-year program aimed at introducing three buses powered by hydrogen fuel cells into Reykjavik's city transport fleet. The buses are scheduled to go into regular service at the end of next year, spearheading a gradual switch of the nation's vehicles and fishing vessel to hydrogen power. A second program will begin replacing conventional chemical batteries with fuel cells. During a trial period, fuel cells will be distributed for free to see how they perform. If that goes well, the cells will be mass-produced and sold at a price determined by the size of the market.

361 **Hydrogen fuel cells:**

- **A** combine hydrogen with fossil fuels
- **B** provide electricity by combining geothermal and hydroelectric power
- **C** give off oxigen and hydrogen
- **D** provide energy by combining oxigen and hydrogen

362 **90% of Iceland's current energy supply derives from:**

- **A** hydrogen fuel
- **B** hot water
- **C** fossil fuels
- **D** wind energy

363 **Iceland's aim is to:**

- **A** phase out geothermal and hydroelectric power
- **B** replace fossil fuels completely
- **C** convert lava into energy
- **D** get only part of its energy from renewable resources

364 **One of the cons of hydrogen fuel cells is:**

- **A** the high amount of energy required by electrolisis
- **B** the limitedness of water supplies
- **C** the lack of gaseous emissions
- **D** the high quantity of water required

365 **Icelandic New Energy is planning to:**

- **A** introduce gas-electric cars
- **B** synchronize Reykjavik's city transport system
- **C** scrap gradually vehicles and fishing vessels
- **D** introduce hydrogen fuel cell-driven vehicles

366 **Buses powered by hydrogen fuel cells:**

- **A** will pave the way for a gradual reconversion of Iceland's vehicles
- **B** will require a total restructuring of Reykjavic's road system
- **C** will make the price of traditional vehicles drop
- **D** will require a trained staff

---

367 **A second program aims at:**

- **A** switching gradually vehicles to hydrogen power
- **B** introducing buses powered by hydrogen fuel cells
- **C** powering vehicles with batteries
- **D** replacing conventional batteries with fuel cells

---

368 **The prize of fuel cells will depend on :**

- **A** the amounts of water required
- **B** the availability of hydrogen
- **C** the extension of the market
- **D** the quantity of energy used to extract hydrogen from electrolisis

---

At first glance nuclear fission appears to have a firm foothold in the energy supply business, providing OECD countries with a quarter of their electricity needs. Some nations like France or Japan, lacking fossil fuels, rely very heavily on it. Yet almost half of the OECD countries with nuclear capacity have placed restrictions on building new plants, and three - Belgium, Germany and Italy - have resolved to phase out its use completely. Meanwhile a worlwide programme of research on fusion continues. The technical and economic performance of nuclear power continues to improve, and with world climate change at the top of the agenda its lack of gaseous emissions argue in its favour. It is also a miser in terms of resource extraction. To generate one Terawatt-hour of electricity requires 12,000 tonnes of 0.25% uranium ore compared to 300,000 tonnes of anthracite coal, or 120,000 tonnes of natural gas. It is hard to gauge where public opinion lies on the issue of nuclear power. Though opposition groups are vociferous, opinion polls of the general population produce confusing results. Concerns about radiation leaks and the difficulties of waste management have taken their toll, making it very hard to build new plants even in those countries with active nuclear power programmes.

369 **Nuclear fission:**

A has been completely phased out in most OECD countries

B is the main source of electricity for almost half of the OECD countries

C supplies a quarter of OECD countries' electricity needs

D is at present the object of a worldwide programme of research

---

370 **One of the pros of nuclear power is that:**

A it lacks radiation hazards

B plants are quite safe

C it does not produce atmospheric pollutants

D it does not involve problems

---

371 **Countries like Germany and Belgium:**

A have decided to renounce gradually to nuclear energy

B have undertaken research on how to harness nuclear energy

C have resolved to build new power plants

D have implemented safety measures in nuclear power plants

---

372 **To generate electricity, nuclear power plants require:**

A more uranium ore than anthracite coal

B 120,000 tonnes of uranium ore

C relatively little fuel

D more anthracite coal than natural gas

---

373 **The position of public opinion on the issue of nuclear power is:**

A unanimously in favour of it

B unquestionably vociferous

C difficult to estimate

D definitely against it

---

374 **Countries with active nuclear energy programmes:**

A will increase the number of their power plants, notwithstanding the often antagonistic attitude of public opinion

B will enhance the building of new power plants, despite the vociferous opposition groups

C will have more power plants built thanks to the benign view of public opinion

D will hardly have new plants, as there is much concern in public opinion about safety

---

375 **Half of the OECD countries with nuclear capacity:**

A have placed restrictions on programmes of research

B have limited the number of new power plants

C have reduced the reliance on nuclear energy

D have decided to phase out the use of nuclear energy completely

---

376 **Research on nuclear fusion:**

A is organized through an OECD programme

B is progressively being reduced

C has come to a halt

D is in progress all around the world

Today's preferred technology for looking though things is the same one Wilhelm Roentgen used to photograph the bones in his wife's hand in 1895, although the newest X-ray devices are considerably more powerful. Gene Greneker, a radar expert, was fiddling with a radar gun he had developed for monitoring marksmen and archers during the 1996 Atlanta Olympics when he noticed something odd: whenever someone walked on the other side of his laboratory wall, a deflection appeared on the radar screen. One thing led to another, and now Greneker is trying to smoothe out the final kinks in his Radar Flashlight, a device that looks like an oversize hair dryer but can penetrate 20-cm-thick nonmetal doors and walls. When radar waves encounter moving objects, like a hostage taker's nervous pacing or heaving diaphragm, the motions are translated into a bar of LED lights in which the height of the bar corresponds with the amount of movement in the room. In more sophisticated radar detectors, like the RadarVision2000 prototype made by Time Domain Corporation, the crude LED display is replaced by dancing circles and colored blobs that show both the location and trajectory of moving objects on the other side of an opaque barrier.

377 **Radar Flashlight is a device which can:**

- **A** reveal what might be hidden behind metal barriers provided it is not moving
- **B** detect objects hidden behind metal barriers
- **C** use 20-cm-length radar waves
- **D** see through nonmetal doors and walls

378 **Gene Greneker had developed a radar gun to:**

- **A** check archery competitions during the 1996 Atlanta Olympics
- **B** prevent terrorist attacks during the 1996 Atlanta Olympics
- **C** survey the playing fields during the 1996 Atlanta Olympics
- **D** check people passing through gates during the 1996 Atlanta Olympics

379 **When people walked on the other side of his laboratory, Gene Greneker noticed that:**

- **A** the radar screen went out
- **B** the radar screen died out
- **C** the radar screen broke down
- **D** the beams of the radar gun changed direction

380 **The bar of LED light translates:**

- **A** the amount of movement behind a wall
- **B** the heigth of a wall
- **C** the thickness of a wall
- **D** the opaqueness of a wall

381 **Radar Flashlight looks like:**

- **A** a 20-cm-thick hair dryer
- **B** a bulky hair dryer
- **C** a travel hair dryer
- **D** a miniature hair dryer

382 **Gene Greneker:**

A has so far optimized Radar Flashlight

B is perfectioning Radar Flashlight

C has licensed Radar Flashlight

D has given up the idea of Radar Flashlight

---

383 **Today's X-ray devices:**

A are more or less the same as those used by Wilhelm Roentgen in 1895

B are considerably more efficient than those used by Wilhelm Roentgen in 1895

C needs more powerful beams than those used more than one century ago

D use a different kind of beams than those used more than one century ago

---

384 **In the RadarVision 2000 prototype, the location and trajectory of moving objects are represented by:**

A a crude LED display

B circles and blobs

C nervous pacing or heaving diaphragms

D colored numbers and dancing letters

A week of startling economic news began with the year's second profit warning from Cisco Systems, the company that, beyond any other, epitomized the supercharged American economy of the late 1990s. It didn't matter that few seemed to have any clear sense of what Cisco actually made. But the company has been a symbol of an American economy that, fuelled by unprecedented levels of capital investment in technology, was seeing productivity gains on a scale not witnessed since the golden years after World War II. Cisco became a must-have stock, and as the company gobbled up scores of start-ups and expanded around the globe, its future seemed golden. Perhaps it still is. But after the markets closed on April 16, the company announced dramatically lower revenue for the first quarter and said it would cut its workforce by 8,500. The next day Cisco's stock opened at $15.90, down from a high of $82 a little more than a year ago. The unfolding American high-tech disaster, which first hit the dotcoms, then the portals and Internet consultancies, then PC makers and hardware suppliers – had arrived with a vengeance at the star of the New Economy. It soon became clearer that the technology downturn was not limited to the U.S., as Dutch electronics giant Philips announced 7,000 job cuts. Analysts will debate for years why the global high-tech industry got its projections of likely sales so woefully askew, leaving firm after firm with excess capacity and massive stocks of unsold inventory. The more pressing question is whether the ills of Cisco, Philips and the like are the first sign of a genuine global recession. With the economies of the U.S. and Japan flatlining, it's easy to see why many fear the worst.

385 **The American economy of the late 1990s:**

- **A** got worse because of the New Economy
- **B** witnessed a level of growth never experienced before
- **C** saw a higher productivity than that recorded in the years after World War II
- **D** saw the same high productivity as that recorded in the years after World War II

386 **Cisco Systems can be said to:**

- **A** represent the American economy of the late 1990s
- **B** take in the American economy of the late 1990s
- **C** endanger today's American economy
- **D** hinder today's American economy

387 **Cisco became a must-have stock also because:**

- **A** the start-ups of the market didn't touch it
- **B** it represented an economy fuelled by huge investments
- **C** a foreign capital investment favoured its productivity
- **D** only few had any clear sense of what it actually made

388 **After the close of the Exchange on April 16 Cisco announced:**

- **A** it would not recruit new staff
- **B** thousands of layoffs
- **C** an improvement of the productivity and a new phase of recruitment
- **D** greater care was needed to make up for the low revenue suffered

389 **The American high-tech disaster:**

- **A** didn't hit Cisco Systems
- **B** is slipping back at the moment
- **C** hit only some unsteady companies
- **D** comes within the international technology downturn

390 **Firms have been left with excess capacity and massive stocks of unsold inventory because:**

A they have shown great pessimism about their future sales

B the process of reduction hasn't started yet

C there have been excessively optimistic projections of future sales

D they couldn't solve their clash conflicts of interests

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391 **A global recession may be:**

A avoided since the economies of the U.S. and Japan are going straight to their goals

B fuelled by unprecedented levels of capital investments in technology

C under way

D the result of the ills of Cisco, Philips and the like

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392 **This year Cisco's stock is:**

A making up for its previous downturn

B dizzily going up

C in a stalemate

D suffering a very high loss

Plowing through church records and birth rolls will only get you so far in reconstructing your family tree. For the really deep stuff, you must look to your genes, and Bryan Sykes, professor of human genetics at the university of Oxford and his company, Oxford Ancestors, can identify portions of your DNA that chronicle an unbroken chain of descent back to the Stone Age. All it takes is a swab from the inside of your cheek and $180. The DNA in the mitochondria, cell organelles whose genetic make-up is determined by the mother alone, of all native Europeans except the Sami people of Northern Scandinavia reveal descent from one of what Sykes calls 'The Seven Daughters of Eve'. He contends that these seven ancient matriarchs migrated to Europe from Africa via the Middle East or Asia as long as 50,000 years ago. He has delineated rough population histories for the particular mutation patterns that define and date each of those ancestral groups. Descendants of these seven lineages show up in all European ethnic groups, so correlating them to our modern notions of ethnicity is pointless. There is no evidence that differences in mitochondrial DNA track with any other inherited traits. Besides, there is the small matter of men, whose genetic contributions don't show up in mitochondrial DNA. In the coming months, Sykes expects to start offering codification of the prehistoric ancestral information imbedded in the Y chromosome. Other recent research suggests that there are 10 patrilineal lineages in Europe; Sykes says there are more, and he is likely to create names and histories for them as well.

393 **Portions of DNA can be:**

- **A** used to go back to one's prehistoric ancestors
- **B** identified only in organelles belonging to the mithochondria
- **C** used just to reconstruct the family genealogical tree
- **D** located through the feminine genes

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394 **'The Seven Daughters of Eve' are:**

- **A** the African women most Europeans descend from
- **B** the descendants of Eve
- **C** the ancestresses of the Sami people of Northern Scandinavia
- **D** African-Asian women that moved to Europe about 50,000 years ago

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395 **Bryan Sykes has sketched out:**

- **A** the most important European ethnic groups
- **B** the histories of ancestral groups back to the Stone Age
- **C** the modern notions of ethnicity
- **D** the mutation patterns of all European ethnic groups

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396 **Differences in the mitochondrial DNA:**

- **A** show up when there is the men's genetic contribution
- **B** are undoubtedly linked to other inherited traits
- **C** are never present when there are both men's and women's contributions
- **D** cannot be said to be related to other inherited traits as it isn't demonstrable

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397 **Last researches suggest that:**

- **A** it is almost impossible to decode information imbedded in the Y chromosome
- **B** even though there are some patrilineal lineages in Europe it is impossible to determine their traits
- **C** the codification of the Y chromosome information makes it possible to establish 10 patrilineal lineages in Europe
- **D** only matrilineal lineages can be studied

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398 **The descendants of 'The Seven Daughters of Eve':**

- **A** can be located in particular European areas which are examined by modern ethnicity
- **B** don't appear in Europe but only in Africa and Asia
- **C** are present in every European ethnic group, so modern ethnicity has nothing to do with them
- **D** can be better identified by modern ethnicity since they belong to some important European ethnic groups

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399 **If you want to reconstruct your family tree back to some generations you have to:**

- **A** look through church records and birth rolls
- **B** look to your genes
- **C** pay $180 and supply biologists with a swab from the inside of our cheek
- **D** ask professor Bryan Sykes if he can identify portions of our DNA

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400 **The mitochondria:**

- **A** is another name of the DNA
- **B** is a stock of cells present in all native Europeans
- **C** are cell structures whose genes come from the mother alone
- **D** refer to a group of genes existing in women alone
