黄金 29 篇真题經典難句收集

1. Only the last of these was suited at all to the continuous operating of machines, and although waterpower abounded in Lancashire and Scotland and ran grain mills as well as textile mills, it had one great disadvantage：Streams flowed where nature intended them to and water-driven factories had to be located on their banks whether or not the location was desirable for other reasons.

2. Early in the century, a pump had come into use in which expanding steam raised a piston(活塞) in a cylinder(汽缸)，and atmospheric pressure brought it down again when the steam condensed inside the cylinder to form a vacuum.

3. The final step came when steam was introduced into the cylinder to drive the piston backward as well as forward thereby increasing the speed of the engine and cutting its fuel consumption.

4. Coal gas rivaled smoky oil lamps and flickering candles, and early in the new century, well—to—do Londoners grow accustomed to gaslights houses and even streets.

5. Iron manufacturers which had starved for fuel while depending on charcoal also benefited from ever-increasing supplies of coal; blast furnaces with steam-powered bellows turned out more iron and steel for the new machinery.

6. At the same time, operators of the first printing presses run by steam rather than by hand found it possible to produce a thousand pages in an hour rather than thirty.

7. In some industrial regions, heavily laden wagons，with flanged wheels，were being hauled by horses along metal rails; and the stationary steam engine was puffing in the factory and mine.

8. Another generation passed before Inventors succeeded in combining these ingredients by putting the engine on wheels and the wheels on the rails, so as to provide a machine to take the place of the horse.

9. When he grew older William Smith taught himself surveying from books he bought with his small savings and at the age of eighteen he was apprenticed to a surveyor of the local parish.

10. The companies building the canals to transport coal needed surveyors to help them find the coal deposits worth mining as well as to determine the best courses for the canals.

11. He later worked on similar jobs across the length and breadth of England all the while studying the newly revealed strata and collecting all the fossils he could find.

12. But as more and more accumulations of strata were cataloged in more and more places, it became clear that the sequences of rocks sometimes differed from region to region and that no rock type was ever going to become a reliable time marker throughout the world.

13. Quartz is quartz—a silicon ion surrounded by four oxygen ions— there's no difference at all between two-million-year-old Pleistocene quartz and Cambrian quartz created over 500 million years ago.

14. As he collected fossils from strata throughout England, Smith began to see that the fossils told a different story from the rocks particularly in the younger strata the rocks were often so similar that he had trouble distinguishing the strata, but he never had trouble telling the fossils apart.

15. While rock between two consistent strata might in one place be shale and in sandstone, the fossils in that shale or sandstone were always the same.

16. Some fossils endured through so many millions of years that they appear in many strata, but others occur only in a few strata, and a few species had their births and extinctions within one particular stratum.

17. By following the fossils, Smith was able to put all the strata of England's earth into relative temporal sequence.

18. Limestone may be found in the Cambrian or-300 million years later-in the Jurassic strata but a trilobite—the ubiquitous marine arthropod that had its birth in the Cambrian—will never be found in Jurassic strata, nor a dinosaur in the Cambrian.

19. The sheer passage of time does not account for it; adults have excellent recognition of pictures of people who attended high school with them 35 years earlier.

20. Children two and a half to three years old remember experiences that occurred in their first year, and eleven month older than them can remember some events a year later.

21. Nor does the hypothesis that infantile amnesia reflects repression- or holding back- of sexually charged episodes explain the phenomenon.

22. Maturation of the frontal lobes of the brain continues throughout early childhood, and this part of the brain may be critical for remembering particular episodes in ways that can be retrieved later.

23. Consistent with this view parents and children increasingly engage in discussions of past events when children are about three years old.

24. The better able the person is to reconstruct the perspective from which the material was encoded, the more likely that recall will be successful.

25. The world looks very different to a person whose head is only two or three feet above the ground than to one whose head is five or six feet above it, 0lder children and adults often try to retrieve the names of things they saw, but infants would not have encoded the information verbally.

26. Conversely，improved encoding of what they hear may help them better understand and remember stories and thus make the stories more useful for remembering future events.

27. Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

28. Pakicetus was found embedded in rocks formed from river deposits that were 52 million years old.

29. The skull is cetacean-like but its jawbones lack the enlarged space that is filled with fat or oil and used for receiving underwater sound in modern whales.

30. Several skeletons of another early whale, Basilosaurus, were found in sediments left by the Tethys Sea and now exposed in the Sahara desert.

31. The expansion of desert like conditions into areas where they did not previously exist is called desertification.

32. In some cases the loose soil is blown completely away, leaving a stony surface.

33. Desertification is accomplished primarily through the loss of stabilizing natural vegetation and the subsequent accelerated erosion of the soil by wind and water.

34. The impact of raindrops on the loose soil tends to transfer fine clay particles into the tiniest soil spaces, sealing them and producing a surface that allows very little water penetration.

35. The gradual drying of the soil caused by its diminished ability to absorb water results in the further loss of vegetation, so that a cycle of progressive surface deterioration is established.

36. In some regions, the increase in desert areas is occurring largely as the result of a trend toward drier climatic conditions.

37. The process may be accelerated in subsequent decades if global warming resulting from air pollution seriously increases.

38. The semiarid lands bordering the deserts exist in a delicate ecological balance and are limited in their potential to adjust to increased environmental pressures.

39. During the dry periods that are common phenomena along the desert margins, though, the pressure on the land is often far in excess of its diminished capacity, and desertification results.

40. Since the raising of most crops necessitates the prior removal of the natural vegetation, crop failures leave extensive tracts of land devoid of a plant cover and susceptible to wind and water erosion.

41. The consequences of an excessive number of livestock grazing in an area are the reduction of the vegetation cover and the trampling and pulverization of the soil.

42. The increased pressures of expanding populations have led to the removal of woody plants so that many cities and towns are surrounded by large areas completely lacking in trees and shrubs.

43. The increasing use of dried animal waste as a substitute fuel has also hurt the soil because this valuable soil conditioner and source of plant nutrients is no longer being returned to the land.

44. The water evaporates and the salts are left behind, creating a white crustal layer that prevents air and water from reaching the underlying soil.

45. The extreme seriousness of desertification results from the vast areas of land and the tremendous numbers of people affected, as well as from the great difficulty of reversing or even slowing the process.

46. In areas where considerable soil still remains, though, a rigorously enforced program of land protection and cover-crop planting may make it possible to reverse the present deterioration of the surface.

47. The cinema did not emerge as a form of mass consumption until its technology evolved from the initial "peepshow" format to the point where images were projected on a screen in a darkened theater.

48. For the price of 25 cents (or 5 cents per machine), customers moved from machine to machine to watch five different films (or, in the case of famous prizefights, successive rounds of a single fight).

49. In the phonograph parlors, customers listened to recordings through individual ear tubes, moving from one machine to the next to hear different recorded speeches or pieces of music.

50. He refused to develop projection technology, reasoning that if he made and sold projectors, then exhibitors would purchase only one machine-a projector-from him instead of several.

51. Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission.

52. But the movies differed significantly from these other forms of entertainment, which depended on either live performance or (in the case of the slide-and-lantern shows) the active involvement of a master of ceremonies who assembled the final program.

53. Although early exhibitors regularly accompanied movies with live acts, the substance of the movies themselves is mass-produced, prerecorded material that can easily be reproduced by theaters with little or no active participation by the exhibitor.

54. Even though early exhibitors shaped their film programs by mixing films and other entertainments together in whichever way they thought would be most attractive to audiences or by accompanying them with lectures, their creative control remained limited.

55. What audiences came to see was the technological marvel of the movies; the lifelike reproduction of the commonplace motion of trains, of waves striking the shore, and of people walking in the street; and the magic made possible by trick photography and the manipulation of the camera.

56. With the advent of projection, the viewer's relationship with the image was no longer private, as it had been with earlier peepshow devices such as the Kinetoscope and the Mutoscope, which was a similar machine that reproduced motion by means of successive images on individual photographic cards instead of on strips of celluloid.

57. At the same time, the image that the spectator looked at expanded from the minuscule peepshow dimensions of 1 or 2 inches (in height) to the life-size proportions of 6 or 9 feet.

58. Those individuals who possess characteristics that provide them with an advantage in the struggle for existence are more likely to survive and contribute their genes to the next generation.

59. Because aggressive individuals are more likely to survive and reproduce, whatever genes are linked to aggressive behavior are more likely to be transmitted to subsequent generations.

60. One is that people's capacity to outwit other species, not their aggressiveness, appears to be the dominant factor in human survival.

61. Another is that there is too much variation among people to believe that they are dominated by, or at the mercy of, aggressive impulses.

62. For example, people who believe that aggression is necessary and justified-as during wartime-are likely to act aggressively, whereas people who believe that a particular war or act of aggression is unjust, or who think that aggression is never justified, are less likely to behave aggressively.

63. People decide whether they will act aggressively or not on the basis of factors such as their experiences with aggression and their interpretation of other people's motives.

64. Apprentices were considered part of the family, and masters were responsible not only for teaching their apprentices a trade but also for providing them some education and for supervising their moral behavior.

65. Also, skilled artisans did not work by the clock, at a steady pace, but rather in bursts of intense labor alternating with more leisurely time.

66. Goods produced by factories were not as finished or elegant as those done by hand, and pride in craftsmanship gave way to the pressure to increase rates of productivity.

67. Factory life necessitated a more regimented schedule, where work began at the sound of a bell and workers kept machines going at a constant pace.

68. Industrialization not only produced a fundamental change in the way work was organized; it transformed the very nature of work.

69. The labor movement gathered some momentum in the decade before the Panic of 1837, but in the depression that followed, labor's strength collapsed.

70. More than a decade of agitation did finally bring a workday shortened to 10 hours to most industries by the 1850’s, and the courts also recognized workers' right to strike, but these gains had little immediate impact.

71. Interestingly enough, several of these hydrodynamic adaptations resemble features designed to improve the aerodynamics of high-speed aircraft.

72. They are also covered with a slick, transparent lid that reduces drag.

73. When not in use, the fins are tucked into special grooves or depressions so that they lie flush with the body and do not break up its smooth contours.

74. The keels, finlets, and corselet help direct the flow of water over the body surface in such as way as to reduce resistance (see the figure).

75. One potential problem is that opening the mouth to breathe detracts from the streamlining of these fishes and tends to slow them down.

76. Their high, narrow tails with swept-back tips are almost perfectly adapted to provide propulsion with the least possible effort.

77. They can glide past eddies that would slow them down and then gain extra thrust by "pushing off" the eddies.

78. They have evolved special "heaters" of modified muscle tissue that warm the eyes and brain, maintaining peak performance of these critical organs.

79. Although we now tend to refer to the various crafts according to the materials used to construct them-clay, glass, wood, fiber, and metal-it was once common to think of crafts in terms of function, which led to their being known as the "applied arts."

80. The applied arts are thus bound by the laws of physics, which pertain to both the materials used in their making and the substances and things to be contained, supported, and sheltered.

81. Since the laws of physics, not some arbitrary decision, have determined the general form of applied-art objects, they follow basic patterns, so much so that functional forms can vary only within certain limits.

82. What varies is not the basic form but the incidental details that do not obstruct the object's primary function.

83. These are problems that must be overcome by the artist because they tend to intrude upon his or her conception of the work.

84. In other words, the demands of the laws of physics, not the sculptor's aesthetic intentions, placed the ball there.

85. That this device was a necessary structural compromise is clear from the fact that the cannonball quickly disappeared when sculptors learned how to strengthen the internal structure of a statue with iron braces (iron being much stronger than bronze).

86. Even though the fine arts in the twentieth century often treat materials in new ways, the basic difference in attitude of artists in relation to their materials in the fine arts and the applied arts remains relatively constant.

87. It would therefore not be too great an exaggeration to say that practitioners of the fine arts work to overcome the limitations of their materials, whereas those engaged in the applied arts work in concert with their materials.

88. This "paper money aristocracy" of bankers and investors manipulated the banking system for their own profit, Democrats claimed, and sapped the nation's virtue by encouraging speculation and the desire for sudden, unearned wealth.

89. They wanted the wealth that the market offered without the competitive, changing society; the complex dealing; the dominance of urban centers; and the loss of independence that came with it.

90. Nor did the Whigs envision any conflict in society between farmers and workers on the one hand and business people and bankers on the other.

91. Religion and politics, they believed, should be kept clearly separate, and they generally opposed humanitarian legislation.

92. Whigs appealed to planters who needed credit to finance their cotton and rice trade in the world market, to farmers who were eager to sell their surpluses, and to workers who wished to improve themselves.

93. Neither party could win an election by appealing exclusively to the rich or the poor.

94. Democrats attracted farmers isolated from the market or uncomfortable with it, workers alienated from the emerging industrial system, and rising entrepreneurs who wanted to break monopolies and open the economy to newcomers like themselves.

95. The Whigs were strongest in the towns, cities, and those rural areas that were fully integrated into the market economy, whereas Democrats dominated areas of semi-subsistence farming that were more isolated and languishing economically.

96. The Fore also displayed familiar facial expressions when asked how they would respond if they were the characters in stories that called for basic emotional responses.

97. Ekman and his colleagues more recently obtained similar results in a study of ten cultures in which participants were permitted to report that multiple emotions were shown by facial expressions.

98. The facial-feedback hypothesis argues, however, that the causal relationship between emotions and facial expressions can also work in the opposite direction.

99. "The free expression by outward signs of an emotion intensifies it. On the other hand, the repression, as far as possible, of all outward signs softens our emotions."

100. Causing participants in experiments to smile, for example, leads them to report more positive feelings and to rate cartoons (humorous drawings of people or situations) as being more humorous.

101. Self-perception of heightened arousal then leads to heightened emotional activity. Other links may involve changes in brain temperature and the release of neurotransmitters (substances that transmit nerve impulses.)

102. Ekman has found that the so-called Duchenne smile, which is characterized by ''crow's feet" wrinkles around the eyes and a subtle drop in the eye cover fold so that the skin above the eye moves down slightly toward the eyeball, can lead to pleasant feelings

103. Ekman's observation may be relevant to the British expression "keep a stiff upper lip" as a recommendation for handling stress. It might be that a "stiff" lip suppresses emotional response -- as long as the lip is not quivering with fear or tension.

104. Hills and mountains are often regarded as the epitome of permanence, successfully resisting the destructive forces of nature, but in fact they tend to be relatively short-lived in geological terms.

105. Lower mountains tend to be older, and are often the eroded relics of much higher mountain chains.

106. Some mountains were formed as a result of these plates crashing into each other and forcing up the rock at the plate margins.

107. Other mountains may be raised by earthquakes, which fracture the Earth's crust and can displace enough rock to produce Block Mountains.

108. The exposed rocks are attacked by the various weather processes and gradually broken down into fragments, which are then carried away and later deposited as sediments.

109. Rain washes away loose soil and penetrates cracks in the rocks.

110. Glaciers may form in permanently cold areas, and these slowly moving masses of ice cut out valleys, carrying with them huge quantities of eroded rock debris.

111. By far the most abundant type of groundwater is meteoric water; this is the groundwater that circulates as part of the water cycle.

112. At first thought it seems incredible that there can be enough space in the “solid” ground underfoot to hold all this water.

113. The commonest spaces are those among the particles—sand grains and tiny pebbles—of loose, unconsolidated sand and gravel.

114. Beds of this material, out of sight beneath the soil, are common.

115. They are found wherever fast rivers carrying loads of coarse sediment once flowed.

116. The water was always laden with pebbles, gravel, and sand, known as glacial outwash, that was deposited as the flow slowed down.

117. The same thing happens to this day, though on a smaller scale, wherever a sediment-laden river or stream emerges from a mountain valley onto relatively flat land, dropping its load as the current slows: the water usually spreads out fanwise, depositing the sediment in the form of a smooth, fan-shaped slope.

118. Sediments are also dropped where a river slows on entering a lake or the sea, the deposited sediments are on a lake floor or the seafloor at first, but will be located inland at some future date, when the sea level falls or the land rises; such beds are sometimes thousands of meters thick.

119. In lowland country almost any spot on the ground may overlie what was once the bed of a river that has since become buried by soil; if they are now below the water's upper surface (the water table), the gravels and sands of the former riverbed, and its sandbars, will be saturated with groundwater.

120. This is because the gaps among the original grains are often not totally plugged with cementing chemicals; also, parts of the original grains may become dissolved by percolating groundwater, either while consolidation is taking place or at any time afterwards.

121. But note that porosity is not the same as permeability, which measures the ease with which water can flow through a material; this depends on the sizes of the individual cavities and the crevices linking them.

122. Much of the water in a sample of water-saturated sediment or rock will drain from it if the sample is put in a suitable dry place.

123. It is held there by the force of surface tension without which water would drain instantly from any wet surface, leaving it totally dry.

124. The total volume of water in the saturated sample must therefore be thought of as consisting of water that can, and water that cannot, drain away.

125. If the pores are large, the water in them will exist as drops too heavy for surface tension to hold, and it will drain away; but if the pores are small enough, the water in them will exist as thin films, too light to overcome the force of surface tension holding them in place; then the water will be firmly held.

126. The most widely accepted theory, championed by anthropologists in the late nineteenth and early twentieth century, envisions theater as emerging out of myth and ritual.

127. Having little understanding of natural causes, it attributes both desirable and undesirable occurrences to supernatural or magical forces, and it searches for means to win the favor of these forces.

128. Perceiving an apparent connection between certain actions performed by the group and the result it desires, the group repeats, refines and formalizes those actions into fixed ceremonies, or rituals.

129. But the myths that have grown up around the rites may continue as part of the group's oral tradition and may even come to be acted out under conditions divorced from these rites.

130. When this occurs, the first step has been taken toward theater as an autonomous activity, and thereafter entertainment and aesthetic values may gradually replace the former mystical and socially efficacious concerns.

131. Although origin in ritual has long been the most popular, it is by no means the only theory about how the theater came into being.

132. Thus, the recalling of an event (a hunt, battle, or other feat) is elaborated through the narrator's pantomime and impersonation and eventually through each role being assumed by a different person.

133. A closely related theory sees theater as evolving out of dances that are primarily pantomimic, rhythmical or gymnastic, or from imitations of animal noises and sounds.

134. Admiration for the performer's skill, virtuosity, and grace are seen as motivation for elaborating the activities into fully realized theatrical performances.

135. For example, one sign of this condition is the appearance of the comic vision, since comedy requires sufficient detachment to view some deviations from social norms as ridiculous rather than as serious threats to the welfare of the entire group.

136. For example, some early societies ceased to consider certain rites essential to their well-being and abandoned them, nevertheless, they retained as parts of their oral tradition the myths that had grown up around the rites and admired them for their artistic qualities rather than for their religious usefulness.

137. Within a vertical distance of just a few tens of meters, trees disappear as a life-form and are replaced by low shrubs, herbs, and grasses.

138. In many semiarid areas there is also a lower timberline where the forest passes into steppe or desert at its lower edge, usually because of a lack of moisture.

139. Timberline trees are normally evergreens, suggesting that these have some advantage over deciduous trees (those that lose their leaves) in the extreme environments of the upper timberline.

140. This is particularly true for trees in the middle and upper latitudes, which tend to attain greater heights on ridges, whereas in the tropics the trees reach their greater heights in the valleys.

141. Late-lying snow reduces the effective growing season to the point where seedlings cannot establish themselves.

142. Wind velocity also increases with altitude and may cause serious stress for trees, as is made evident by the deformed shapes at high altitudes.

143. Some scientists have proposed that the presence of increasing levels of ultraviolet light with elevation may play a role, while browsing and grazing animals like the ibex may be another contributing factor.

144. Immediately adjacent to the timberline, the tundra consists of a fairly complete cover of low-lying shrubs, herbs, and grasses, while higher up the number and diversity of species decrease until there is much bare ground with occasional mosses and lichens and some prostrate cushion plants.

145. At this great height, rocks, warmed by the sun, melt small snowdrifts

146. This enables them to avoid the worst rigors of high winds and permits them to make use of the higher temperatures immediately adjacent to the ground surface.

147. The low growth form can also permit the plants to take advantage of the insulation provided by a winter snow cover.

148. The client who pays for the building and defines its function is an important member of the architectural team.

149. The mediocre design of many contemporary buildings can be traced to both clients and architects.

150. In order for the structure to achieve the size and strength necessary to meet its purpose, architecture employs methods of support that, because they are based on physical laws, have changed little since people first discovered them-even while building materials have changed dramatically.

151. Enormous changes in materials and techniques of construction within the last few generations have made it possible to enclose space with much greater ease and speed and with a minimum of material.

152. Progress in this area can be measured by the difference in weight between buildings built now and those of comparable size built one hundred ago.

153. In the past, whole cities grew from the arduous task of cutting and piling stone upon.

154. The doorways and windows are made possible by placing over the open spaces thick stone beams that support the weight from above.

155. A structural invention had to be made before the physical limitations of stone could be overcome and new architectural forms could be created.

156. It works in compression to divert the weight above it out to the sides, where the weight is borne by the vertical elements on either side of the arch.

157. The doorways and windows are made possible by placing over the open spaces thick stone beams that support the weight from above.

158. This region has a semiarid climate, and for 50 years after its settlement, it supported a low-intensity agricultural economy of cattle ranching and wheat farming.

159. In the early twentieth century, however, it was discovered that much of the High Plains was underlain by a huge aquifer (a rock layer containing large quantities of groundwater).

160. The Ogallala aquifer is a sandstone formation that underlies some 583,000 square kilometers of land extending from northwestern Texas to southern South Dakota.

161. Modern irrigation devices, each capable of spraying 4.5 million liters of water a day, have produced a landscape dominated by geometric patterns of circular green islands of crops.

162. This unprecedented development of a finite groundwater resource with an almost negligible natural recharge rate—that is, virtually no natural water source to replenish the water supply—has caused water tables in the region to fall drastically.

163. In places, the water table is declining at a rate of a meter a year, necessitating the periodic deepening of wells and the use of ever-more-powerful pumps

164. It is projected that the remaining Ogallala water will, by the year 2030, support only 35 to 40 percent of the irrigated acreage in Texas that is supported in 1980.

165. Other, however, have adopted the philosophy that it is best to use the water while it is still economically profitable to do so and to concentrate on high-value crops such as cotton.

166. The incentive of the farmers who wish to conserve water is reduced by their knowledge that many of their neighbors are profiting by using great amounts of water, and in the process are drawing down the entire region's water supplies.

167. Unfortunately, the cost of water obtained through any of these schemes would increase pumping costs at least tenfold, making the cost of irrigated agricultural products from the region uncompetitive on the national and international markets.

168. Somewhat more promising have been recent experiments for releasing capillary water (water in the soil) above the water table by injecting compressed air into the ground.

169. Whatever the final answer to the water crisis may be, it is evident that within the High Plains, irrigation water will never again be the abundant, inexpensive resource it was during the agricultural boom years of the mid-twentieth century.

170. Support for this idea came from the observation that long-lasting climax communities usually have more complex food webs and more species diversity than pioneer communities.

171. Alternatively, stability can be defined as the speed with which an ecosystem returns to a particular form following a major disturbance, such as a fire.

172. Ecologists are especially interested to know what factors contribute to the resilience of communities because climax communities all over the world are being severely damaged or destroyed by human activities.

173. The destruction caused by the volcanic explosion of Mount St. Helens, in the northwestern United States, for example, pales in comparison to the destruction caused by humans.

174. Many ecologists now think that the relative long-term stability of climax communities comes not from diversity but from the “patchiness” of the environment, an environment that varies from place to place supports more kinds of organisms than an environment that is uniform.

175. A local population that goes extinct is quickly replaced by immigrants from an adjacent community.

176. Even if the new population is of a different species, it can approximately fill the niche vacated by the extinct population and keep the food web intact.

177. Their seed heads raised just high enough above the ground to catch the wind, the plants are no bigger than they need be, their stems are hollow, and all the rigidity comes from their water content.

178. A new plant will spring up wherever a seed falls on a suitable soil surface, but because they do not build big bodies, they cannot compete with other plants for space, water, or sunlight.

179. These plants are termed opportunists because they rely on their seeds’ falling into settings where competing plants have been removed by natural processes, such as along an eroding riverbank, on landslips, or where a tree falls and creates a gap in the forest canopy.

180. Human landscapes of lawns, fields, or flowerbeds provide settings with bare soil and a lack of competitors that are perfect habitats for colonization by opportunists.

181. If their population is tracked through time, it will be seen to be particularly unstable—soaring and plummeting in irregular cycles.

182. A massive oak claims its ground for 200 years or more, outcompeting all other would-be canopy trees by casting a dense shade and drawing up any free water in the soil.

183. Although oaks produce thousands of acorns, the investment in a crop of acorns is small compared with the energy spent on building leaves, trunk, and roots.

184. A population of oaks is likely to be relatively stable through time, and its survival is likely to depend more on its ability to withstand the pressures of competition or predation than on its ability to take advantage of chance events

185. It should be noted, however, that the pure opportunist or pure competitor is rare in nature, as most species fall between the extremes of a continuum, exhibiting a blend of some opportunistic and some competitive characteristics.

186. Some follow each other in solemn parades, but others swirl about, sideways and upside down.

187. The animals are bulls, wild horses, reindeer, bison, and mammoths outlined with charcoal and painted mostly in reds, yellow, and browns.

188. It is possible that tubes made from animal bones were used for spraying because hollow bones, some stained with pigment, have been found nearby.

189. Because some paintings were made directly over others, obliterating them, it is probable that a painting's value ended with the migration it pictured.

190. Unfortunately, this explanation fails to explain the hidden locations, unless the migrations were celebrated with secret ceremonies.

191. This opinion holds that the pictures and whatever ceremony they accompanied were an ancient method of psychologically motivating hunters.

192. A third opinion takes psychological motivation much further into the realm of tribal ceremonies and mystery: the belief that certain animals assumed mythical significance as ancient ancestors or protectors of a given tribe or clan.

193. Two types of images substantiate this theory: the strange, indecipherable geometric shapes that appear near some animals, and the few drawings of men.

194. Wherever men appear they are crudely drawn and their bodies are elongated and rigid.

195. Advocates for this opinion point to reports from people who have experienced a trance state, a highly suggestive state of low consciousness between waking and sleeping.

196. Advocates also point to people who believe that the forces of nature are inhabited by spirits, particularly shamans* who believe that an animal's spirit and energy is transferred to them while in a trance.

197. In 1994 there were nearly 20,000 wind turbines worldwide, most grouped in clusters called wind farms that collectively produced 3,000 megawatts of electricity.

198. Large wind farms can be built in six months to a year and then easily expanded as needed.

199. With a moderate to fairly high net energy yield, these systems emit no heat-trapping carbon dioxide or other air pollutants and need no water for cooling; manufacturing them produces little water pollution.

200. With new technological advances and mass production, projected cost declines should make wind power one of the world's cheapest ways to produce electricity.

201. In the long run, electricity from large wind farms in remote areas might be used to make hydrogen gas from water during periods when there is less than peak demand for electricity.

202. Backup power could also be provided by linking wind farms with a solar cell, with conventional or pumped-storage hydropower, or with efficient natural-gas-burning turbines.

203. Large wind farms might also interfere with the flight patterns of migratory birds in certain areas, and they have killed large birds of prey (especially hawks, falcons, and eagles) that prefer to hunt along the same ridge lines that are ideal for wind turbines.

204. The killing of birds of prey by wind turbines has pitted environmentalists who champion wildlife protection against environmentalists who promote renewable wind energy.

205. Some analysts also contend that the number of birds killed by wind turbines is dwarfed by birds killed by other human-related sources and by the potential loss of entire bird species from possible global warming.

206. United States an estimated 97 million birds are killed each year when they collide with buildings made of plate glass, 57 million are killed on highways each year; at least 3.8 million die annually from pollution and poisoning; and millions of birds are electrocuted each year by transmission and distribution lines carrying power produced by nuclear and coal power plants.

207. The other species, the Columbian white-tailed deer, in earlier times was common in the open prairie country, it is now restricted to the low, marshy islands and flood plains along the lower Columbia River.

208. Where the forest inhibits the growth of grass and other meadow plants, the black-tailed deer browses on huckleberry, salal, dogwood, and almost any other shrub or herb.

209. Deer may move from high-elevation browse areas in summer down to the lowland areas in late fall.

210. Even with snow on the ground, the high bushy understory is exposed; also snow and wind bring down leafy branches of cedar, hemlock, red alder, and other arboreal fodder.

211. The early explorers and settlers told of abundant deer in the early 1800s and yet almost in the same breath bemoaned (complain) the lack of this succulent (delicious) game animal.

212. Lewis and Clark and had experienced great difficulty finding game west of the Rockies and not until the second of December did they kill their first elk.

213. And when game moved out of the lowlands in early spring, the expedition decided to return east rather than face possible starvation.

214. David Douglas, Scottish botanical explorer of the 1830s, found a disturbing change in the animal life around the fort during the period between his first visit in 1825 and his final contact with the fort in 1832.

215. A recent Douglas biographer states:" The deer which once picturesquely (graphically) dotted the meadows around the fort were gone [in 1832], hunted to extermination in order to protect the crops."

216. Reduction in numbers of game should have boded ill for their survival in later times.

217. A worsening of the plight of deer was to be expected as settlers encroached on the land, logging, burning, and clearing, eventually replacing a wilderness landscape with roads, cities, towns, and factories.

218. Wild life zoologist Hulmut Buechner(1953), in reviewing the nature of biotic changes in Washington through recorded time, Says that "since the early 1940s, the state has had more deer than at any other time in its history, the winter population fluctuating around approximately 320,000 deer (mule and black-tailed deer), which will yield about 65,000 of either sex and any age annually for an indefinite period."

219. Great tracts of lowland country deforested by logging, fire, or both have become ideal feeding grounds of deer.

220. In addition to finding an increase of suitable browse, like huckleberry and vine maple, Arthur Einarsen, longtime game biologist in the Pacific Northwest, found quality of browse in the open areas to be substantially more nutritive.

221. The earliest discovered traces of art are beads (necklace) and carvings, and then paintings, from sites dating back to the Upper Paleolithic period.

222． The early Australians may have painted on the walls of rock shelters and cliff faces at least 30,000 years ago and maybe as much as 60,000 years ago.

223. in the inner reaches of caves, whose difficulty of access has been interpreted by some as a sign that magical-religious activities were performed there.

224. The paintings rest on bare walls, with no backdrops or environmental trappings （decorated items）.

225．Perhaps, like many contemporary peoples, Upper Paleolithic men and women believed that the drawing of a human image could cause death of injury, and if that were indeed their belief, it might explain why human figures are rarely depicted in cave art.

226. This theory is suggested by evidence of chips in the painted figures, perhaps made by spears thrown at the drawings.

227. Cave art seems to have reached a peak toward the end of the Upper Paleolithic period, when the herds of game were decreasing.

228. The particular symbolic significance of the cave paintings in southwestern France is more explicitly revealed, perhaps, by the results of a study conducted by researchers Patricia Rice and Ann Paterson.

229. In addition, the paintings mostly portray animals that the painters may have feared the most because of their size, speed, natural weapons such as tusks and horns, and the unpredictability of their behavior.

230. But in that period, when getting food no longer depended on hunting large game animals (because they were becoming extinct), the art ceased to focus on portrayals of animals.

231. In addition to other artworks, figurines representing the human female in exaggerated form have also been found at Upper Paleolithic sites. It has been suggested that these figurines were an ideal type or an expression of a desire for fertility.

232. Continued sedimentation—the process of deposits' settling on the sea bottom—buries the organic matter and subjects it to higher temperatures and pressures, which convert the organic matter to oil and gas.

233. As muddy sediments are pressed together, the gas and small droplets of oil may be squeezed out of the mud and may move into sandy layers nearby.

234. Both oil and gas are less dense than water, so they generally tend to rise upward through water-saturated rock and sediment.

235. When the well reaches a pool, oil usually rises up the well because of its density difference with water beneath it or because of the pressure of expanding gas trapped above it.

236. Water or steam may be pumped down adjacent wells to help push the oil out.

237. The development of the oil field on the North Slope of Alaska and the construction of the Alaska pipeline are examples of the great expense and difficulty involved in new oil discoveries.

238. Offshore drilling platforms extend the search for oil to the ocean's continental shelves—those gently sloping submarine regions at the edges of the continents.

239. It may be in a pool too small or too far from a potential market to justify the expense of drilling.

240. Offshore platforms may also lose oil, creating oil slicks that drift ashore and foul the beaches, harming the environment.

241. The Wilmington field near Long Beach, California, has subsided nine meters in 50 years; protective barriers have had to be built to prevent seawater from flooding the area.

242. While there are a dozen or more mass extinctions in the geological record, the Cretaceous mass extinction has always intrigued paleontologists because it marks the end of the age of the dinosaurs.

243. For tens of millions of years, those great creatures had flourished. Then, suddenly, they disappeared.

244. The body that impacted Earth at the end of the Cretaceous period was a meteorite with a mass of more than a trillion tons and a diameter of at least 10 kilometers.

245. Scientists first identified this impact in 1980 from the worldwide layer of sediment deposited from the dust cloud that enveloped the planet after the impact.

246. This sediment layer is enriched in the rare metal iridium and other elements that are relatively abundant in a meteorite but very rare in the crust of Earth.

247. Even diluted by the terrestrial material excavated from the crater, this component of meteorites is easily identified.

248. This impact released an enormous amount of energy, excavating a crater about twice as large as the lunar crater Tycho.

249. The explosion lifted about 100 trillion tons of dust into the atmosphere, as can be determined by measuring the thickness of the sediment layer formed when this dust settled to the surface.

250. Such a quantity of material would have blocked the sunlight completely from reaching the surface, plunging Earth into a period of cold and darkness that lasted at least several months.

251. The explosion is also calculated to have produced vast quantities of nitric acid and melted rock that sprayed out over much of Earth, starting widespread fires that must have consumed most terrestrial forests and grassland.

252. Following the each mass extinction, there is a sudden evolutionary burst as new species develop to fill the ecological niches opened by the event.

253. Earth is a target in a cosmic shooting gallery, subject to random violent events that were unsuspected a few decades ago.

254. In modern agriculture, mineral depletion of soils is a major concern, since harvesting crops interrupts the recycling of nutrients back to the soil.

255. Mineral deficiencies can often be detected by specific symptoms such as chlorosis (loss of chlorophyll resulting in yellow or white leaf issue), necrosis (isolated dead patches), anthocyanin formation (development of deep red pigmentation of leaves or stem), stunted growth, and development of woody tissue in an herbaceous plant.

256. Phosphorus-deficient plants are often stunted, with leaves turning a characteristic dark green, often with the accumulation of anthocyanin.

257. Much of the research on nutrient deficiencies is based on growing plants hydroponically, that is, in soilless liquid nutrient solutions.

258. This technique allows researchers to create solutions that selectively omit certain nutrients and then observe the resulting effects on the plants.

259. Acroponics, a technique in which plants are suspended and the roots misted with a nutrient solution, is another method for growing plants without soil.

260. A survey of known hyperaccumulators identified that 75 percent of them amassed nickel, cobalt, copper, zinc, manganese, lead, and cadmium are other minerals of choice.

261. Many are found in tropical and subtropical areas of the metals may afford some protection against plant-eating insects and microbial pathogens.

262. Only recently have investigators considered using these plants to clean up soil and waste sites that have been contaminated by toxic levels of heavy metals – an environmentally friendly approach known as phytoremediation.

263. This scenario begins with the planting of hyperaccumulating species in the target area, such as an abandoned mine or an irrigation pond contaminated by runoff.

264. A harvest of the shoots would remove the toxic compounds off site to be burned or composted to recover the metal for industrial uses.

265. After several years of cultivation and harvest, the site would be restored at a cost much lower than the price of excavation and reburial, the standard practice for remediation of contaminated soils.

266. For examples, in field trials, the plant alpine pennycress removed zinc and cadmium from soils near a zinc smelter, and Indian mustard, native to Pakistan and India, has been effective in reducing levels of selenium salts by 50 percent in contaminated soils.