

154 . A decrease in the combining elements of cells ..... the synthesis of carbohydrates from CO<sub>2</sub> in the atmosphere.

- a. postponed                      b. depleted                      c. prompted                      d. converted

155 . Chemical factories (line 8) was mentioned to refer to the .....

- a. carbohydrates                      b. amino acids                      c. compounds                      d. mechanisms

156 . The last sentence implies that life began .....

- a. when most cells achieved some common features  
b. once the cells were able to divide themselves  
c. as cells learned to like parents  
d. after cell division and information transfer occurred

### Passage 5

A single genetic mutation seems to cause the abnormal facial features and other defects in the heart, bone, blood and reproductive cells, which come along with Hamamy syndrome, a rare disorder, whose exact cause was unknown until researchers pinpointed the genetic problem, in their recent paper, that produces the disease to be a mutation in a single gene called IRX5.

The work lends new insights into common ailments such as heart disease, osteoporosis, blood disorders and possibly sterility, "The findings provide a framework for understanding fascinating evolutionary questions, such as why humans of different ethnicities have distinct facial features and how these are embedded in our genome. IRX genes have been repeatedly co-opted during evolution, and small variation in their activity could underlie fine alterations in the way we look, or perhaps even drastic ones such as the traits seen in an elephant, whale, turtle or frog body pattern," Reversade said.

Rare genetic diseases, usually caused by mutations in a single gene, provide a unique opportunity to better understand more common disease processes. These "natural" experiments are similar to carefully controlled lab experiments in which the function of single genes are analyzed and often give major insights into general health issues. "This discovery of the causative gene is a significant finding that will catalyze research efforts into the role of the IRX gene family and greatly increase our understanding of bone homeostasis, or gamete formation, and so forth."

157 . It is said that Hamamy syndrome is ..... throughout the world.

- a. uncommon                      b. incurable                      c. contagious                      d. prevalent

158 . The discovery in question is said to open up new therapeutic solutions to .....

- a. some rare and complicated types of cancer  
b. a small number of patients worldwide  
c. some diseases affecting millions of people  
d. many afflicted with sexually transmitted diseases