

**Passage 4**

Evolution of cells is closely linked to the evolution of life. Evolution of life was probably preceded by a chemical evolution. It seems that about 4 billion years ago conditions on earth favored the formation of a few simple carbohydrates, amino acids and nitrogenous bases from the atmospheric gases. The packaging of these compounds in a membrane resulted in the formation of primitive cells. These cells somehow 'learnt' to oxidize their contents to release energy, and replenished their contents from the surroundings. But gradual depletion of ready-made compounds in the environment compelled the evolution of mechanisms to synthesize at least carbohydrates from the atmospheric carbon dioxide. The crucial step which gave 'life' to these chemical factories was the evolution of mechanisms for self-replication accompanied by information transfer. Once the cell could divide, and pass on information so that products of the division would also behave like the parent, the basic features of life had been achieved.

152 . The passage aims at describing the .....

- a. origin of cell
- b. history of evolution
- c. evolution of organisms
- d. events of four billion years ago

153 . About 4 billion years ago, a chemical evolution ..... the formation of cells.

- a. resulted from
- b. led to
- c. was preceded by
- d. followed from

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.