

The Story of Human Evolution

**I. Answer in a word or a sentence**

**Question 1.**

From which language is the term 'human' derived?

**Answer:**

Latin

**Question 2.**

What is the meaning of the term 'homo'?

**Answer:**

Man (inclusive of woman)

**Question 3.**

When did the Earth originate?

**Answer:**

About 4.5 billion years ago

**Question 4.**

Which was the book written by Charles Darwin?

**Answer:**

The Origin of Species

**Question 5.**

When did human like beings evolve on earth?

**Answer:**

About 5.6 million years ago

**Question 6.**

How many years were required to genus homo to evolve from the superfamily Hominoidea?

**Answer:**

About 30 million years

**Question 7.**

When did genus Homo come into existence?

**Answer:**

About 5.6 million years ago

**Question 8.**

Which human species was the first to manufacture stone tools?

**Answer:**

Homo habilis

**Question 9.**

What is bipedalism?

**Answer:**

Walking or running on two feet

**II. Answer in two words or two sentences**

**Question 1.**

Mention any two theories of origin and evolution of Earth.

**Answer:**

Steady State Theory, Big Bang Theory

**Question 2.**

Which were the two important factors responsible for the formation of Earth's weather and climate?

**Answer:**

Earth's tilt, Formation of the Moon

**Question 3.**

Which were the two chemicals responsible for the origin of life?

**Answer:**

Hydrogen, Carbon

**Question 4.**

Which two theories were proposed by Charles Darwin?

**Answer:**

Natural Selection, Survival of the Fittest

**Question 5.**

Which two animals are considered as the nearest relatives of man?

**Answer:**

Chimpanzees, Bonobos

**Question 6.**

Where do we find evidences for the earliest planned hunting and butchery of large animals?

**Answer:**

Boxgrove (England), Schöningen (Germany)

**III. Answer in 15-20 sentences. [Each 5 Marks]****Question 1.**

How was the Earth's Crust formed?

**Answer:**

In the early stages of its formation, about 4.5 billion years ago, the Earth was a white-hot mass of molten rock. The temperature was extremely high, and frequent volcanic eruptions and collisions with comets and meteors were common. One massive collision is believed to have caused the Earth's tilt and the formation of the Moon. Over millions of years, the Earth began to cool gradually. This cooling reduced volcanic activity considerably. The outer layer of the Earth solidified to form hard rock, called the Earth's crust. As the cooling continued, the crust contracted, creating folds and wrinkles, which became mountains and valleys. Volcanic eruptions released gases, forming the primordial atmosphere.

At that stage, water existed only as steam because the crust was still hot. Further cooling condensed the steam into clouds, leading to heavy and continuous rainfall. These rains filled depressions, creating rivers, lakes, seas, and oceans. Winds and rains also eroded mountains and valleys. The erosion broke rocks into small particles, forming sand, mud, and eventually soil. The ocean floor also formed in this process. However, in the early stages, the atmosphere was toxic and not yet suitable for life to originate.

**Question 2.**

How was food and shelter responsible for Human evolution?

**Answer:**

Early hominoids lived on trees, where they were safe from predators and gathered food like fruits, seeds, nuts, and tubers. They were not meat eaters initially. Climate changes, especially the Ice Ages, reduced forests and expanded grasslands and deserts. This forced early hominids to come down to land for food. At first, they stayed on land for short periods but gradually adapted to land dwelling. On land, they began using caves and large stone boulders as shelters, which gave protection from predators, rain, wind, and sun. The Neanderthal man was the earliest known cave dweller. Shortages of food made early humans scavenge for dead animals or leftovers from predators.

These survival challenges encouraged upright posture and bipedal movement, freeing their hands for carrying and making tools. Later, planned hunting and fishing began alongside gathering and scavenging. Riverbanks and lakes, rich in food, encouraged humans to build structural shelters from stone, wood, bones, and thatch. This shift from tree-dwelling to structural shelters shows the close link between food availability, shelter, and human evolution.

**Question 3.**

What was the role of domestication of animals and agriculture in Human evolution?

**Answer:**

Domestication of animals and the beginning of agriculture were revolutionary in human evolution. Early humans, who were hunters and gatherers, became food producers. The first domesticated animal is believed to be the dog, which likely stayed near human camps for leftover food. Over time, dogs were tamed and helped in hunting and guarding shelters. Other

animals like sheep, goats, cows, cats, camels, and horses were domesticated later. Rearing animals made humans nomadic, moving in search of water and grazing lands. Agriculture began around 13,000 years ago, marking the Neolithic Revolution.

Crops like wheat, rice, and millets were cultivated. Agriculture allowed humans to settle permanently, leading to the formation of villages. Surplus food supported population growth and specialization of labor. Villages developed into towns, laying the foundation for early civilizations such as Egypt, Mesopotamia, China, and the Indus Valley. Thus, domestication and farming transformed human society from a mobile lifestyle to a settled and organized one.

#### **Question 4**

What role did bipedalism and stone tools play in the Human evolution?

#### **Answer:**

Bipedalism means walking on two feet, and it was a major adaptation in human evolution. Early hominoids were quadrupeds, but over time, they developed upright posture. Walking on two legs freed their forelimbs, which evolved into hands with power and precision grips. This allowed them to make and use tools effectively. Bipedalism also provided better vision over long distances and helped conserve energy while traveling. Stone tools, first made by *Homo habilis*, marked another leap in evolution. *Australopithecus* may have used natural stones, but shaping stones into tools started with *Homo habilis*. Stone tools were used for hunting, cutting, and defending against predators.

The earliest tools, known as Oldowan tools, date back 2.6 million years. Over time, tool-making techniques improved, leading to Paleolithic, Mesolithic, and Neolithic periods. Tool-making required intelligence, which encouraged brain growth.

Thus, bipedalism and tool-making worked together—free hands enabled better tools, and better tools improved survival.

**Question 5.**

Discuss the place of origin of the modern Man.

**Answer:**

The origin of modern humans is debated, and two main theories exist. The first is the Replacement or African Origin Theory, which says modern humans evolved in Africa from archaic humans. Africa's tropical climate provided an ideal environment for evolution. From Africa, humans migrated to other parts of the world, replacing earlier human-like species there. Fossil evidence and genetic similarities among all modern humans support this theory.

The second is the Regional Continuity Theory, which states that human evolution happened simultaneously in different parts of the world—Africa, Europe, and Asia. According to this theory, local archaic species evolved into modern humans at different rates, explaining variations among today's populations. While the African Origin Theory is more widely accepted, both theories contribute to understanding human evolution. Evidence from fossils, genetics, and archaeology continues to shed light on this important question.

**IV. Answer the following Question in 30-40 sentences. [10 Marks]**

**Question 1.**

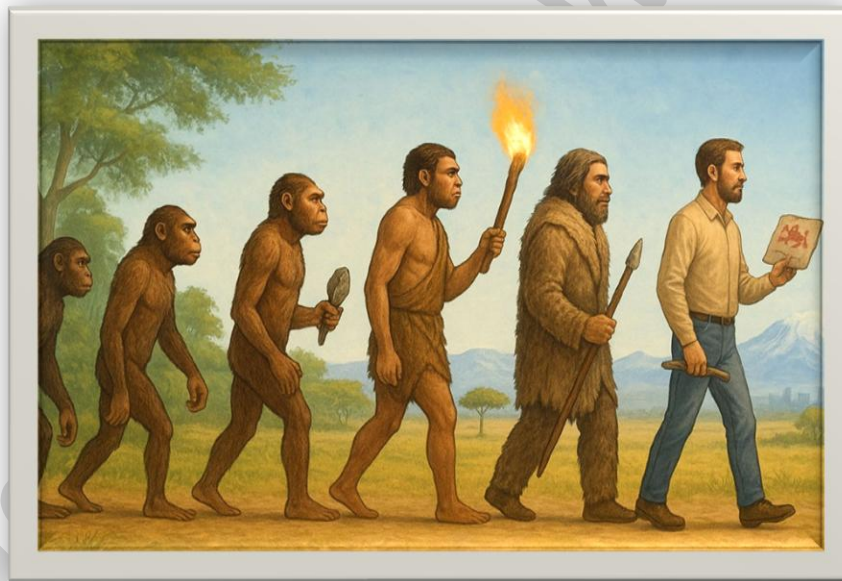
Discuss the important factors of Human evolution

**Answer:**

- Human evolution is a long and complex process by which modern humans (*Homo sapiens*) developed from earlier ancestors over millions of years. Several important factors contributed to this transformation.

- One of the primary factors was **environmental change**. About 4.5 billion years ago, the Earth formed, and over time, shifting climates, volcanic activities, and changes in sea levels shaped the habitats in which early humans lived. The spread of grasslands and reduction of dense forests encouraged adaptations for life in open areas.
- **Bipedalism** was a crucial development in human evolution. Walking on two legs freed the hands for carrying objects, making tools, and gathering food. It also helped early humans travel long distances efficiently and spot potential dangers in open landscapes.
- Another major factor was **brain development**. Over time, the human brain grew larger and more complex, especially in areas controlling memory, problem-solving, and communication. This enabled advanced thinking, planning, and creativity.
- **Tool-making** played an important role in survival. Early species like Homo habilis created simple stone tools for cutting, scraping, and hunting. Later, more advanced tools improved efficiency in food preparation and hunting.
- **Control of fire** was another milestone. Fire provided warmth, protection from predators, and a way to cook food, making it easier to digest and providing more energy for brain growth.
- **Dietary changes** also shaped evolution. The shift from a purely plant-based diet to one including meat provided protein and essential nutrients, aiding brain development. The search for food led to migration and adaptation to new environments.
- **Social behaviour** and cooperation helped humans survive. Early humans began living in groups, which improved hunting success, protection, and sharing of resources. Communication through gestures and eventually language strengthened these bonds.

- **Domestication of animals and agriculture** transformed human life. Farming allowed stable food supplies and permanent settlements, while animals provided food, labour, and companionship. This led to the development of civilizations.
- **Climate adaptation** influenced skin colour, body size, and other physical traits. Humans adapted to cold climates with body fat and clothing, while in hot regions, they developed darker skin to protect from UV rays.
- Finally, **migration** spread humans across the globe. From their African origins, humans moved into Asia, Europe, Australia, and the Americas, adapting to varied climates and environments.



## Additional Questions and Answers

### Short Answer (2 Marks)

#### Question 1.

What is the meaning of the term 'Hominid'?

#### Answer:

Hominid refers to members of the biological family Hominidae,



which includes modern humans and their ancestors, as well as great apes like chimpanzees, gorillas, and orangutans.

**Question 2.**

Name any two early human species.

**Answer:**

*Australopithecus afarensis* and *Homo habilis*.

**Question 3.**

Which tool-making culture is associated with *Homo erectus*?

**Answer:**

The Acheulean tool-making culture, known for hand axes and cleavers.

**Long Answer (5 Marks)**

**Question 1.**

Explain the importance of fire in human evolution.

**Answer:**

Fire played a transformative role in human evolution. It provided warmth in cold climates, extending human habitats into new regions. It offered protection from predators and allowed cooking of food, making it easier to chew and digest, which improved nutrition and energy intake. Cooking also reduced the risk of diseases from raw meat. Social gatherings around fire encouraged communication, cooperation, and planning. Overall, control of fire supported brain growth, migration, and cultural development.

**Question 2.**

Describe the main features of *Homo sapiens*.

**Answer:**

*Homo sapiens*, or modern humans, have a large brain capacity (around 1,350 cc), high forehead, and rounded skull. They have small jaws and teeth, a prominent chin, and a lighter, more gracile skeleton compared to earlier species. Their hands are capable of precise grip, allowing fine tool-making and writing.

Homo sapiens are also capable of complex speech, symbolic thought, art, and cultural traditions.

### **Very Long Answer (10 Marks)**

#### **Question 1.**

Trace the migration of modern humans from Africa to other continents.

#### **Answer:**

Modern humans originated in Africa about 200,000 years ago. The earliest migrations began around 60,000–70,000 years ago, moving along coastal routes to the Middle East. From there, humans spread into South Asia and Southeast Asia. About 50,000 years ago, they reached Australia, using primitive boats. In Europe, Homo sapiens arrived around 45,000 years ago, replacing Neanderthals. Around 15,000–20,000 years ago, humans crossed the Bering land bridge from Siberia into North America, eventually spreading into South America. These migrations were influenced by climate change, resource availability, and population pressures, and they resulted in adaptation to diverse environments worldwide.