

CHAPTER II

THE STORY OF THE EVOLUTION OF MAN

I. ANSWER IN A WORD OR SENTENCE EACH (1 MARKS).

1. From which language is the term 'human' derived?

A: The term 'human' is derived from the Latin word 'humanus'.

2. What is the meaning of the term 'homo'?

A: Man.

3. When did the earth originate?

A: The earth originated about 4.5 billion years ago.

4. Which was the book written by Charles Darwin?

A: 'On The Origin Of Species'.

5. When did human like beings evolve on earth?

A: 5.6 million years ago.

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

A: The evolution of genus Homo from the superfamily Hominoidea took about 30 million years.

7. When did genus Homo come into existence?

A: About 5.6 million years ago.

8. Which human species was the first to manufacture stone tools?

A: Australopithecus.

9. What is bipedalism?

A: Bipedalism refers to walking and running on two feet.

II. ANSWER IN TWO WORDS OR SENTENCES EACH. (2 MARKS)

1. Mention any two theories of origin and evolution of Earth.
A: a) The Big Bang Theory.
b) The Pulsating Theory.

2. Which were the two important factors responsible for the formation of Earth's weather and climate?
A: a) the volcanic activity.
b) cooling of the earth's crust.

3. Which were the two chemicals responsible for the origin of life?
A: a) Hydrogen
b) Oxygen.

4. Which were the two theories proposed by Charles Darwin?
A: a) The theory of Natural Selection
b) The theory of Survival of the Fittest.

5. Which two animals are considered as the nearest relatives of man?
A: a) Chimpanzees
b) Bonobos.

6. Where do we find evidences for the earliest planned hunting and butchery of large animals?
A: a) Boxgrove in England
b) Schoningen in Germany.

III. ANSWER IN 15 TO 20 SENTENCES EACH. (5 MARKS)

1. How was the Earth's crust formed?
A: Earth is one of the planets in the solar system. It is said to have been formed at least 4.5 billion years ago. The temperature was very high and earth was white hot mass of melted rock. It witness frequent volcanic activity and large collisions. Many comets and meteors collided with earth in its early years and one such collision resulted in the earth's tilt and the formation of the Moon. Earth remained in molten state for many million years and then began to cool down with reduced volcanic activity. The gradual cooling of the earth made the outer side to become solid rock, which is called the earth's crust. Further cooling made the the earth's crust to contract resulting in the formation of mountains and valleys.

2. How was the food and shelter responsible for human evolution?

A: a) Hominoids lived on trees. The trees provided protection from wild animals. They were food gatherers, and gathered seeds, nuts, fruits, berries etc. they were not meat eaters.

b) Hominids began to live on land. The change in climate or ice age reduced the forests and expanded the grasslands, plains and deserts. So they were forced to come on lands for food. They began to use caves and stone boulders as shelters. This provided them safety from wild animals, rain, wind and the sun. The shortage of food made them to cover long distances. They scavenged dead animals and leftovers of animals killed by predators. The above activities made them develop an upright posture and the bipedal motion.

c) Hominines began planned hunting and fishing also. Planned hunting requires developing tools, co-operation from fellow beings, which stimulated growth in brain size. The growth in brain size in turn helped them to plan and make better tools. They started looking for places like river beds and lake beds with abundant food supply. They began to erect or build structural shelters by using stone, wood and skeletons of large animals. All these activities also helped in their brain development.

3. What was the role of domestication of animals and agriculture in human evolution?

A: Domestication of animals was followed by Agriculture. They were prepared to overcome the climatic changes through agriculture and domestication of animals. They had food in the form of domestic animals. They domesticated animals like dogs, sheep, cow, goat, cat etc. Man became a nomad and travelled seeking food and water for his animals.

Agriculture is considered as a revolutionary change in the history of human evolution.

With the advent of agriculture, the humans who were 'food gatherers' became 'food growers' or 'food producers'. They began to grow wheat, rice millets etc. and eventually led towards settled life. This led to coming up of villages which later became foundations of civilizations.

4. What role did bipedalism and stone tools play in human evolution?

A: Bipedalism means walking or running on two feet.

Hominoids walked on four legs, but their forelimbs were flexible. The Hominids adapted to an upright posture, and thus followed the Hominines.

The skeletal structure and muscles also adjusted over a period of time to the upright posture and the bipedal motion. Bipedal motion freed the forelimbs. The forelimbs gradually precision grip and power grip. With this, the forelimbs evolved into hands. This helped in hunting and defending and for making better tools. Walking on two legs provided them with greater long distance vision and helped them to cover long distance, without spending much energy.

Tool making: the process of making and using tools, required greater intelligence. This was responsible to the evolution of forelimbs into hands and also the growth in brain size. The Australopithecus species is said to have first used the naturally available stones as tools.

5. Discuss the place of origin of the modern man.

A: There are two theories regarding the place of origin of modern man:

1) The Replacement Theory or African Origin Theory:

According to this theory, Africa with its tropical climate of wet and dry seasons provided a favourable environment for the emergence of modern man. Some of them migrated to different parts of the world. The discovery of fossils of early human species in Africa and the genetical and anatomical homogeneity among modern humans in all parts of the world are evidences of this theory.

2) The Regional Continuity Theory:

According to this, the evolution of human species occurred in different parts of the world, at different rates. The dissimilarities among human population in different regions of the world is an evidence to this theory.

IV. **ANSWER THE FOLLOWING IN 30 TO 40 SENTENCES EACH. (10 MARKS)**

1. Discuss the important factors of Human evolution.

A: a) Climate change:

The changing weather and climatic conditions on earth have greatly influenced human evolution (like the onset of ice age covered most parts of earth with snow). The cooling and drying conditions, led to the contraction of forests which expanded the plains or grasslands and deserts. This increased competition among plants and animals for food. The species which could better adapt to the climatic changes and procure food, survived and the others became extinct. The ice age induced humans to wear animal skin to keep them warm.

b) Growth in brain size:

The human brains became larger and more complex due to the challenges (like surviving against powerful animals) they faced. The growth in brain size induced many activities like improved vision, upright posture, bipedalism, tool making, use of fire, planned hunting etc. these activities in turn helped in the development of brain. The size of the brain of today's man is 1400 c.c , whereas that of Homo habilis was 600 c.c.

c) Food and Shelter:

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f) Language:

Planned hunting required co-operation. The early humans began to use signals and gradually two or three word utterances which produced different kinds of sounds. With the passage of time, these formed languages. The development of languages was mainly because of the growth in brain size as memory played an important role here. The use of language in turn stimulated brain development.

g) Domestication of animals and commencement of agriculture:

Domestication of animals was followed by Agriculture. They were prepared to overcome the climatic changes through agriculture and domestication of animals. They had food in the form of domestic animals. They domesticated animals like dogs, sheep, cow, goat, cat etc. Man became a nomad and travelled seeking food and water for his animals.

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h) Art:

The skill or art of painting or making figurines developed at a later stage of human evolution. This served the aesthetic pleasure, or were rituals or served magical purposes. The paintings, (usually hunting scenes), were done by using charcoal mixed with water, blood, animal fats etc.