PLUTUS IAS

Anthropology NCERT Test 2 Model Answers

Section A

Q1. Write short notes on the following in about 150 words each:

a) Palaeoanthropology

Palaeoanthropology, earlier known as human palaeontology, is the study of human origin and evolution, particularly as inscribed in the fossil record. Palaeoanthropologists are interested in reconstructing the evolutionary stages of humans, based on fossil evidences.

They work with archaeologists, and geologists, in unearthing fossil remains from many parts of the world. The knowledge of biology and osteology helps them to examine, measure, and reconstruct these remains to understand the course of human evolution, and identify the possible lines of descent from our ancestors to the present form, Homo sapiens.

(Source- Slides 8-9)

The term paleoanthropology derives from Greek palaiós "old, ancient", ánthrôpos "man, human" and the suffix -logía "study of". Louis Lartet was one of the first to use the term "paleo-anthropologie."

Paleoanthropology emerged as a science during the late nineteenth century. The discovery of prehistoric artifacts in Pleistocene deposits soon led to the excavation of fossilized human bones. Anthropologists examined the human fossils. They wanted primarily to identify the races of prehistoric humans. In the early beginning of paleoanthropology, the main question was quite simple: is there a fossil record which proves the existence of our ancestors from ancient times?

The field draws from and combines paleontology, biological anthropology, and cultural anthropology. As technologies and methods advance, genetics plays an ever-increasing role, in particular to examine and compare DNA structure as a vital tool of research of the evolutionary kinship lines of related species and genera.

The best development of palaeoanthropology occurred in France, where Pierre Marcelin Boule (1861-1942), a qualified geologist, paleontologist, and archaeologist, did the classical processing of the Neandertal skeletons from La Chapelle-aux-Saints (Boule 1911-1913) became a landmark in the history of human paleontology. He aimed to understand the patterns of variation and the significance of anatomical differences. For this reason, he invented special instruments for qualification(s) and simple statistical concepts to analyze the variation in human skeletons. Boule established a paleontology of humans, later on called paleoanthropology, as a scientific discipline

b) Man's place in animal kingdom

Living beings on earth are classified into two kingdoms:
1. Plant kingdom
2. Animal kingdom.

Humans are the most developed primate in the **animal kingdom**. Animal kingdom is divided into two sub kingdoms namely, protozoa and metazoa.

- Protozoa includes unicellular organisms. They reproduce through asexual reproduction, i.e. through cell division (e.g. amoeba).
- **Metazoa**, to which the humans belong, have multiple cells, and the feature of sexual reproduction. Metazoa consists of two Phylums, chordata and non-chordata.

Chordate, to which Humans belong, possesses a dorsal nervous system starting from the brain. It moves along the spinal column. The internal bony segments of the spinal column

put humans in the sub-phylum vertebrates. Chordate is classified into different classes, of which, the humans come under the mammals.

Mammals are placed in the topmost position among the vertebrates. They are warm blooded and are able to maintain a constant body temperature. They have two sets of teeth, deciduous and permanent, which are embedded in the sockets. The teeth are of different types (heterodont), such as incisors, canines, premolars, and molars. Mammals have breasts and the mothers nourish their babies with their own milk. The females of the mammals not only feed the young ones after birth but also establish a social relationship with their offspring. This trait of establishing social relationships is a milestone in human evolution. The class Mammals or Mammalia is again divided into three sub-classes namely Prototheria, Metatheria and Eutheria.

Eutheria, the last of which includes the placental animals including humans. Among them, the unborn young are developed in the maternal womb. The mother possesses placenta to nourish the fetus during its development before birth, directly from the bloodstream of the mother through placental plate. The subclass Eutheria is again divided into different orders, of which, the Primates are placed at the top, as the term means 'the First'.

Primates is the order where the human is placed. The following are some of the characteristics of the order Primates:

Cranial Features	Postcranial Features
● The brain is large in proportion to body size. ● Reduced canines ● Eyes are located forward on the skull. ● Centrally placed foramen magnum ● Remarkable reduction in prognathism.	● Prehensile hand - (ability to grasp) ● Developed fingers, nails and toes Flexible forearm ● Opposable thumb ● Erect posture ● Loss of opposability of great toe ● They have the tendency to give birth only one offspring at a time. ● They have a prolonged growth of maturity.

(Source- Slides 66-75)

c) Neanderthal

Neanderthals are often referred to as early Homo sapiens. The Neanderthal stage is represented by Neanderthal humans, who lived in Europe, North Africa, and parts of Asia during the period between Homo erectus and modern humans, from about 1,00,000 to 35,000 years ago.

In 1856, a skull cap along with some bones was discovered at Neanderthal valley (near Dusseldorf) in Germany. Neanderthal human was first coined by Irish anatomist William King, in 1863 . Subsequent discoveries of a large number of skeletal remains were made in different parts of Europe and all of them showed a good number of common characters. On the basis of these common characters, they are grouped together under a common name Neanderthal human.

Neanderthal humans are specifically adapted to cold conditions. It is believed that Neanderthal humans practiced hunting, gathering and agriculture. They used fire and stone tools. Neanderthal humans lived in groups and used animal skin as clothes.

The important characteristic features of Neanderthal human include large cranial capacity of about 1300cc to 1750cc, maximum skull breadth at the middle point resulting in a barrel-shaped skull, absence of chin, facial prognathism, absence of vertical forehead, larger brain size , big jaws and teeth and unflattening of maxilla.

What happened to Neanderthal?

Neanderthals and modern humans coexisted in Europe for the last 20,000 years . What happened to Neanderthals? Three answers have generally been considered.

- Firstly, they interbred with modern humans and the unique Neanderthal characteristics slowly disappeared from the interbreeding population.
- Second, they were killed off by modern humans.
- Third, they were driven to extinction due to competition with modern humans.

(Source- Slides 36-41)

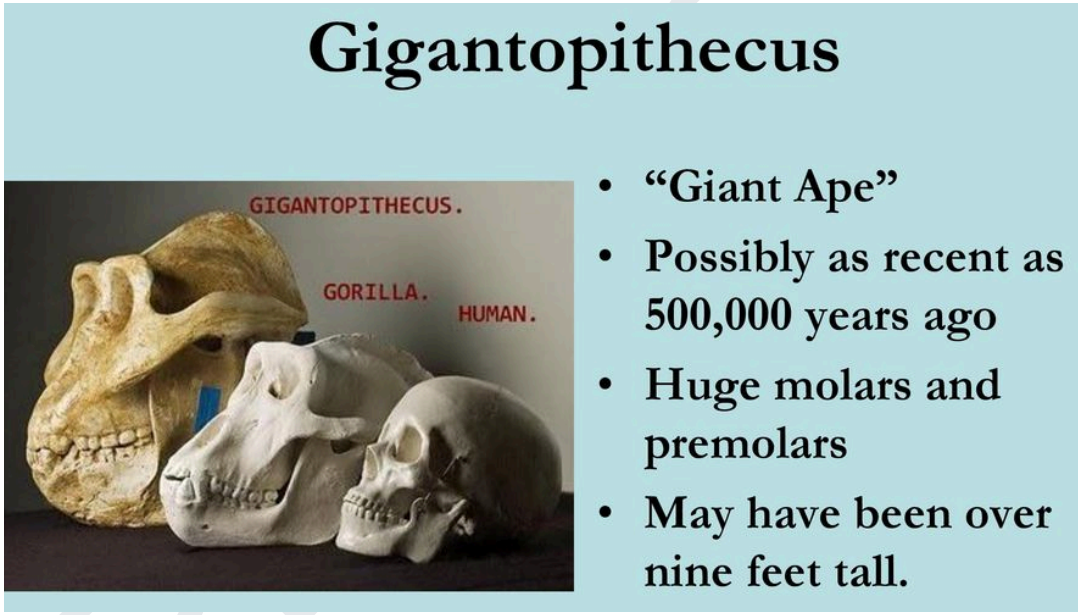
d) Gigantopithecus

Dryopithecines lived 20 million years ago, regarded as the ancestor of both apes and humans. It consists of 3 varieties namely Dryopithecus, Ramapithecus, and Gigantopithecus. Dryopithecus and Gigantopithecus are included in the family Pongidae and Ramapithecus is included in Hominidae.

Gigantopithecus:

Time Period: Gigantopithecus lived during the Pleistocene epoch, approximately 9 million to 100,000 years ago.

Geographical Range: Fossils of Gigantopithecus have been found primarily in Asia, particularly in China and Southeast Asia.



Physical Characteristics: Gigantopithecus was one of the largest known primates to have ever existed, with some species reaching heights of up to 10 feet (3 meters) and weighing over 1,000 pounds (450 kilograms). It had a robust body and likely had a diet consisting mainly of plants.

Evolutionary Significance: Gigantopithecus is not directly ancestral to modern apes or humans but represents a unique branch of the primate family tree. Its massive size and dentition suggest adaptations for eating tough, fibrous vegetation.

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(Source: Slides 130-136)

e) Meaning and Scope of Biological Anthropology

Biological anthropology, also known as physical anthropology, studies the biological characteristics of humans. Biological anthropology deals with the study of biological origin, evolution and variation of human beings.

It is interested in the comparative study of the past, present and future of human life from a biological point of view. It also analyses the biological adaptation of different human populations living in different geographical areas.

As you know, anthropology addresses those questions of curiosity that concern all about human beings. The following are such questions related to our biological nature.

- How did humans originate?
- Where did they originate?
- Are we related to other animal organisms including the apes and monkeys?

Scope of Biological Anthropology

For a systematic study of this kind, there are many fields of specialisation within biological anthropology which indicate its scope, as the following:

Paleoanthropology Primatology Human Genetics Forensic Anthropology Serology Dermatoglyphics	Anthropometry Craniometry Paleopathology Bio-archaeology Neuro- Anthropology Biomedical Anthropology

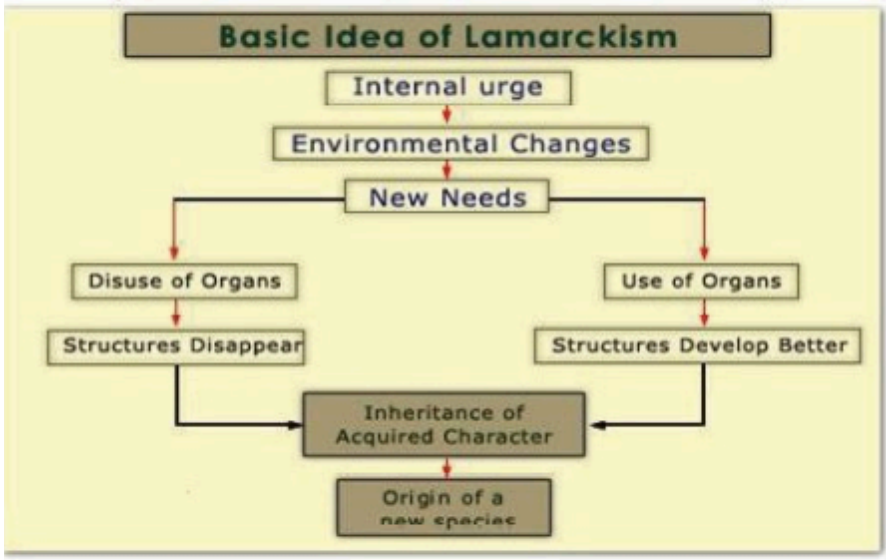
(Source- Slides 4-7)

Section B

Q1. Discuss the theory of organic evolution given by Lamarck.

Jean Baptist de Lamarck (1744-1829) was a French biologist, who for the first time, recognised that all life on earth is the product of evolutionary change. This theory is also called Inheritance of Acquired Characters and explains the origin of new species. He explained his theory of evolution in 1809 in his 'Philosophie Zoologique'.

The theory states that modifications which the organism acquires in adaptation to the environments which it meets during its lifetime are automatically transmitted to its descendants and so become part of hereditary.



Lamarck proposed these ideas as two different laws as the following.

(i) **The law of use and disuse**:

According to Lamarck, a living body is influenced by environmental factors and ultimately this phenomenon initiates an adaptation of organisms to its surroundings. per necessity, some parts of the body may be used more and more. Therefore, those parts tend to show more development or changes in course of time, while the other parts of the body, which may not be required much, will become weak or degenerate due to constant disuse. Thus Lamarck argued that, if an organ is put to continuous activity it will develop to the maximum extent and disuse of the same may lead to degeneration.

According to this theory, an organ that is used constantly develops well and is strengthened. The organs which are not used for an extended period of time gradually degenerates. An evidence of this theory was the evolution of elongated necks in giraffes and degenerated wings of Kiwi as they have adapted to walk.

Similar to the horses, the ancestors of giraffes bear short necks and short forelimbs. But due to the lack of surface vegetation, they forced themselves to stretch their neck and forelimbs to feed on the leaves from the trees.

This continuous stretching of their neck and forelimbs resulted in the development of long neck and long forelimbs, considered characters.

ii) **Inheritance of acquired characters:**

Evolution is the result of adaptation of organisms to the environment. Modifications produced during the lifetime of organisms become hereditary and will be inherited by the offspring. Thus, the theory of inheritance of acquired character states that all the modifications which the organism acquired during its lifetime in adaptation to the environment are automatically transmitted to the next generation and so become a part of heredity.

<u>To support his theory, Lamarck presented examples:</u>

The most remarkable one is associated with the long neck and tall front legs of giraffes. According to Lamarck, the ancestors of giraffes were normal animals with reasonably long neck and forelimbs. They depended on grass and bushy vegetation for their survival. But a sudden scarcity of leafy vegetation due to some environmental factors, forced the giraffe to depend on leaves of tall trees and for that they had to stretch their neck and

forelimbs. The continuous stretching of these organs resulted in the long neck and long forelimbs of present day giraffes. As a result of these experiments, Lamarckian law of inheritance of acquired characters lost its evolutionary ground.

But the effort towards finding facts related to organic evolution continued. Charles Darwin's interest in this field gave birth to new findings. Later on, it became the basis of evolutionary principle.

(Source-Slides: 30-42)

Lamarckism includes two subtle principles as follows:

1. Internal vital force:

According to Lamarck, every organism has a vital internal force called 'elan vital' or growth. The size of living and their parts tend to increase in its volume throughout time. This growth in size is due to the organism's internal vital force.

2. Effect of environment and 'new needs':

Our environment is a tremendous influencer. Hence, a change in the environment brings about initiation of new needs in the organisms. In order to meet up these new needs, organisms develop certain adaptive characters which are morphological or anatomical. This leads to changes in the functions also. Such variations are called 'acquired characters'. These adaptive characters of the organisms may be in the form of development of new parts of the body.

Some examples given by Lamarck:

- Development of strong biceps muscles in blacksmith
- Elongated body and loss of limbs in snakes due to continuous creeping through the holes and crevices
- Migration of both the eyes towards the upper side in flat fishes living on the bottom of sea
- Development of strong leg bones, muscles and tendons for fast running and thickened enamel in teeth for chewing in horses during a shift from forest life to Savannah life

- Lengthening of neck in the giraffe due to its continuous use in reaching to the leaves and fruits of high rise tree
- Occurrence of vestigial organs such as Pinna, Simi lunar membrane, vermiform appendix etc in man due to its constant disuse
- Development of web in between the digits in water birds to facilitate swimming

Criticism of Lamarck

- Mutilation experiments by Weismann on white mice by cutting their tails up to 22 generations from five mutilated parents and obtained 901 young. No one was not without a tail.
- Artificial parthenogenesis in the sea urchin's egg by Loeb with the help of chemical stimuli. But none of their offspring showed acquired characters.
- Piercing of nostrils and ears in Indians for centuries, but no offspring with holes in ears and nostrils.
- Pavlov trained the mice to come for food on hearing a bell. But it was found that this training was necessary for each and every generation.
- Castle and Philips put a black female guinea pig's ovary into the body of white female guinea pig and allowed it to mate with a white male but all offspring were black.
- Females in China wear iron shoes in order to reduce their feet to a short size, but their young ones show same normal feet when they born.

Q2. Discuss Mendel's laws of inheritance.

The father of genetics, Gregor Johann Mendel, was a priest and born in North Moravia, Austria, at present a part of the Czech Republic. In 1856, in a monastery garden, Mendel began a series of experiments to reveal the basic principles of genetics and published a paper in 1866 entitled "Experiments in Plant Hybridisation". Gregor Mendel's experiment on garden pea is regarded as a great landmark in the study of genetics. Mendel studied the inheritance of seven contrasting traits in pea plants. For each trait, there were only two forms. The plants have either tall or short forms.

- Mendel crossbred pure strains of tall and short plants. Their offspring were all tall in the first generation, which is designated as **F1 generation.**
- Mendel then interbred the plants of F1 generation to produce the **F2 generation**. In this generation, short plants reappeared. Among thousands of F2 generation, there was approximately one short plant for every three tall ones.

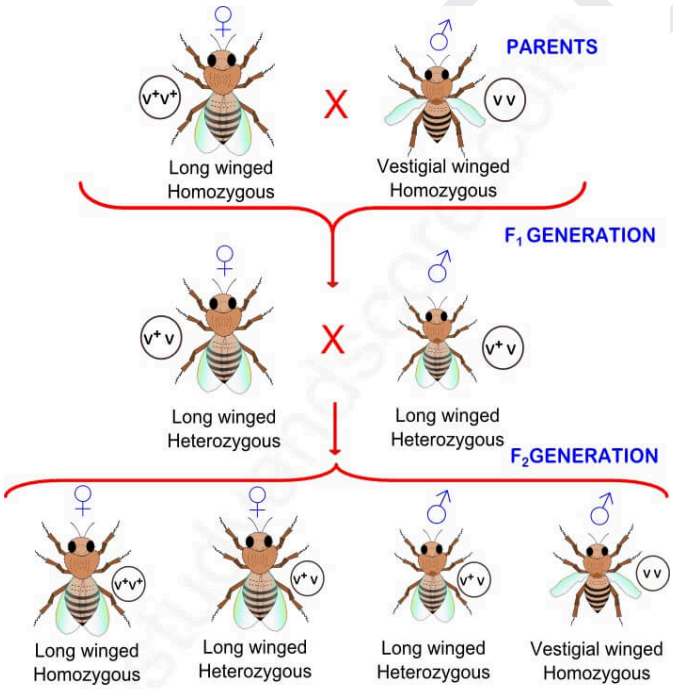
From similar results with other six traits, Mendel concluded that although a dominant form could mask the other form in hybrid, the recessive form was not destroyed. Recessive traits would appear in unaltered form in later generations because genetic traits were inherited as **discrete units.**

Mendel discovered that heredity is determined by discrete particles These particles or units are known as **Genes**. The genes are located in the chromosomes. Chromosomes are arranged in pairs. Humans have 46 chromosomes, arranged in 23 pairs, one in each pair from the father and the other from the mother.

Mendelian genetics is based on three laws namely, Law of Segregation, Law of Independent Assortment and Law of Dominance.

The Law of Segregation

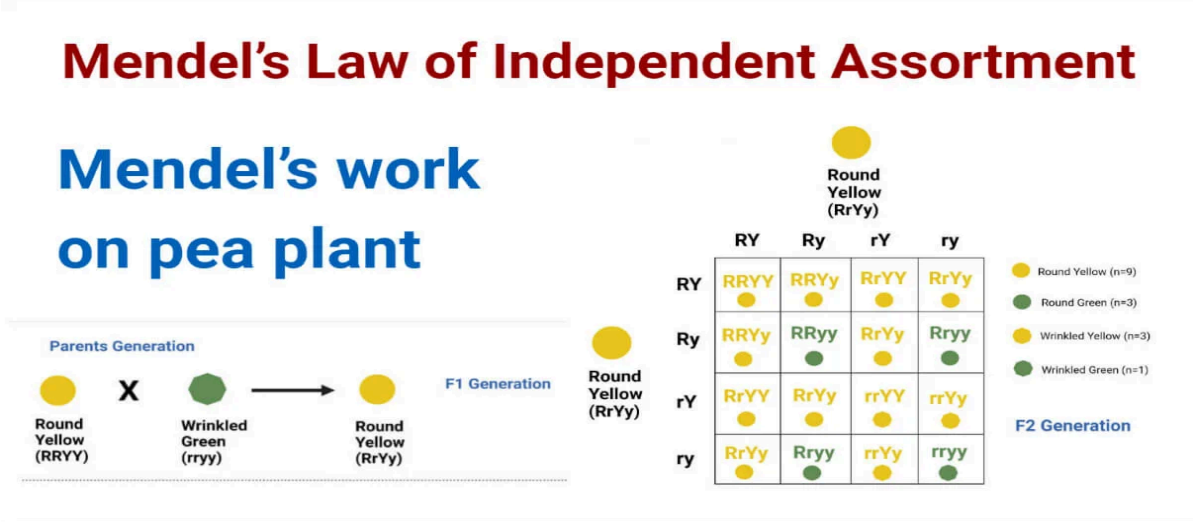
It states that alleles, the unit of heredity, exist within the individual in pairs. The pairs are segregated during the production of gametes, so that a gamete has only one pair of each kind. Meiosis is a process where a single cell divides twice to produce four cells containing half the original amount of genetic information. During meiosis one cell divides twice to form four daughter cells. These four daughter cells only have half the number of chromosomes of the parent cell – they are haploid.



Cross beween Long-winged and vestigial-winged Drosophila

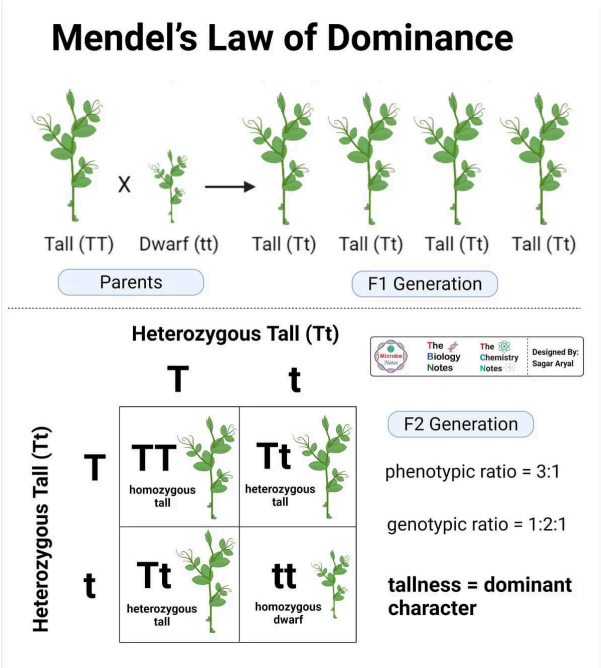
Law of Independent Assortment

States that the separation of one pair of genes does not influence the separation of other pair of genes. Gene pairs on one set of homologous chromosomes do not influence the distribution of gene pairs on other chromosomes; they separate independently from one another during meiosis and are randomly assorted in the gametes.



Law of Dominance:

This law states that in a heterozygote (an organism with two different alleles for a particular gene), one allele may be dominant over the other allele, which is said to be recessive. The dominant allele determines the phenotype (observable traits) of the organism, while the recessive allele has no noticeable effect on the phenotype when paired with a dominant allele.



However, recessive alleles can still be passed onto offspring and expressed in future generations if paired with another recessive allele.

These describe the basic principles of inheritance for traits controlled by single genes. While they provide a foundational understanding of genetic inheritance, it's important to note that there are exceptions and complexities to these laws, such as incomplete dominance, codominance, multiple alleles, and gene linkage, which were discovered after Mendel's initial experiments.

(Source-Slides: 202-213)

Mendel specifically chose pea plants for a number of reasons including their availability in various varieties, self-pollination capabilities, short life cycles, ease of cultivation, and distinct characteristics. Mendel focused on studying seven specific traits in pea plants: seed shape, seed color, flower color, pod shape, pod color, flower position, and stem height.

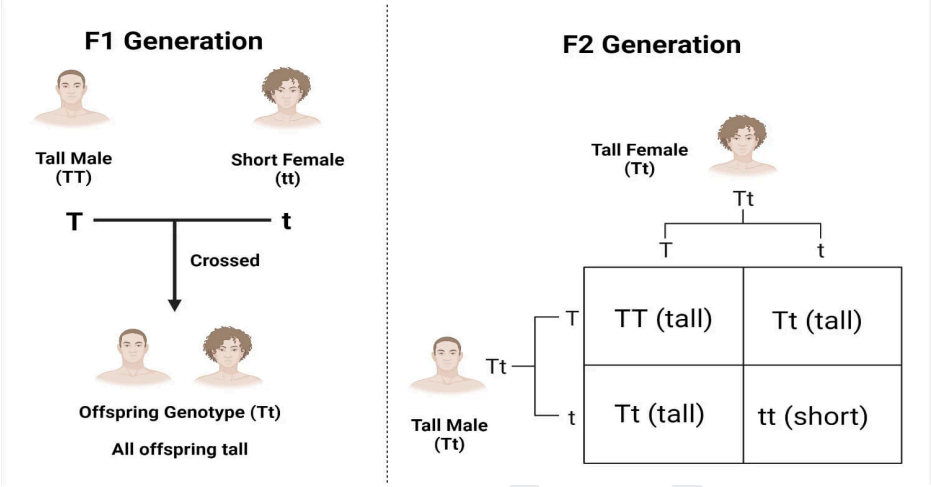
Mendel conducted two main experiments, monohybrid and dihybrid crosses, to determine the laws of inheritance.

Monohybrid Cross

- In the monohybrid cross, Mendel studied the inheritance of a single trait. Mendel conducted crosses between pea plants with different traits of the same character, such as tallness (TT) and dwarfness (tt), and observed their inheritance patterns.
- The parental generation (P) are the organisms involved in the initial cross, while the first filial generation (F1) represents the offspring of this cross.
- In the F1 generation, all the plants showed the dominant trait (tallness), while the

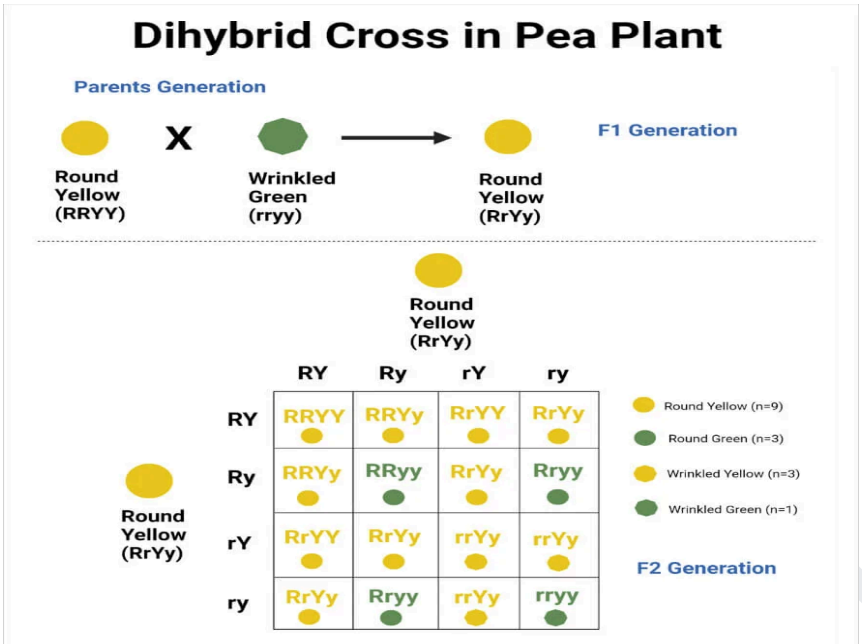
recessive trait (dwarfness) was not present. This pattern of displaying only the dominant trait in the F1 generation was the same across all the traits Mendel studied.

- When the F1 plants were crossed among themselves, resulting in the second filial generation (F2), some offspring showed the recessive trait, which was not observed in the F1 generation. F2 generation exhibited a 3:1 ratio of the dominant and recessive traits.
- Mendel observed and found that this pattern was consistent in all the traits he studied.



Dihybrid Cross

- In the dihybrid cross, Mendel studied the inheritance of two different traits. He crossed purebred parental plants with different traits. For example- plants with yellow, round seeds (YYRR) were crossed with plants with green, wrinkled seeds (yyrr).
- The resulting F1 generation displayed only the dominant traits of yellow and round seeds. In the F2 generation, both parental traits appeared in four types of combination in a phenotypic ratio of approximately 9:3:3:1, showing the independent assortment of the two traits.



Q3. Describe the types and anatomical features of Australopithecines.

Australopithecines represent the first stage of hominid evolution. Australopithecines are ape-like in many respects. They are characterised by small braincases, bi-molar teeth and facial prognathism. Their cranial capacity ranges from 400 to 700 cc. Strongly built supra-orbital bridges, massive jaws, absence of forehead and a number of other features resemble apes.

However, they differ from the apes as they lack projecting canines, downward facing foramen magnum and extended and expanded ilium. Australopithecines include different varieties like Australopithecus Africanus, Australopithecus afarensis, etc.

Australopithecus Africanus:

The first discovery of an australopithecine fossil was made by Raymond Dart ,an Australian anatomy professor in South Africa, in 1924. He discovered a well preserved fossil from the commercial quarries near Taung, South Africa. This fossil was named Australopithecus Africanus. This species is also known as Taung Child or Taung Baby as the fossil was of a child discovered from Taung. Prof. Dart has estimated its cranial capacity as 520cc. This indicates that their brain is larger than that of the chimpanzee.

Based on the position of foramen magnum, the large hole in the skull where the spinal cord enters, Dart claimed that Australopithicus africanus was probably a bi-ped. Since Dart's original find, hundreds of other fossils of Australopithecus have been found, first in South Africa and later in Kenya, Ethiopia and in Tanzania.

As they were discovered, many were given a number of different specific and generic names but all of them were considered a single genus Australopithecine.

Australopithecus Afarensis:

The fossil evidence of Australopithecus afarensis was discovered by Donald Johanson at the Hadar site in the Afar desert region of northern Ethiopia in 1974. Its age was estimated about 3 million to 4 million years ago. The Australopithecus afarensis was an erect, bi-pedal creature. Donald's finding, scientifically designated as Australopithicus Afarensis, became popularly known as Lucy. It had a small cranium (440cc), and large canine teeth. Lucy's skull resembles that of a modern chimpanzee. Lucy was bi-pedal in movement and she was 3.5 to 4 feet tall.

(Source- Slides: 141-147)

Q4. Elaborate on Darwin's theory of evolution.

Darwin presented his theory of evolution in the book 'On the Origin of Species by means of natural selection' in 1859. Darwin argued that new species had evolved from older species and he described the mechanism behind the transformation process.

Darwin's theory of evolution is based on the following five principles:

- Organisms produce more offspring than can possibly survive.
- Organisms face a constant struggle to survive.
- Organisms within a species vary.
- Organisms best suited to their environment survive.

- Those organisms which survive will reproduce and pass on their genes to the next generation.

Over-production:

Many more individuals are born each generation than will be able to survive and reproduce (Influenced by Thomas Malthus provided Darwin with the idea of a struggle for existence).

Struggle for Existence:

Darwin claimed that there was a continual 'struggle for existence' in nature, in which only the fittest would survive. This understanding of Darwin had come partly from his reading of Thomas Malthus's Essay on the Principle of Population. As a result of overproduction, there is a struggle for existence among organisms. According to Darwin, struggle for existence may be of different types as follows:

a. Intraspecific (Intra-species) struggle: The members of the same species struggle among themselves for food, shelter and mates.

b. Inter-specific (Inter-species) struggle: The members from different species may go on fighting for survival.

A member from one species may hunt other members of other species as food. For example, tigers hunt goats and deer, cats hunt rats and so on. According to Darwin, in the animal kingdom, a species often stands as prey to other species, which clearly indicates a struggle for existence.

c. Environmental struggle:
Organisms of different species struggle against the environmental hazards like earthquake, flood, drought etc. Only those species with better adjustment with the environment will survive. Struggle is predominant among the members of the same species as they depend on identical requirements of life.

Variation and Heredity:

Variation is the tendency of an organism to deviate from the parental generation. Darwin observed that variety is a universal phenomenon seen among members of the same species in terms of structure, function, physiology, behaviour etc. There is natural variation among individuals of the same species. Many of the favourable adaptations are hereditary and are passed on to the progeny of future generations. (Darwin, like Lamarck, believed in an incorrect theory of heredity; however, he interpreted the process in the proper context. Darwin himself was not satisfied with his blending theory of inheritance and as early as 1857 he wrote a letter to Huxley for an alternative to it).

Survival of the Fittest:

The struggle for existence, leads to the survival of the fittest. When there are too many organisms in an area, they compete for resources such as food and perhaps shelter, for example trees and caves. Individuals with certain characteristics have a better chance of surviving and reproducing than others with less favorable ones. (This is the concept of the survival of the fittest through favourable adaptations to the conditions of life).

Natural Selection and Modification of Species:

The surviving individuals will give rise to the next generation. The successful variations are transmitted to the succeeding generations. The accumulation of advantageous traits in future generations gradually brings changes in species. Successive generations in this way tend to become better adapted to their environment. Gradual modification of species could have occurred over long periods of geological time through additive processes occurring in the past in the same manner as they are occurring in the present. (Charles Lyell's geological interpretations and concept of uniformitarianism helped in understanding the process of biological evolution).

<u>Examples of Natural Selection:</u>

1. **The finches of Galapagos**

The finches of Galapagos Islands provide an excellent example of natural selection. Some species of finches have short thick beaks. They are used to eating seeds, fruits and buds. Some others have long straight beaks. They subsist primarily on nectar from

flowers. If environmental conditions suddenly change, some characteristics may be more favoured than others.

2. **Industrial melanism in moth**

The changes that occurred in the moth population in different areas of England are the best example for natural selection. Before Industrialisation, the tree trunks were lighter and light coloured moths were predominant. Dark coloured moths were also present but they were limited in number. As a result of industrialisation, the pollution resulted in the darkening of tree trunks. So the light coloured moths became more visible to birds and were therefore eaten by their predators. As a result of this at the end of 19th century the common light coloured moths were almost completely replaced by the black variety.

(Source- Slides 43-53)

Some Criticism of Darwin:

- Inadequate explanation because selection creates nothing. It merely eliminates or preserves already existing variations without indicating their cause.
- He ignored the concept of genes. Individual differences that may give rise to variations affect the reproductive cells little or not at all.
- Could not explain useless or non-adaptive characters or organs nor overspecialised organs such as the huge antlers of the Irish deer.
- Could not account for the degeneracy of certain characters.
- There is doubt about the struggle for existence being as fierce as it had been supposed to be.
- The superiority or inferiority of one individual is apparently not the result of the development of a particular characteristic, but rather of the general capacity of the organism.

Q5. Discuss Race and Racism.

In the absence of standard techniques of measurement and definite knowledge about the racial significance of the various physical traits in humans, various schemes of classifications have been made by different scholars. The most commonly recognised classification is that which include three major races, namely Negroid, Mongoloid and Caucasoid, which are further subdivided into as many as 30 sub-groups.

Negroid races:

Negroid Races are originally found in Africa. They are characterised by brown to black brown skin, very broad and flat nose, low nasal bridge, strong prognathism, brown to black hair, coarse texture of hair, woolly hair, slight body hair, brown to brown black eye etc. The Negroids have been divided into African Negroid and Oceanic Negroid and they are again sub-divided into many other groups.

Mongoloid Race:

Mongoloid races are characterised by yellow brown or reddish brown skin colour, broad and flat face, brown to brown black hair, coarse texture and straight form of hair, brown to dark brown eye, medium stature, broad and flat face with prominent cheekbones. The Mongoloids are again sub-divided into many types namely Central Mongoloid, Northern Mongoloid, Southern Mongoloid, and American Mongoloid. They are mainly found in Asia and America.

Caucasoid Race:

Caucasoid races are found in Europe, Palestine, Iran, Northern India, Balochistan etc. They are characterised by features such as pale reddish white to olive brown skin colour, medium to tall stature, wavy and straight hair, dark brown hair colour, light blue to dark brown eye colour and high nasal bridge. The Caucasoid races are further divided into a number of ethnic groups such as Mediterranean, Nordic and Alpine.

<u>Racism</u>

Even though human beings are classified into different racial groups, we know that no race is superior or inferior to another. But there is some kind of such discrimination. You may recollect the autobiographical account of Gandhiji at the beginning of the first unit about the discrimination he faced on the basis of colour in South Africa. Racism is the

belief that one race is superior to the others and is associated with discriminatory acts and attitudes towards the 'inferior' race. People of a few races consider themselves superior to others.

Background

Probably the idea of racism originated in the fifteenth century, when some Greek scholars divided mankind into two groups - the civilised and the barbarians. The famous Greek philosopher Aristotle also proposed two groups - one group is free by nature and the other which is not free (slaves). In the middle age, different authorities presented their hypothesis of superior races. Thus the concept of superiority versus inferiority was unconsciously nurtured in the mind of people.

From the **biological anthropological** view, racism is a cultural phenomenon that has no genetic basis. All humans of whatever race are currently classified by the anthropologist or biologist as belonging to one species, Homo sapiens sapiens. In other words, it is to say that the differences between human races are not great, even though they may appear so, i.e. black versus white skin.

It is well established that all races of humankind in the world can interbreed because they have so much in common. All races are said to **share 99.99% of the same genetic materials** which means that division of race is largely subjective, and that the original races were also probably mere subjective descriptions and nothing more.

(Source: Slides 235-241)