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Anthropology short notes

Mendelian genetics in man-family study, single factor, multifactor, lethal, sub-lethal and polygenic inheritance in man.

UPSC Civil Services (Main) Examination · Anthropology GS 1 · Anthropology GS 1 (Paper I)

9.2 Mendelian genetics in man-family study, single factor, multifactor, lethal, sub-lethal and polygenic inheritance in man.

Short notes by official syllabus heading.

Revision notes for the Anthropology optional. Confirm thinkers and examples against standard texts and recent papers.

<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/mendelian-genetics-in-man-family-study-single-factor-multifactor-lethal/>

Mendelian Genetics In Man-Family Study

Definition

The Synthetic Theory of Evolution (Neo-Darwinism) is the modern explanation of evolution that integrates Darwin's theory of Natural Selection with Mendelian genetics, population genetics, cytology, molecular biology, and paleontology. It explains evolution as changes in allele (gene) frequencies within populations over generations.

Example / case study

Form bell-shaped curve in population(majority in median range eg height).

Thinkers

Radcliffe-Brown: Used genealogies to reconstruct descent groups and social structure in Africa.
Malinowski: Used them to understand kinship and land inheritance among the Trobriand Islanders.

Definition

ss - Sickle cell anemia(died bcoz of sickle cell)

Example / case study

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Definition

This is a phenomenon where the expression of a gene depends on which parent it was inherited from. Certain genes are "silenced" via DNA methylation during gamete formation.

Example / case study

The ABO blood group system. Alleles (I^A) and (I^B) are codominant. If an individual inherits both, they have blood type AB, expressing both A and B antigens on their red blood cells. Sickle Cell Trait. Individuals with the heterozygous genotype (Ss) produce approximately 65% normal red blood cells and 35% sickled cells, providing them with a biological advantage: partial resistance to malaria. Phenylketonuria (PKU). A mutation on Chromosome 12 leads to an inability to metabolize phenylalanine, which subsequently causes intellectual disability, skin pigmentation loss, and neurological issues. HLA (Human Leukocyte Antigen) genes. On Chromosome 6, genes A, B, and C are linked and almost always inherited as a single unit.

Thinkers

Marriage as Exchange: Lévi-Strauss used the Purum case to argue that kinship is fundamentally a system for the reciprocal exchange of women between groups, which acts as a form of social communication.

Definition

These genes reduce the efficiency or viability of the organism but do not cause death.

Example / case study

FTO gene - body cannot digest food properly; linked to obesity.(T: FTO nahi raheg to mote ho jough, food digest hi nahi hoga) ACE gene - increases risk of hypertension.(ACE ko gussa aayeg ki BP high rhta jo hai) Cause death in more than 50% but less than 100% of affected individuals. Some survive with medical support or favorable environment.

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