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Anthropology short notes

Genetic imprints in human disease, genetic screening, genetic counseling, human DNA profiling, gene mapping and genome study.

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

(d) Genetic imprints in human disease, genetic screening, genetic counseling, human DNA profiling, gene mapping and genome study.

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/genetic-screening-counselling/>

Genetic Imprints In Human Disease

Definition

Medical Genetics: It is the standard method for understanding the inheritance patterns of Mendelian disorders such as Huntington's disease, Sickle-cell anemia, and Thalassemia.

Example / case study

Male fruit flies' Y chromosomes die; females (XX) survive.

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. Claude Lévi-Strauss: Used genealogical/kinship data to develop Alliance Theory, focusing on marriage and exchange between lineages. India: S.C. Roy documented Oraon genealogies; Irawati Karve used genealogical mapping to study village kinship and exogamy in Maharashtra.: Applications of Pedigree Analysis.

Definition

PRADAN: works with govt., promotes SHGs for sustainable livelihoods.

Example / case study

Male fruit flies' Y chromosomes die; females (XX) survive.

Definition

Biological anthropology studies human evolution, heredity, variation and adaptation using scientific methods, while recognising the influence of culture on biology.

Example / case study

Lactase persistence → long-term milk consumption in pastoral populations → selection for lactose tolerance. Thus, biological anthropology connects genetic evolution with culturally created dietary practices. DNA profiling for crime scene investigations. Victim identification during large-scale disasters.

Thinkers

Malinowski: Used them to understand kinship and land inheritance among the Trobriand Islanders. Claude Lévi-Strauss: Used genealogical/kinship data to develop Alliance Theory, focusing on marriage and exchange between lineages. India: S.C. Roy documented Oraon genealogies; Irawati Karve used genealogical mapping to study village kinship and exogamy in Maharashtra.

Definition

DNA profiling for crime scene investigations.

Example / case study

Male fruit flies' Y chromosomes die; females (XX) survive.

Definition

Based on linkage studies and recombination frequency.

Example / case study

Male fruit flies' Y chromosomes die; females (XX) survive. If recombinant frequency = 0.76 → distance = 76 cM.

Definition

DNA profiling for crime scene investigations.

Example / case study

Male fruit flies' Y chromosomes die; females (XX) survive. If recombinant frequency = 0.76 → distance = 76 cM.