

ANTHROPOLOGY MAINS PAPER-I 2024

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Write notes on the following in about 150 words each: (10 × 5 = 50)

1. (a) Attributes of culture

1. Attributes of Culture

Introduction: Tylor's Definition

Attributes: image

Hertskovits Paradoxes too

Case studies: Adaptive- Rappaport-Tsembaga

Significance of understanding culture

3. NATURE OR CHARACTERISTICS OR ATTRIBUTES OF CULTURE

From the definitions, concepts and interpretations as given by the anthropologists for the term culture, the following nature or characteristics or attributes of culture may be noted:

Sr. No.	NATURE OR CHARACTERISTICS OR ATTRIBUTES OF CULTURE	School or Scholar/ Anthropologists
1.	Culture is man-made.	Herkowitz
2.	Culture is learned.	Tylor, Herkovitz
3.	Culture is transmitted.	E.A. Hoebel
4.	Every society has got its own culture.	Boas
5.	Culture is social, not individualistic.	Hoebel
6.	Culture is ideal for the group.	White, Redfield
7.	Culture satisfies human needs.	Malinowski
8.	Culture has adaptability.	Julian Steward, Ratzel, Malinowski
9.	Culture has integrative quality.	Malinowski
10.	Culture shapes human personality.	M. Mead
11.	Culture is both super-individual and super-organic.	Kroeber

- Culture Is Commonly Shared

NEXT IAS

NEXT IAS

1. (b) Harappan maritime trade

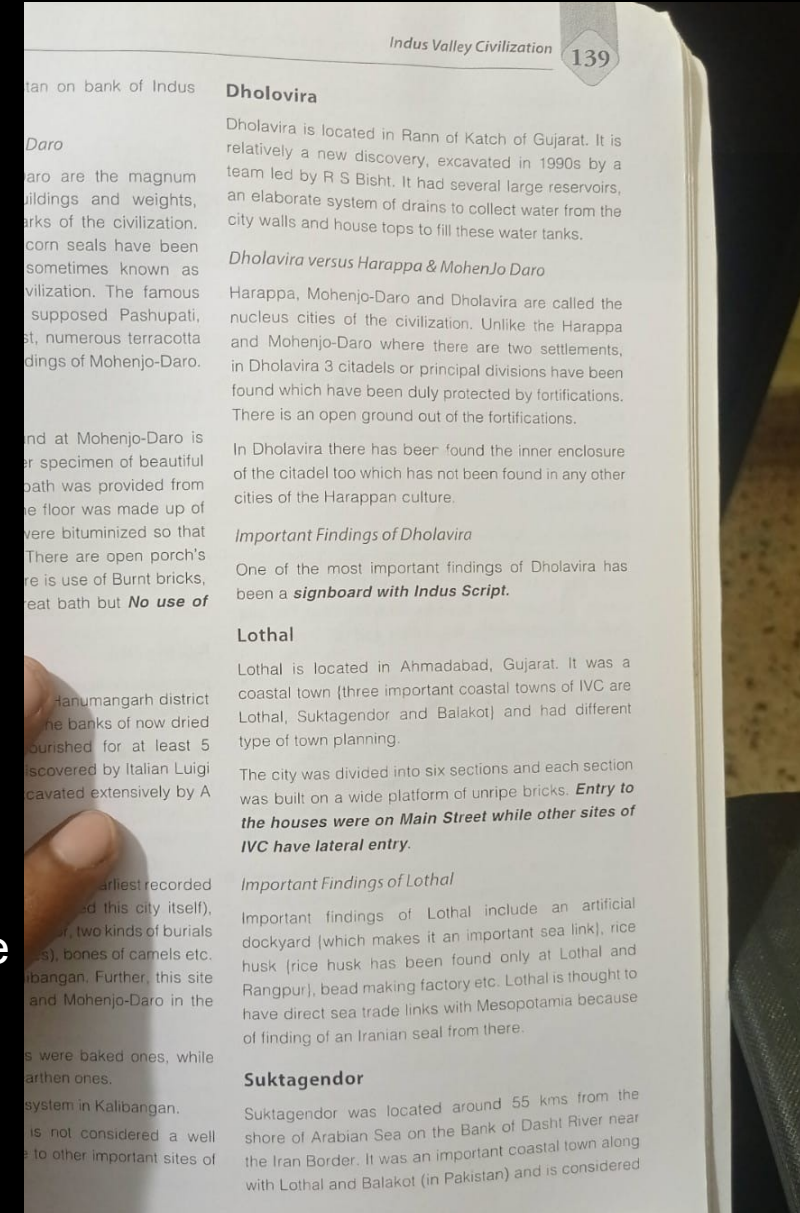
Harappan Maritime Trade

Introduction: Maritime trade is one of the unique characteristics of Harappan civilization, along with its vast geographical spread, urban development, drainage system, developments in science and technology.

Evidence of Trade:

Ports and Dockyards: Harappan sites like- Lothal, Dholavira and Suktagendor as well as the archaeological and literary evidence from Mesopotamia, Oman and Bahrain suggests the existence of maritime trade during those times.

Lothal has a dockyard, Dholavira and Suktagendor were also port towns. There was a possible sea link in between these three.



Presence of foreign goods such as Lapis-lajuli, carnelian etc in Harappan cities as well as the discovery of Harappan seals from Mesopotamia, further strengthen this claim.

Literary evidence from Mesopotamia, where Harappa was termed as “Meluha,” also provide strong evidence.

Trade Route:

Significance of Study:

The study of maritime trade of Harappan not only highlights the developed technologies of the ancient times, but these can inspire the present and future generations about the development of new sustainable technologies. It will also help us to reconstruct the migration patterns of humans, diffusion of cultures from one place to the others, which can help us to understand our present in a better way.



b. A seal and a terracotta amulet from Mohenjo-Daro depict ship with cabin and birds.



NEXT IAS

1. (c) Critical perspective on avoidance and joking relationship.

You can analyse these from various perspectives/theories.

Introduction: Avoidance and joking relations among the Kin groups has been studied by various anthropologists belonging to different schools of thought, such as, evolutionists, psychologists, functionalists, Symbolic as well as postmodernists.

Define both

Give perspective of Evolutionists-Tylor

Psychologists like- Freud

Then Brown

Malinowski

Then culturists- Schneider

Conclusion: Schneider the kinship system and usage are not universal but are cultural systems, so has to be understood in the cultural context.

Types of various kinship usage / behaviour
 There are 6 types of kinship usage identified by anthropologist
 that are -

- ① Avoidance
- ② Joking
- ③ Avunculate
- ④ Emulate
- ⑤ Technonymy
- ⑥ Couvade

① Avoidance -
 Avoidance indicate formality and restriction on intimacy and spontaneous expression of emotions.

Features -

- 1) Can't touch
- 2) Can't look eye to eye.
- 3) Can't eat together.
- 4) Eat ~~one~~ one another's left-out.

Argument by Chapple and Coon. Joking is a mechanism to stimulate social interaction among individuals who may not be able to do otherwise.

Some ex. from Indian tribes.

s.c. boy documented. Grandfather marrying grandaughter among Orissa tribe of C. India

Verrier Elwin studied society Baiga documented grandson marrying grandmother.

→ Ex. levirate - sororate have joking relationship.

Teknonymy Customary behaviour of calling a parent after us or her child. Acc. to Tyler it is a survival of past and it reflects supremacy of women in past society.

Father of Indian ethnology Munda Orissa Khasi Baiga
--

NEXT IAS

1. (d) Lethal and sublethal genes

Define:

Categorize:

Lethal: Recessive and Dominant

Examples:

Significance of Study:

1. Adaptation and Evolution

2. Genetic epidemiology-Disease prevention, e.g. Sickle cell mission, Thalassemia prevention etc.

① Based on the Age or time period of expression

→ These are of 3 types

(a) Absolute lethal

(b) Sub lethal

(c) Semi lethal.

→ Absolute lethal gene causes death before birth itself in the embryonic or fetal stage.

eg:- Mitochondrial diseases that results in frequent abortion.

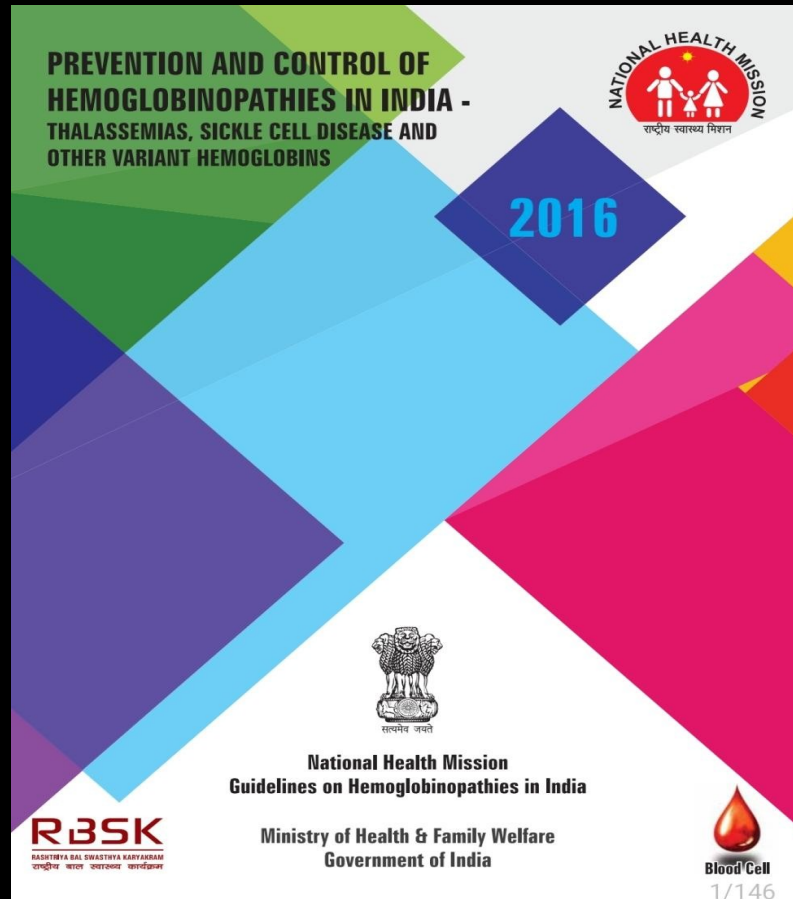
→ Sub lethal gene kill the possessor in early infancy or childhood or before attaining puberty.

eg:- Patau's Syndrome (13th trisome)

Edwards's Syndrome (18th trisome).

NEXT IAS

1. (e) Hemoglobin in health and disease



Haemoglobin

Haemoglobin is a iron containing oxygen carrying protein.

OR

A protein which is responsible for diffusion of gases.

→ Haemoglobin is found in RBC.

Haemoglobin is of 3 types :-

- ① Embryonic Haemoglobin
- ② fetal Haemoglobin
- ③ Adult Haemoglobin

Embryonic Haemoglobin

Embryonic Haemoglobin is found at Embryonic and it disappears by 3rd month of Embryonic stage.



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PREFACE

Haemoglobinopathies especially thalassaemia and sickle cell disease are preventable genetic disorders that in their severe forms are associated with chronic, life-impairing and life-threatening diseases with inherent serious health sequelae that can lead to disability or death. Unfortunately a large number of children in our country continue to be born and suffer from such disorders mainly due to lack of awareness and lack of a comprehensive programme and systematic strategies to prevent them. Data on the prevalence of silent carrier's for various Haemoglobinopathies like β -thalassaemia ranges from 2.9-4.6%, and for sickle cell anaemia especially among the tribal population ranges from 5-40%, while haemoglobin variants like HBE in eastern India can be as common as 3-50%. At times, there could be various permutation and combination among the various Haemoglobinopathies e.g. one parent could be a carrier of Sickle cell disease and the other of β Thalassaemia or one parent carrier of Sickle cell disease and the other haemoglobin variant. Hence the strategy is required for a unified approach.

Considering the magnitude of the problem and the cost implications of management, suitable control measures need to be undertaken urgently. This could be both primary and secondary prevention. Primary being identifying the carriers and avoidance of marriage of carrier couples and secondary by preventing the birth of affected child through prenatal diagnosis.

The comprehensive guidelines on prevention and control with regard to Haemoglobinopathies have been prepared against this backdrop. I am positive that these guidelines will assist and facilitate the states to address the issues concerning Haemoglobinopathies.

(A. K. Panda)

Here the genes for immunoglobulin, T-cell receptors and HLA complex belong to the same family. HLA complex is fixed in an individual and varies from individual to individual.

molecules
cells.

pha 1,2,3
linked with

na 1,2 and

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cells and

and organs

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by Gorer in

Major histo

cell surface

leading to

ely linked to

called MHC.

cell surface

leading to

Hemoglobin (Hb. Level)

Hb is present in RBC of blood.

It has an iron containing porphyrin ring with a protein part called globin.

- Haemoglobin in RBCs combines with Oxygen (O₂) and forms oxyhaemoglobin, then transports O₂ to all parts of body in return takes carbon dioxide (Carboxy hemoglobin) and diffuses it into lungs for exchange.
- Two normal forms of hemoglobin are fetal Hb (Hb F) and adult Hb (HbA).
- Various forms of Hb are:
 - Hb S
 - Hb C
 - Hb E

HbS: The valine replaces glutamic acid at sixth position, which turns RBCs into sickle shape.

closely linked

Chromosome

each A, B,

us number of

groups:

all populations

Livingstone et al have studied the sequence of cultural and environmental changes leading to changes in the frequency of the HbS allele in tropical Africa. HbA/HbS (Heterozygous) individuals resist malaria.

- HbA HbA (Homozygous) suffers from malaria.
- HbS/HbS suffers from sickle cell disease, which is Lethal.
- HbC and HbE are the variants of the Sickle cell mutation and are useful for resisting different types

Hb is an important iron containing Protein of our blood which is responsible for gaseous exchange (or transport of o₂ and co₂)ou.

Hb consists of four protein chains

2 alpha-141 amino acids (chromosome number- 16)

2 beta- 146 amino acids (ch. 11)

Types of Hb:

1. Embryonic- disappear in 3rd month of embryonic life
2. Fetal- replaced by 2 years
3. Adult- 98 percent of adult
4. A2- 2 percent

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PHYSICAL ANTHROPOLOGY

Beta thalassaemia: People whose haemoglobin does not produce enough beta protein. It is found in Mediterranean deserts, such as Italian and Greeks, Arabian peninsula, Iran, Africa, S.China etc.,

- Hb is slightly higher in males(14-16gms) than females (12-14 gms)
- In the inhabitants of high altitudes and in persons of doing exercises the % of Hb rises.
- **Pearson et al (1971) and Owen et al** studied Hb level in Canada found males have more than females.
- Verma (India-1976) studied Great Andamans found 30% are Anaemics.
- Chattopadhyay (1992) studies Oraon tribe.

Blood Enzymes

Blood enzyme polymorphism exists with reference to same blood enzymes which differ from individual to individual.

For Example:

- G6PD: Glucose 6 phosphate dehydrogenase Adenylate Kinase. Pyruvate Kinase etc., **G6PD**

Polymorphism:

Haemoglobin and Health:

The level of Hb in an individual is directly linked to his or her health. The level of Hb in a normal healthy person range according to age, sex as well as ethnic background.

Hb and Disease:

Haemoglobinopathies are the group of disorders which result from abnormalities in the Hb molecule.

It includes:

1. HbS
2. HbE
3. Thalassemias- Alpha and Beta (Major and Minor)

Case studies: Allison Hypothesis

Relevance: Sickle cell mission,

2. (a) Discuss historical particularism as a critical development to the classical evolutionism. (20)

Introduction: Historical Particularism is a school of thought associated with the works of Boas and Kroeber. It emerged in reaction to the ethnocentric and racial idea of Classical Evolutionism.

Historical Particularism posits that every culture is unique and product of its own adaptation to geography and environment in course of its own history.

Historical particularism was critical of the core ideas of classical evolutionism, such as,

1. Equating evolution with progress
2. Providing unilineal and fixed Stages of Culture
3. Using secondary data
4. Use of Comparative method
5. Ignoring diffusion
6. Considering the man of civilization more Intelligent, moral and ethical than savage and barbaric.

H.P.- what alternative methodology it proposed:

1. Relativism
2. Particularism
3. Determinism
4. Method: Historical reconstruction

Criticism: atheoretical (Wissler).

Conclusion: HP laid the foundation of Relativism in anthropological research and practice, that helped anthropology to become an objective, systematic and holistic discipline.

NEXT IAS

2. (b) Describe the evidences of food production and domestication of animals with special reference to Mehrgarh. Throw light on its significance. (15)

Introduction: Mehrgarh is an important Neolithic site of Indian subcontinent located in present day Baluchistan, which provides evidences of transition from hunting and gathering to domestication of plants and animals. This site is important as it is used as an evidence for the indigenous development of Harappan civilization.

Describe Mehrgarh: its findings

Significance:

1. Indigenous development
2. Cultural Transition and technological progress.
3. History of the subcontinent

Individual Sites

MEHRGARH

- It is located on Bolan river in Baluchistan-Pakistan.
- It has 3 cultural phases.

Phase 1: dates back to 7000 - 5500 BC

- It is a pre-pottery Neolithic culture
- inhabited by seminomadic and pastoral groups.

Tools include — polished stone axes, quern (cheki), quirts, microliths, and bone tools.

Subsistence — was on barley, wheat, sheep, goat and cattle (were domesticated)

- These people might have hunted gazel, swamp deer, antelops

Houses: They built mud houses

Subsistence - was on barley, wheat,
sheep, goat and cattle (were
domesticated)

- These people might have hunted
gazel, swamp deer, antelope

Mehargarh's significance

1. It provides earliest evidence of transition from hunting-gathering to animal domestication & agriculture.
2. It gives the evidence about the subsistence habits.

various things
of IVC.

NEXT IAS

2. (c) Critically comment on the lifestyle disease and their impact on human health. (15)

Data lacking

Q. What is health? Is the burden of lifestyle diseases on rise, justify with suitable eg. 2022 Q6(B)

WHO defines health as "a state of complete SOCIAL, PHYSICAL and MENTAL well being and not merely the absence of disease or infirmity."

Health is a multidimensional state which rests on various determinants.

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    graph TD
      A[Health (Determinants)] --> B[Nutrition and Food]
      A --> C[Lifestyle]
      A --> D[Healthcare]
      A --> E[Culture]
      A --> F[Clean water and Sanitation]
      A --> G[Affordability]
      A --> H[Awareness]
  
```

Diabetes

Heart

Data needs to be here

Lifestyle and Health

Good Health depends on biological and social

assignment
question on
lifestyle
disease
from batch
students

The ICMR (Indian Council of Medical Research) and other institutes' research on lifestyle diseases report the increment from 37.09% in 1990 to 61.2% in 2016.

The burden of lifestyle diseases is on rise this can be elaborated as follows:-

1.) Food habits, Western influence:-

larger preference to Junk food over green leafy vegetables has pushed towards multiple cases of disorders like Obesity, Cholesterol deposition etc. \rightarrow Atherosclerosis

2.) Sedentary life style, technological upgradation:-

Technology has made physical activity low, this reduces rate of digestion and healthy circulation,

3.) Body's sitting posture, sleeping posture and time

NEXT IAS

3. (a) What is meant by karyotype? How does its analysis help in diagnosis of the chromosomal aberrations in man? (20)

Karyotyping

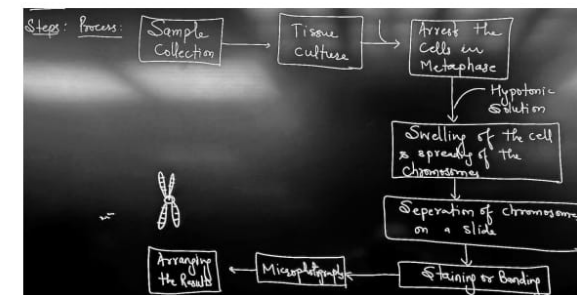
The word karyotypic was derived from Greek word karyon which means nucleus, kernel, seed

Typing means arrangement, organisation

- **Karyotyping** is a process of arranging , pairing & organising chromosomes to find chromosomal variations
- It's used to make a karyotype or ideogram

Involves following **Steps/ process**:

1. Sample collection
2. Tissue culture / cell culture
3. Adding colchicine & Arresting the cells in metaphase
4. Adding hypotonic solution that results in swelling of the cell & spreading of the chromosomes (Osmosis)
5. Separation of chromosomes on a slide
6. Staining or banding of chromosome
7. Microphotographs
8. Arrangement of results



Chromosomal banding:

There were different banding methods for the study of chromosomes such as:

1. **G banding (G = Giemsa):** Most commonly use method In this method chromosomes are treated with Trypsin for the desaturation of protein & then stain with DNA binding dye Giemsa. - This gives each chromosome a characteristic & reproducible pattern of light & dark bands
2. **Q banding (Q = Quinacrine):** In Q banding the chromosomes are treated with trypsin before staining with a florescent DNA binding dye I.e Quinacrine. This method gives a binding pattern similar to Giemsa & require examination of chromosome with an ultraviolet florescent microscope.
3. **C banding (C= Centromeric heterochromatin):** It's a centromeric heterochromatin banding, in this method the chromosomes are treated with alkaline liquid before Giemsa banding. This banding results in staining the heterochromatin regions which contains highly repetitive DNA
4. **R banding (R= Reverse banding):** In R banding the chromosomes are heat denatured before staining the Giemsa which results in reverse banding pattern than Giemsa

Applications of karyotyping:

1. Useful for study of chromosomal defects or chromosomal variations
2. Useful in evolutionary biology to understand the genetic distance between two species
3. Useful in the study of variation in the location of centromere

Conclusion:

- It's a traditional method of studying the structural & numerical variations in the chromosomes
- It can't precisely locate the chromosomal defects of small size, for which advanced methods such as ISH & FISH are used.

- **Application:** Analyzes chromosomal structure and number, helping to identify population-specific chromosomal variations.
- **Example:** Karyotyping has revealed variations in chromosomal structures among different populations, such as the presence of specific chromosomal inversions that confer adaptive advantages.

3. (b) Define urbanization and discuss its impact on family in India with examples. (15)

CHANGES IN THE INSTITUTIONS OF FAMILY

① Impact of Industrialization & Urbanisation on family

The process of Ind & urb have significantly impacted various aspects of family in positive as well as negative manner.

- Industrialization and urbanisation are characterized by costly living, industrial production encouragement of merit and individual achievements, occupational specialisation, waged salarary, employment to both men and women,

Mass media, Anonymity.

we can study the Impact on the following aspects

① Structure:- The Joint Family Structure is Disintegrating into Nuclear structure because of lack of spaces, privacy and high cost of living in urban areas.

② Gender Roles:- There is a significant shift in the gender roles,

- According to "Vinodas" women started demanding more voice in the family affairs

- According to "Katherine Allen", with urbanisation & Industrialization women started getting waged employment and men started participating in

- ⑤ Residence: Raise in Neolocal Residences where Newly wed couple sets up a New house.
- ⑥ Fertility Rate:
- ⑦ Inheritance: The Inheritance patterns are also shifting, Now women also claim their part in the parental property. Hindu succession Amendment Act 2005, provides that a woman can become "Karta" of Hindu undivided family.
- ⑧ Value System: The collective values are weakening as diluting individualistic spirits are going up.
- ⑨ Single parent & Homosexual families: There is increase in single parent families because of increasing in divorces, separation and homosexual marriages as homosexual relations.
- ⑩ Positive impacts:
- ① Increase in freedom of women Economically as well as in choice of mate, education etc
 - ② Increase in Age of Marriage
 - ③ Decrease in fertility.
 - ④ Equality in Inheritance, Authority & Decision Making
 - ⑤ Adoption of progressive ideas

NEXT IAS

3. (c) Discuss the contemporary challenges in fieldwork method in anthropological research. (15)

c. Elucidate the evolution of fieldwork tradition in Indian Anthropology.15

Introduction: Colonial beginning and evolving

Beginning: Colonial ethnographers- Risley, Haddon, Rivers- Todas, Brown-Onges

Indian beginning- British methodology of tribal studies- Iyer- Cochin, Roy- Mundas, Mazumdar

Anthropology - 2025 Optional Batch NEXT IAS

Ethical Dilemmas

1. Confidentiality vs objectivity
2. Interest of the subjects of study or larger public interest
3. Balancing the interest of the funding agency or the academic peers
4. Attachment with the research subjects (Insiderness) vs Detachment (outsiderness)
5. Personal morals vs the morals of the research subjects

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NEXT IAS

NEXT IAS

4. (a) Critical discuss the characteristics of the psychological types in the cultures of the American South-West as observed by Ruth Benedict. (20)

[Ruth Benedict]

1. Born as Ruth Fulton, got name Benedict after marriage with Stanley Benedict — professor of biochemistry.
2. At the age of 33, she started her PhD in anthropology under Boas. She was interested in the psychological aspect of religious practices. Her 1st paper was "Vision in Plain's culture" in 1922.
3. In 1923 got her PhD, her topic of thesis was The concept of guardian spirit in North America.

Theory of Patterns of Culture

1. was given by Ruth Benedict who ^{Configurationalist approach} says that every culture has a unique pattern. This theory was against ethnocentrism.

3. This theory was influenced by Frans Boas, Kroeber, Malinowski. ^{disjunctive approach.} integrative nature, ^{Psycho analysis of Sigmund Freud}

Gestalt psychology.

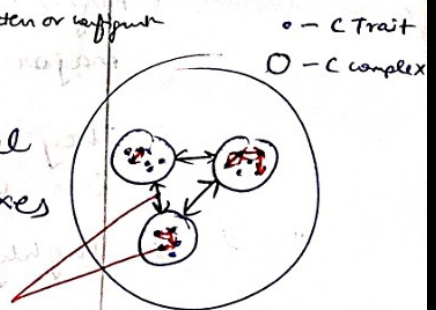
• Behaviour ^{whole is greater than sum.}
 units _{Gestalt.}

4. Main features

1. Culture is an integrated whole. has unique pattern or configuration
2. Culture is made up of cultural traits which organise to form the cultural complexes and these cultural complexes in turn form the entire culture.

Malinowski integrated in

(135) 15.



NEXT IAS

4. (b) Discuss the Acheulian and Oldowan traditions of Indian Paleolithic cultures with suitable illustrations. (15)

f. Indian Paleolithic culture can neither be conceived chronologically homogenous nor as a uniform cultural phase. Discuss. 15

Indian Palaeolithic culture, which spanned several hundred thousand years and covered a

NEXT IAS

4. (c) What is genetic counselling? Briefly discuss various steps involved in it. (15)

Topic associated with
lethal genes,
genetic load,
Pedigree

q.4
d.2

Genetic Screening & Counselling

↓

means screening for genetic disorder/possibility of disease.

Screening can be done on -

1. Patient himself/herself.
2. His/her parents and relatives.
3. A developing fetus

Methods

1. Patient } ^{Fluorescent in situ hybridisation} FISH, ISH method, blood test,
Relatives } karyotyping
3. on fetus - Amniocentesis.
karyotyping
Serum tests for mothers.

Methods involved

- Amniocentesis and karyotyping (foetus)
- Serum test (mother)
- Chorionic villi sampling
- Pedigree analysis
- FISH, ISH

The aim of genetic screening is to identify

- i) the proportion of carriers
- ii) the proportion of affected individuals.
- iii) Genotype of individuals who are affected or are carriers
- iv) probability of occurrence -

It is a very imp tool epidemiology. which is used to calculate the risk of recurrence of a particular disease

Ex. ~~Downs~~ Sickle cell anemia

- Phenyl keto urica

NEXT IAS

Write notes on the following in about 150 words each: (10 × 5 = 50)

5. (a) Chronometric dating

Absolute Dating Method

(Also known as Chronometric method)

- Exact or approximate date of Artifacts or cultural remains or paleontological remains
- These are also known as chronometric methods.

Various methods of Absolute Dating :

- C-14
- K-Ar
- Thermoluminescence
- Uranium lead
- Oxygen 16/18 ratio
- Amino Acid racemization

NEXT IAS

5. (b) Cultural relevance of the Kula

c. “The distinction between reciprocity and redistribution in simple societies is complex and often not clearly marked”. Elucidate. 15

Introduction: Embedded economy- not marked

Define both

Examples showing the distinction is not clearly marked:

- **Kula Ring (Trobriand Islanders):** The Kula exchange system involves the ceremonial exchange of valuable shell necklaces and armbands among the Trobriand Islanders. This system is primarily a form of balanced reciprocity, as participants engage in long-term exchanges with specific partners. However, the Kula also has elements of redistribution, as the exchange reinforces social hierarchies and relationships, with higher-status individuals often playing central roles in organizing and facilitating exchanges.

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NEXT IAS

5. (c) Heritability and its estimation

Heritability:

- Is the statistical measure of the contribution of genes in exclusion to the environment for the development of a particular trait.
- Various methods are used for estimating the **heritability**:-

1. Concordance - Discordance Method	2. Rearing Studies
-------------------------------------	--------------------

08/02/24

Concordance Discordance: It can be used to study of discrete qualitative traits as well as continuous quantitative traits.

1. A traits is concordant when both members of a twin pair possess or are free from a particular trait
 2. A trait is discordant when one member of the pair either posses or lag a trait
- Quantitate trait - The variance can be studied using a mathematical formula i.e $[H = (Vf - Vi) / (Vf)]$; Vf = Within pair variance of Dizygotic Twins; H(heritability); Vi = Within pair variance of Monozygotic Twins

Rearing Studies: Sometimes for some or other reasons the two members of monozygotic pair are separated shortly after birth

Ex: Jim Twins separated after birth and reared apart under different environments, so researchers can have two sets of monozygotic twins: 1 reared apart & other reared together

- The heritability for various traits can be calculated using the formula $[H = (Vi A - Vi T) / (Vi A)]$; Vi A = Reared apart; Vi T = Reared together

Case study: *(Ref sir Telegram Message)

Bouchard & Colleges through their study at university of Minnesota 1990s reported that 70% of variance in IQ in their particular sample of identical twins was found to be associated with genetic variation

Casestudy:

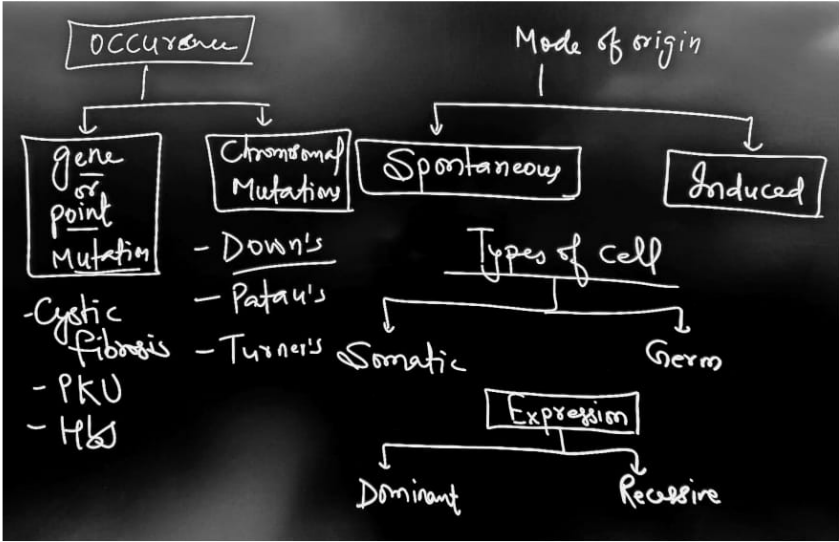
1. **Arnold Gesell** studied the identical twins of 46 week age old neither of whom could climb the stairs. Gesell gave training to one member for 6 weeks, the trained member could climb while other one couldn't. But after one week the other member could also climb
2. **Micheal Schneider** studied Scott & Mark Kelly, Scott was sent to ISS, while Mark was kept under observation on earth; Scott's gene expression was altered in space but most of the changes reversed except on the telomeric Length of the chromosomes

NEXT IAS

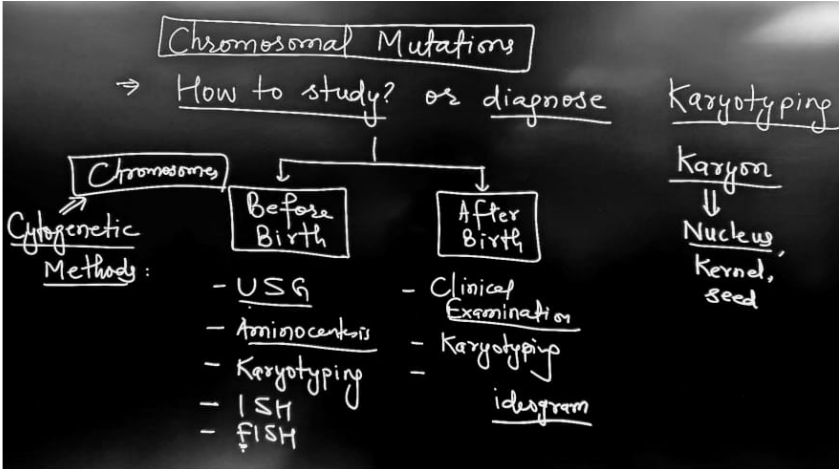
5. (d) Authority and forms of political organization

5. (e) Single-gene mutation disorders in man

Types:



Chromosomal mutations:



NEXT IAS

6. (a) Discuss the geographical distribution of *Homo erectus*. Taking into account its physical features, where does it fit in human evolutionary line? (20)

Q.7

1. "Homo Erectus was too specialised to have been the direct ancestor of Homo Sapiens." Discuss. 20

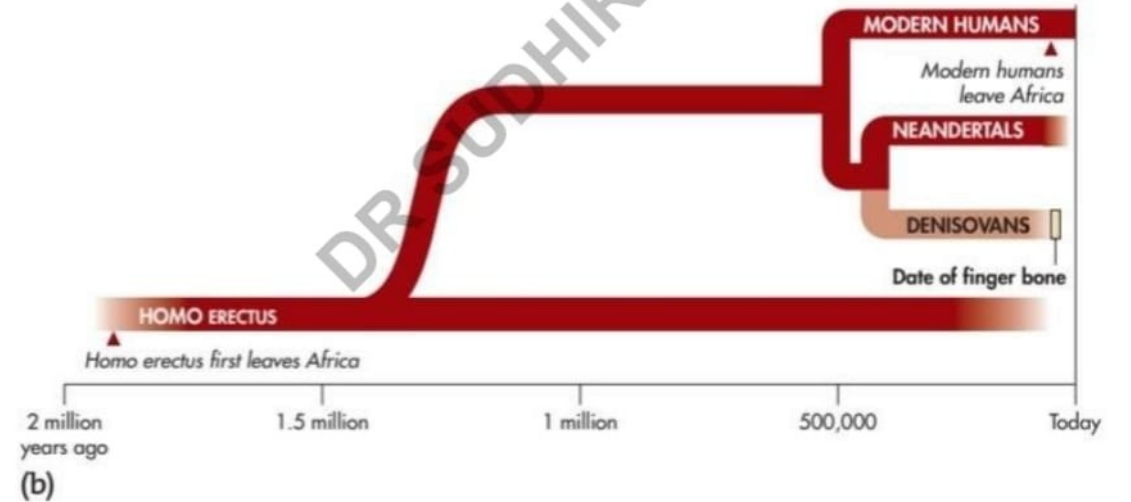
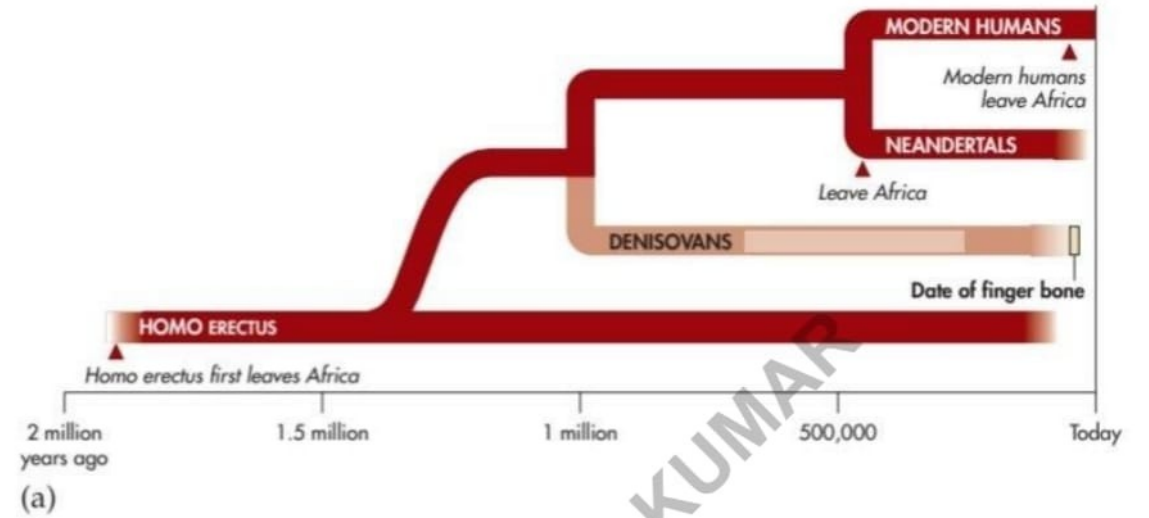


Figure C (a) Initial mtDNA results suggested modern humans and Neandertals were equally distantly related to Denisovans. (b) A more complete genome links Denisovans to Neandertals.

Phylogenetic debate

1. Homo habilis Theory: Leakeys, Napier, Pilbeam- habilis evolved in to erectus
2. Homo ergaster Theory: Australopithecus--> ergaster and erectus was a side branch

The evolutionary relationship between *Homo erectus* and *Homo sapiens* has been a subject of significant debate within paleoanthropology. Louis Leakey, a prominent figure in this field, strongly argued against the view that *Homo erectus* was the direct ancestor of modern humans. Leakey pointed out that African *Homo erectus* populations overlapped in time with more advanced *Homo sapiens*, making it unlikely for *Homo erectus* to be their direct ancestor. This has led to questions about whether *Homo erectus* was too specialized to have given rise to *Homo sapiens*. The complexity of this relationship is further highlighted by varying interpretations of fossil records and evolutionary theories.

Specializations of *Homo Erectus*

Homo erectus also showed many characteristics similar to primates and characteristics are as follows-

NEXT IAS

6. (b) Discuss the applications of forensic anthropology with suitable examples. (15)

Forensic Anthropology:

- Its an interdisciplinary field that involve the expertise of forensic science & anthropology to the question of law
- Forensic science is a use of scientific methods to investigate crimes presented to to be presented in a court of law
- Anthropology is holistic & systematic study of humans
- According to Charles Snow, Forensic anthropology is an application of physical anthropology (The specific knowledge of humans, RACE, age, sex & persons unusual variations) to the medico legal prudence problem
- Forensic anthropology has a wide scope that can be understood from its sub branches 🙌

01/03/2024

Forensic Osteology	Study of Bones for the forensic purpose	It can be useful for the identification of species, age of an individual, sex or “Race”
Forensic Odontology	Its a study of teeth & dental tissues for the forensic purpose	It can be useful to identify to which the teeth or tissue belongs to.
Forensic genetics	It involves the production, comparison & evaluation of DNA profiles	In order to identify the individuals & the relationship between the individuals
Forensic Dermatoglyphics	Its the study of finger, palm, sole or another pattern	
Forensic Medicine	It aims to determine the cause of death	
Forensic Toxicology	It studies the toxins or poisons used in crime / criminal acts for the forensic purpose	
Forensic archaeology	Deals with excavation, recovering the evidences and their identification for the forensic purpose	

Aim of Forensic Anthropology :

1. Personal identification i.e identification of victim or criminal whether living or dead.
 - Living individuals: Photographs 📷, fingerprints, Blood 🩸 , any bodily tissues
 - Dead individuals: 🦴 , 🦷 , 🩸 , tissues, Photographs 📷
2. Forensic anthropology can be useful for facial reconstruction (Ex: Neanderthals)
3. Forensic anthropology aims to establish the cause or time of death
4. Forensic anthropology aims to provide objective, factual evidences

Methods of Forensic anthropology:

1. Mugshot photograph	2. Anthropometric methods	3. Osteological methods	4. Osteometric methods
5. Serological methods for Blood groupings	6. DNA fingerprinting & profiling	7. Radiographing	8. Dermatoglyphics

NEXT IAS

6. (c) How does Levi-Strauss look at the Tsimshian myth of Asdiwal? Critically discuss Levi-Strauss theory of structuralism in the light of his study of mythologies. (15)

(b) How does Claude Lévi-Strauss argue that myths and totemic systems bridge the gap between nature and culture? Illustrate with suitable examples. 15

Answer Structure:

(myth) Story of Aadiwal → documented by F. Boas

↳ "Among Tsimshian Americans of British Columbia"

This is used by Levi Strauss in book Structural Anthropology for the structural analysis.

During the famine of winter, the mother and her daughter both widowed, left their respective villages and met on the banks of Skeena river where they found only a rotten berry than suddenly Hastenas (a bird of good omen) appeared and all three start searching for the food, so that the younger woman birth to a son with Hastenas

Levi Strauss identified 4 levels of representation in this myth.

- Geographic
- Techno-economic
- Sociological
- Cosmological

This myth contains ① sequence of events

② Schemata of myths.

↳ (is the abstraction of sequence of event on which is organised)

He found binary on all those 4 level of representation.

- 1) Geographical → East - west
land - sea
- 2) Cosmological → Heaven - Subterranean
- 3) Sociological → Matrilocal - Patrilocal
- 4) Techno Economic → land hunting → Sea hunting

we can understand myth using the model of language and through this we can understand the mental structures.

- ① Structuralism
- ② Background
- ③ Influences
- ④ salient features
- ⑤ Application
 - Kinship → marriage & family
 - Totem → Nature: culture
Animal: Human
 - Myths → Incest: Incest
Taboo
 - Totem: clan
- ⑥ Methods
 - ① language as a model
 - ② Phenomenology
 - ③ Hermeneutics
- ⑦ Significance :- → universal theory of human thought.
 - gave emphasis on emic perspective
 - gave boost to Cognitive Anthropology

7. (a) Critically explain the notion of 'deconstruction' in the light of the postmodern works of Jacques Derrida. (20)

Jacques Derrida

Devised deconstructionism as a method to understand any text or knowledge without prejudices or bias.

construction of kinship
by [Schneider] ^{part of} PM work
ship exist in this text.

Clifford Geertz - Interpretⁿ of culture ⁽²⁾
ethnographies are like literary texts

Stephen Tyler - Unspeakable

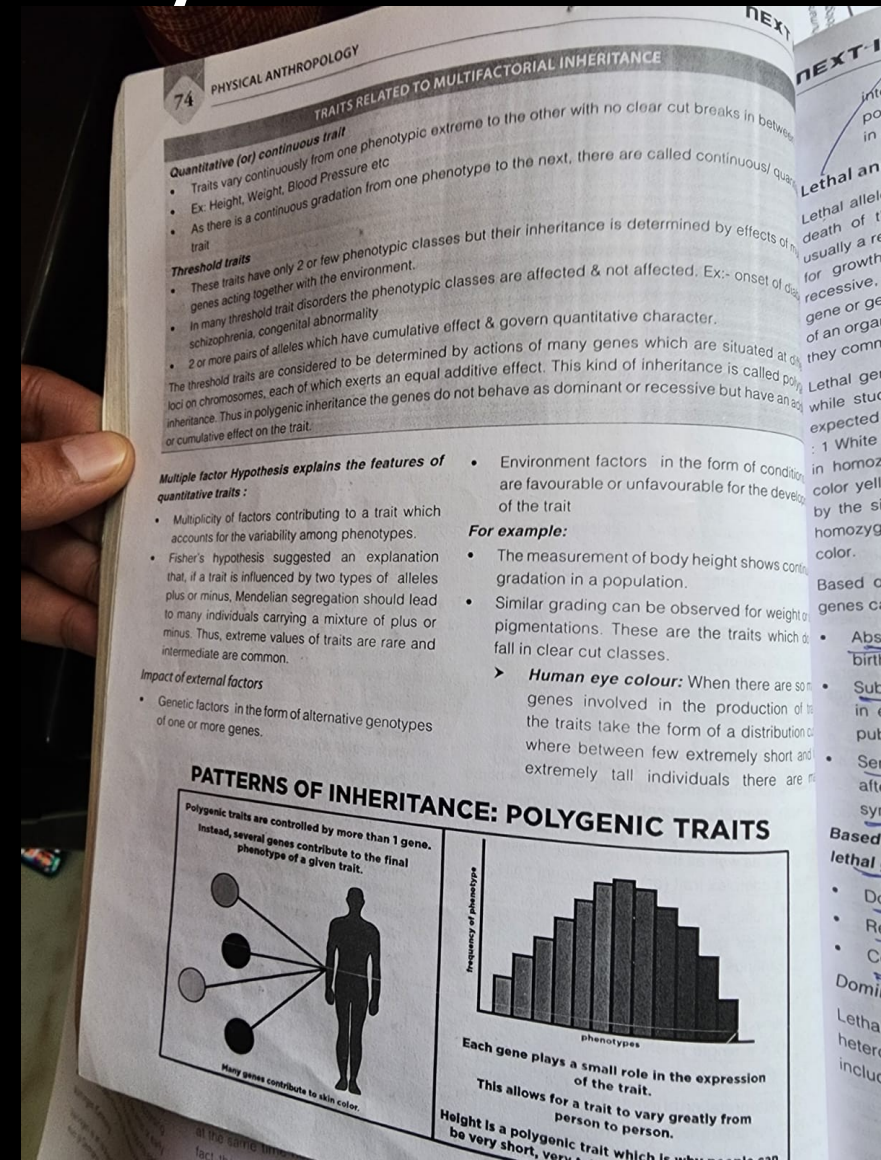
D. Schneider - deconstruction of kinship.

critiques:

- ⑥ PM denies universal truth, but all PM discourse is presented as truth.
- ⑦ As to *Daniel Dennet* PM lead to multiple interpretations of a single phenomena, contributing to confusion, absurdity and inconsistencies.
- ⑧ PM failed to provide a coherent theory of culture.

NEXT IAS

7. (b) What is a multifactorial trait? Illustrate your answer with suitable human examples. (15)



characters do not show clear cut differences unlike in monogenic inheritance patterns. They portray a combination of the character inherited from both parents.

MONOGENIC VS POLYGENIC INHERITANCE	
Monogenic Inheritance	Polygenic Inheritance
Monogenic inheritance is an inheritance pattern which determines a particular trait by one set of alleles or a specific gene.	Polygenic inheritance is an inheritance pattern which determines a particular trait by more than one set of alleles or more than one gene.
Number of Genes Involved	
Only one gene is involved in determining the character in monogenic inheritance.	Two or more genes are involved in determining a single character in polygenic inheritance.
Location of Alleles	
The alleles are located in the same locus.	The alleles of different genes are located in different loci.
Resultant Phenotype	
The resultant phenotype is similar to the dominant parent in monogenic inheritance.	The resultant phenotype is a combination of the dominant phenotypes of both parents in polygenic inheritance. Intermediate forms are common.
Medium	
Monogenic inheritance shows Mendelian inheritance pattern.	Polygenic inheritance shows deviation from Mendelian inheritance (non-mendelian inheritance pattern).
Measuring the Traits	
Traits cannot be measured in monogenic inheritance. Most of them are qualitative traits.	Traits can be quantitatively measured in polygenic inheritance.
Character Variation	
Monogenic inheritance portrays a discontinuous variation of the character.	Polygenic inheritance portrays a continuous variation of the character.

Multifactor Inheritance in Man

In single factor inheritance differences in phenotype results from alternative genotype of a single gene. However many traits in humans are influenced by multiple genes as well as the environment. These traits are known as complex trait (or) multifactorial traits.

Because of multiple genetic & environment factors implicated in their causation, they are said to show complex inheritance.

The inheritance is complex because a single genotype can have many possible phenotypes (depending on environment) & a single phenotype can include many possible genotypes.

Genetic interpretation of inheritance of quantitatively graded characters was suggested by Mendel. He tentatively suggested that perhaps more than one pair of genes were responsible for the observed

variation of colour of the flower when he crossed white and purple red flowering beans.

- The hypothesis of Multifactor inheritance was later proved to be correct by Nilsson Ehle in an analysis in a graded series of seed pigmentation in wheat crosses.
- According to Fisher, "Quantitative traits were not determined by a single gene, but many and their alleles each had small and approximately additive effects."
 - Thus, a phenotype of an individual depends on its genotype at all relevant loci, with each allele adding or subtracting a small amount.
 - Unlike mendelian trait, polygenic traits have a wide range of phenotype expressions that form a graded series.
 - Traits that have these features are called polygenic traits.

abc	
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- 7. (c) Discuss the applicability of various sampling techniques in selecting the study group. (15)**

8. (a) Examine critically the concept of social stratification as a basis for sustaining social inequality. (20)

Various approaches to understand social stratification -

1) Marxist Approach - A/c to Marx the societal stratification is based on material factors, a/c to him nature made everyone equal but a minority gained control over the factors of production hence, society was divided into haves & have-not on different classes. His theory was criticised on many

accounts -

- ① His theory explain only 2 classes ← have
have-not
- ② His theory was based on economic & material factor only
- ③ His theory can not explain Indian caste system

② Weber's Approach - Weber have a multidimensional view of stratification, his approach is also known as functionalist approach because it was based on 3 factors - wealth, status and power.

In any society one may rank high or low on one or two of these dimensions

(b) Hierarchy is the core of caste system

NEXT IAS

8. (b) Describe the genetics and inheritance patterns of the ABO and Rh blood groups in man. (15)

Classification:

100. **Blood Antigens:**

○ **ABO Blood Group System:**

- **Definition:** Based on the presence or absence of antigens (A and B) on the surface of red blood cells.
- **Application:** Critical for blood transfusion compatibility, organ transplantation, and forensic science for identifying individuals.

○ **Rh Factor:**

- **Definition:** The presence or absence of the Rh antigen (D antigen) on red blood cells.
- **Application:** Important for blood transfusions, prenatal care to prevent Rh incompatibility, and forensic identification.

NEXT IAS

8. (c) Critically discuss the synergistic effect of biological and cultural factors in human evolution. (15)

**b. Culture is not itself biological, but rests on certain features of human biology.
Discuss. 15**

37	Long Term Gene-Culture Coevolution
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NEXT IAS

NEXT IAS

Thank You