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UPSC Mains 2015 Anthropology Paper 1

Year-wise PYQ pack · WRAP model answers with canonical links

Official UPSC stems in exam order. Each live answer sits on one WRAP URL; this PDF is the year pack, not a second copy of the article. Open the link under a question for the full page.

<https://wrapexams.com/upsc/mains/anthropology/gs-1/2015/>

Q1(a) · 10 marks

Archaeological Anthropology.

Anthropology GS 1 · 2015 · Archaeological Anthropology.

Revision summary

Archaeological anthropology reads past culture from tools, bone, and settlement.

Foote and Sankalia framed the Indian record.

Dates come from layers and laboratories.

Ethnoarchaeology links living discard to dead sites.

The goal is process, not a museum of objects.

Introduction

Archaeological anthropology studies past human life from material remains. It is anthropology of the dead site, not a treasure hunt for art objects.

Body

Scope

- It recovers tools, hearths, bones, and settlement plans, then reads them as culture and adaptation.
- **Robert Bruce Foote** at Pallavaram opened the Indian palaeolithic. **H. D. Sankalia** made Deccan excavation a teaching method.
- Time is ordered by stratigraphy, typology, and later by radiocarbon and luminescence.

Link to living people

- Ethnoarchaeology, as **Lewis Binford** urged, watches living foragers to interpret kill sites and discard.
- Indian work at **Inamgaon**, **Burzahom**, and **Hunsgi** joins prehistory to food, house, and craft.
- **The aim is process:** how a camp became a village, not a catalogue of pretty pots.

Flow diagram

Material remains -> Stratigraphy dates

Stratigraphy dates -> Past culture

Past culture -> Ethnoarchaeology

Conclusion

Archaeological anthropology is the material wing of anthropology. It reconstructs behaviour from residue and dates, with Indian sites as full partners of world prehistory.

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<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/archaeological-anthropology/>

Q1(b) · 10 marks

Society and Culture.

Anthropology GS 1 · 2015 · The Nature of Society

Revision summary

Society is organised relations of persons.

Culture is Tylor's learned whole of custom and knowledge.

Kroeber stressed culture as superorganic; Radcliffe-Brown stressed structure.

Nuer lineages show society; cattle idiom shows culture.

Keep both in one ethnography.

Introduction

Society is the organised relations among persons. Culture is the learned design for living that those persons share. Anthropology holds the two together.

Body

The pair

- **Radcliffe-Brown** treated society as a structure of statuses. **Tylor** defined culture as knowledge, belief, art, law, and custom acquired as a member of society.
- **Kroeber called culture superorganic: it outlives any one biography.** **Malinowski** showed culture meeting needs inside a living social set.
- A Nuer cattle camp is a society of lineages. The cattle idiom, spear names, and feud rules are culture.

Why split at all

- Society answers who is related to whom. Culture answers what they know and value.
- **Geertz** later read culture as public meaning. Structure without meaning is empty; meaning without organisation will not feed a camp.

Flow diagram

Society relations -> Persons statuses
Culture learned design -> Meaning skill
Persons statuses -> Field case
Meaning skill -> Field case

Conclusion

Society is relation. Culture is learned meaning and skill. Fieldwork must name both, as in Nuer politics and Trobriand garden magic.

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Q1(c) · 10 marks

Incest Taboos.

Anthropology GS 1 · 2015 · Marriage

Revision summary

Incest taboos forbid sex inside a culturally named kin set.

Lévi-Strauss tied the rule to exogamy and alliance.

Westermarck tied it to childhood familiarity.

Genetics adds inbreeding cost but not the cousin map.

Gotra and clan extend the ban beyond the nuclear house.

Introduction

An incest taboo forbids sexual relations inside a named kin circle. The circle varies, but some ban on closest kin is very widespread.

Body

What is forbidden

- Nuclear incest with parent or sibling is nearly universal as a rule, though breach is known.
- **Lévi-Strauss** said the taboo is the start of culture: it forces exogamy and the exchange of spouses.
- **Westermarck** argued childhood proximity kills desire, a view later linked to the **Kibbutz** and Taiwanese sim-pua cases.
- **Freud inverted this: desire is there, and the taboo represses it.** **Malinowski** used Trobriand data to dispute the Oedipus shape.

Biology and law

- Inbreeding risk is real, as genetic counselling still shows. That does not by itself write the local list of forbidden cousins.
- Indian gotra and clan rules extend the taboo far beyond the household.

Flow diagram

Incest taboo -> Exogamy exchange

Incest taboo -> Westermarck familiarity

Incest taboo -> Inbreeding risk

Conclusion

Incest taboos protect a kin boundary and push marriage outward. Alliance theory, familiarity, and genetics each explain a piece, not the whole list.

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Q1(d) · 10 marks

Horticulture.

Anthropology GS 1 · 2015 · Economic Organization

Revision summary

Horticulture uses hand tools and fallow, not the plough as the main engine.

Swidden and mixed gardens are typical.

Trobriand yam gardens show kinship claiming produce.

Boserup tied intensification to population pressure.

It is a skilled ecology, not a failed agriculture.

Introduction

Horticulture is small-plot plant cultivation with hand tools, often with fallow. It sits between foraging and plough agriculture.

Body

Features

- Digging stick, hoe, and axe matter more than the plough and draught animal.
- **Swidden** or slash-and-burn, as in **Northeastern India** and **Melanesia**, uses ash, then long fallow.
- Gardens mix tubers, banana, and pulses. Surplus is modest. Land is often lineage-held, as **Malinowski** showed in Trobriand yam gardens.

Contrast

- **Esther Boserup** treated intensification as a response to population, not a one-way ladder.
- **Sahlins** placed horticulturalists in a domestic mode of production, with kinship claiming the harvest.
- It is not 'primitive farming'. It is a skilled ecology of soil rest and plot rotation.

Flow diagram

Horticulture -> Hoe stick fallow

Horticulture -> Kin tenure

Horticulture -> Swidden jhum

Conclusion

Horticulture is hoe-and-fallow cultivation inside kin tenure. Trobriand yams and Naga jhum are type cases, not failed ploughing.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/horticulture/>

Q1(e) · 10 marks

Historical Particularism.

Anthropology GS 1 · 2015 · Historical particularism (Boas)

Revision summary

Boas treated each culture as a unique historical product.

Unilinear stages of Morgan and Tylor were rejected.

Method was fieldwork, language, and trait history.

Kroeber and Lowie spread culture-area work.

The limit is description without later controlled comparison.

Introduction

Historical particularism, led by **Franz Boas**, said each culture is a unique product of its own history. It rejected one ladder of stages for all peoples.

Body

The claim

- Boas attacked **Morgan** and **Tylor** unilinear evolution as armchair ranking.
- **Fieldwork, language, and museum collections must reconstruct how traits arrived:** invention, diffusion, or independent growth.
- **Kroeber, Lowie**, and **Goldenweiser** carried the method. Culture areas and trait lists replaced world stages.

Limit

- Particularism saved anthropology from racist ladders, but it could stall at endless local lists.
- Later **Steward** ecological evolution and **White** energy evolution answered with limited generalisation, without restoring Morgan's three ages.

Flow diagram

Boas -> Unique culture history
Unique culture history -> Field language museum
Unilinear stages -> Rejected

Conclusion

Historical particularism made culture history local and empirical. It is still the warning against ranking living peoples as leftovers of Europe's past.

Open WRAP page —

<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/historical-particularism/>

Q2(a) · 15 marks

Elucidate the biological and cultural factors in Human Evolution

Anthropology GS 1 · 2015 · Biological and Cultural factors in human evolution.

Revision summary

Bipedalism, brain growth, and long childhood are biological platforms.

Tools, fire, sharing, and language are cultural forces.

Washburn and later gene-culture work treat the loop as two-way.

Hadar, Laetoli, and Olduvai are the teaching fossils and sites.

Lactase persistence shows the loop still at work.

Introduction

Human evolution is a feedback loop. Biology opened new behaviour; culture then selected further biology. Neither side writes the whole story.

Body

Biological factors

- Bipedalism freed the hands, as **Australopithecus** at **Hadar** and **Laetoli** footprints show.
- A larger brain, reduced canine, and longer childhood appear with **Homo habilis** and **Homo erectus**.
- **Endurance walking**, sweat cooling, and a changed birth canal are somatic answers to savanna and later to cooked food, as **Wrangham** argued.

Cultural factors

- Stone tools from **Olduvai** and **Attirampakkam** extend the diet and the home range.
- Fire, shelter, and later language turn learning into a second inheritance, which **Tomasello** calls cumulative culture.
- Food sharing and alloparenting, stressed by **Hrdy**, let big-brained infants survive.

Feedback

- **Washburn** called tools a cause of bipedal refinement, not only a result.
- Gene-culture cases today, such as **lactase persistence**, show the same loop still running.

Flow diagram

Bipedal brain childhood -> Tools fire teaching

Tools fire teaching -> Further selection

Further selection -> Bipedal brain childhood

Conclusion

Biology supplied bipedalism, brain, and delayed growth. Culture supplied tools, fire, and teaching. Human evolution is their joint product.

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Q2(b) · 20 marks

How did Morgan explain the evolution of marriage, family and Socio-Political organization, and how did other evolutionists disagree with his explanation?

Anthropology GS 1 · 2015 · Classical evolutionism (Tylor, Morgan and Frazer)

Revision summary

Morgan sequenced family from promiscuity to monogamy with property.

Socio-political order ran gens to tribe to territorial state.

Savagery-barbarism-civilisation was invention-marked.

McLennan, Maine, Bachofen, and Tylor kept evolution but not his rungs.

Boas and Lowie rejected unilinear necessity.

Introduction

Lewis Henry Morgan, in *Ancient Society*, lined up family and polity on one ladder from savagery to civilisation. Other evolutionists kept the ladder idea but moved the rungs.

Body

Morgan's sequence

- He used Iroquois kinship and classical texts. Kin terms were fossils of older marriage.
- Family ran from promiscuity through **group marriage**, **punaluan**, **pairing**, and **monogamy**, tied to property.
- Polity ran from **gens** (clan) to **phratry**, tribe, and the state of property and territory, as in Rome and Greece.
- **Savagery**, **barbarism**, and **civilisation** were marked by inventions: fire, bow, pottery, agriculture, iron, writing.

Disagreements among evolutionists

- **McLennan** put bride-capture and female infanticide first, and doubted Morgan's group marriage as a real stage.
- **Lubbock** and **Spencer** kept progress but stressed religion or military-industrial types more than gens.
- **Bachofen** had already put mother-right first. Morgan used matriliney as an early gens, which **Maine** patriarchy contradicted.
- **Tylor** shared unilinear culture but worked from animism and survivals, not from Iroquois terms as law.
- **Engels** accepted Morgan and tied the monogamous family to private property. That political use later drew ethnographic fire.

Later evolutionary critique

- **Boas** and **Lowie** showed clans, states, and marriage forms do not travel in one world order.
- **Maine's** status-to-contract still differed: Roman law, not Iroquois, was his engine.
- Field cases of Australian sections and African states broke the single gens-to-state story.

Flow diagram

Morgan Ancient Society -> Family stages

Morgan Ancient Society -> Gens to state

McLennan Maine Tylor -> Other rungs

Boas Lowie -> No one ladder

Conclusion

Morgan joined family, property, and the state on one invention-marked ladder. Fellow evolutionists disputed group marriage, mother-right, and the gens as universal rungs, while Boasians later dropped the ladder.

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Q2(c) · 15 marks

How do diffusionism and evolutionism differ as explanations of Culture Change?

Anthropology GS 1 · 2015 · Historical particularism (Boas)

Revision summary

Evolutionism treats change as internal progress or energy growth.

Diffusionism treats change as movement of traits from a source.

Extreme Egyptocentric diffusion failed.

Boas used cautious diffusion as culture history.

Most real change mixes local development and contact.

Introduction

Evolutionism explains change as internal development along stages. Diffusionism explains change as traits travelling from a centre. They answer different questions about the same pots and myths.

Body

Evolutionism

- **Tylor** and **Morgan** treated culture as progressive. Independent invention could produce similar stages.
- **Change is mainly from within:** new technique, new family, new gods as society grows more complex.
- **White** later measured evolution by energy capture. **Steward** allowed many lines, still developmental.

Diffusionism

- **Graebner** and the **Kulturkreis** school mapped trait complexes moving as packages.
- British **Elliot Smith** and **Perry** overplayed Egypt as the single source of civilisation.
- **American Boas and Kroeber used diffusion without the Egypt story:** a trait has a history of contact.

The difference that matters

- Evolution asks how a form grows in place. Diffusion asks from where it was borrowed.
- **Goldenweiser** limited parallelism. A canoe design may spread; a state may still evolve locally.
- **Good method names both: Childe's** Neolithic spread is diffusion of a package; urbanism also has local take-off.

Flow diagram

Culture change -> Evolution internal stages

Culture change -> Diffusion borrowed traits

Evolution internal stages -> Tylor Morgan White

Diffusion borrowed traits -> Kulturkreis Kroeber

Conclusion

Evolutionism writes change as development. Diffusionism writes it as borrowing. Culture change in the field is usually a mix of the two.

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WRAP Exams

Q3(a) · 15 marks

Define family and critically examine the universality of family

Anthropology GS 1 · 2015 · Family

Revision summary

Family organises sex, filiation, and domestic care.

Murdock claimed the nuclear family as universal.

Nayar taravad, kibbutz, and ghost marriage break that atom.

A childcare group is widespread; the nuclear household is not.

Treat 'the family' as a variable form, not a natural given.

Introduction

A family is a socially recognised group that cares for children and organises sex, descent, and domestic labour. Whether that group is universal depends on how tight the definition is.

Body

Definitions

- **Murdock** called the nuclear family a universal building block: adults of both sexes and their children, with common residence and reproduction.
- **Goody** and later critics said many societies start from a wider kin corporation, not from a isolated couple.

Claims of universality

- Childcare, incest rules, and some durable mating appear very widely.
- **Malinowski's** parental group among Trobrianders still named mother, father, and mother's brother with different duties.

Limits

- **Nayar taravad**, described by **Gough**, had visiting husbands. The residential family was matrilineal, not Murdock's nuclear unit.
- **Israeli kibbutz** and some commune experiments split sleeping, meals, and parenting.
- Same-sex parenting, fostering, and **Nuer** ghost marriage show filiation without a living opposite-sex pair in the house.
- **Collier, Rosaldo, and Yanagisako** argued that 'the family' is an ideological package, not a natural atom.

A usable settlement

- Some domestic arrangement for raising children is universal. Murdock's nuclear form is not.

Flow diagram

Family -> Childcare filiation

Murdock nuclear -> Claimed universal

Nayar kibbutz Nuer -> Limits

Conclusion

Family as childcare and recognised filiation is widespread. The nuclear, co-resident, heterosexual household is historically common, not a human constant, as Nayar and kibbutz cases show.

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WRAP Exams

Q3(b) · 15 marks

How do you relate the concepts of 'Sacred' and 'Profane' in Durkheim's theory of religion with a focus on the role of totem?

Anthropology GS 1 · 2015 · Religion

Revision summary

Sacred and profane are Durkheim's two worlds of ritual marking.

Religion unites a church around sacred things.

The Australian totem stands for the clan.

Ritual effervescence makes society felt as a force.

Lévi-Strauss later added classification; the social reading still holds.

Introduction

Émile Durkheim split the world into sacred and profane. The totem is the emblem that makes the clan visible as a sacred thing.

Body

Sacred and profane

- **Sacred** things are set apart and forbidden, protected by ritual. **Profane** things are the ordinary workaday world.
- The split is social, not a list of gods. A rock becomes sacred when the group marks it.
- Religion is the system of beliefs and practices relative to sacred things, uniting believers into a church.

Totem

- In **The Elementary Forms**, Australian totemism is the simplest case. The totem animal or plant stands for the clan.
- Worship of the totem is worship of society itself. The clan feels a force, which Durkheim called **mana**-like effervescence in the corroboree.
- Taboos keep the totem sacred. Eating rules and designs on churinga objects carry the emblem.

Relation

- Sacred/profane is the grammar. Totem is the noun that names the group.
- **Radcliffe-Brown** kept the social function. **Lévi-Strauss** later said totems classify, they do not only worship society.
- **The teaching point for anthropology remains:** god-talk is also group-talk.

Flow diagram

Religion -> Sacred set apart

Religion -> Profane ordinary

Totem -> Clan emblem

Clan emblem -> Sacred set apart

Conclusion

Durkheim's sacred is the marked, collective side of life; the profane is unmarked routine. The totem is the clan's flag, so totemic religion is society made visible.

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WRAP Exams

Q3(c) · 20 marks

Explain the basic features of 'Postmodernism' in Anthropology

Anthropology GS 1 · 2015 · Post-modernism in anthropology.

Revision summary

Postmodernism treats ethnography as a written, situated account.

Writing Culture named the crisis of representation.

Reflexivity, polyphony, and partial truths are the kit.

Foucault and Said tied knowledge to power and empire.

The limit is paralysis; the gain is honest voice and better ethics.

Introduction

Postmodernism in anthropology is a late-twentieth-century doubt about the omniscient ethnographer. It treats the field text as a made, power-laden account, not a glass window on 'the native'.

Body

Core features

- **Crisis of representation:** after **Clifford** and **Marcus** in Writing Culture, ethnography is writing, with tropes and authority moves.
- **Reflexivity:** the observer's race, gender, and funding belong in the account, as **Rabinow** showed in Morocco.
- **Polyphony:** more than one voice should appear. The monograph should not speak as a single colonial 'we'.
- **Partial truths:** **Clifford Geertz** already called description interpretation. Postmodernists pushed further: no complete culture-out-there.
- **Power/knowledge:** **Foucault's** influence made culture theory watch the state, the clinic, and the museum.

Method and style

- Dialogue, confessional openings, and blurred genres replaced the silent third-person tribe.
- **Crapanzano**, **Tyler**, and **Fischer** experimented with form. **Said's** Orientalism named the imperial archive behind older pictures.

Critique of postmodernism

- **Spiro**, **Sangren**, and many Indian fieldworkers said endless doubt can paralyse comparison and policy.
- **Bourdieu** kept reflexivity without dropping structure. Feminist and Dalit ethnography used the crisis to demand better evidence, not no evidence.
- A fair use is humility about voice, not the claim that villages are only text.

Flow diagram

Postmodern anthropology -> Writing Culture
Postmodern anthropology -> Reflexivity polyphony
Postmodern anthropology -> Power knowledge
Critique -> Evidence still needed

Conclusion

Postmodern anthropology made ethnography confess its making and its power. Its lasting features are reflexivity, partiality, and suspicion of the imperial monograph, not a ban on doing fieldwork.

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Q4(a) · 20 marks

Critically examine the Formalists' and Substantivists' views on the applicability of economic laws in the study of primitive societies

Anthropology GS 1 · 2015 · Religion

Revision summary

Formalists treat maximising choice as universal, even without markets.

Substantivists, after Polanyi, treat reciprocity and redistribution as other economies.

Kula, Nuer cattle, and Tiv spheres block one-money substitution.

The useful settlement is calculation inside instituted process.

Jajmani and potlatch warn against importing firm theory wholesale.

Introduction

The formalist-substantivist debate asks whether scarcity, price, and maximising choice apply to non-market economies. It is a debate about the reach of economic laws, not about whether people are idle.

Body

Formalists

- **Raymond Firth**, **Robbins Burling**, and **Scott Cook** said choice under scarcity is universal.
- A Trobriand gardener still allocates labour and seed. Opportunity cost exists without rupees.
- Formal tools-optimisation, decision trees-can travel if preferences are locally named.

Substantivists

- **Karl Polanyi** said the economy is an instituted process. Reciprocity, redistribution, and market are historical forms.
- **George Dalton** and **Paul Bohannan** showed spheres of exchange: a Tiv brass rod is not a cow and not a wife-wealth good.
- **Malinowski's** kula and **Evans-Pritchard's** Nuer cattle lock prestige goods that a supermarket model would treat as substitutes.
- Applying price theory as if a bush camp were a firm misreads the institution.

Critical settlement

- Formalism is right that people calculate. It is wrong when it treats the market as the only real economy.
- Substantivism is right that institutions embed goods. It is weak if it denies all economising.
- **Sahlins** and **Gudeman** kept embeddedness and still allowed household accounting.
- Indian jajmani, potlatch, and temple redistribution are substantivist cases; labour time on a swidden plot is still a formal allocation.

Flow diagram

Primitive economy -> Formalist choice scarcity

Primitive economy -> Substantivist instituted process

Substantivist instituted process -> Polanyi reciprocity redistribution market

Formalist choice scarcity -> Firth Cook calculation

Conclusion

Economic laws of scarcity apply as a thin logic of choice. They do not apply as a thick law of price in kula, cattle, or caste service. Use formal tools inside substantivist institutions.

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Q4(b) · 10 marks

Explain the difference between emic and etic, and how does the difference derive from the study of language?

Anthropology GS 1 · 2015 · Religion

Revision summary

Pike drew emic/etic from phonemic versus phonetic.

Emic is insider meaning; etic is outsider comparison.

A phoneme is a local contrast; a phonetic chart is a global kit.

Harris and Goodenough split on which side science should privilege.

Fieldwork needs both standpoints.

Introduction

Emic and etic name two standpoints on culture. The words were borrowed from linguistics, from phonemic and phonetic.

Body

The linguistic root

- **Pike** coined the pair. A **phonetic** account lists all sounds. A **phonemic** account lists the sounds that make meaning in one language.
- Hindi speakers hear /p/ and /ph/ as different; some languages do not. That is an emic contrast.

In anthropology

- **Emic** is the insider's meaningful categories: a Nuer ox-name, a Hindu jati rule.
- **Etic** is the observer's comparative grid: calories, lineage diagrams, blood pressure.
- **Harris** used etic for material measurement. **Goodenough** kept emic as the culture the native uses to interpret.

Use

- **Good ethnography needs both:** hear the terms, then compare. Neither is a moral high ground.

Flow diagram

Linguistics -> Phonetic etic
Linguistics -> Phonemic emic
Phonemic emic -> Insider categories
Phonetic etic -> Observer grid

Conclusion

Emic is the inside contrast that matters locally, on the model of the phoneme. Etic is the outside measuring kit, on the model of phonetics.

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Q4(c) · 20 marks

What made Geertz's Interpretive Anthropology distinct from Turner's Symbolic Anthropology? What does each of them mean by the terms 'Symbol' and 'Symbolic'?

Anthropology GS 1 · 2015 · Symbolic and interpretive theories (Turner, Schneider and Geertz)

Revision summary

Geertz treats culture as public text and method as thick description.

For him a symbol carries shared meaning, as in the cockfight.

Turner treats symbols as multivocal forces in Ndembu ritual.

Symbolic process is social drama, liminality, and redress.

Read versus operate is the teaching contrast.

Introduction

Clifford Geertz and Victor Turner both read culture through symbols. They split on where the symbol lives, how it works, and what the ethnographer should write.

Body

Geertz: interpretation as text

- Culture is a web of public meaning. The ethnographer does **thick description**, as in the Balinese cockfight.
- A **symbol** is a vehicle of meaning in public, like words and gestures. **Symbolic** action is the saying of a story the village already shares.
- He drew on **Weber** and literary criticism. The cockfight is a text Balinese read about status, not a hidden psychological code.
- **Distinctive move**: culture as document; method as reading, not social mechanics.

Turner: process and ritual drama

- From **Ndembu** fieldwork, **symbols** are operators in rites of passage. They have **exegetical**, **operational**, and **positional** meaning.
- The **milk tree** is both nurturance and Ndembu matriliney. Symbols are **multivocal** and can store contradiction.
- **Symbolic process is social drama: breach, crisis, redress, as in Schism and Continuity.**
- He drew on **van Gennep** and a more Durkheimian ritual energy. Liminality and *communitas* are what symbols do in time.

The contrast

- Geertz reads a public text of meaning. Turner tracks a ritual process that repairs or splits groups.
- Geertz's symbol signifies. Turner's symbol acts, condenses, and polarises.
- Both reject crude functionalism. Neither treats symbols as mere decoration.

Flow diagram

Geertz -> Thick description text
Geertz -> Symbol as public meaning
Turner -> Ritual social drama
Turner -> Symbol as multivocal operator

Conclusion

Geertz made interpretive anthropology a reading of public meaning. Turner made symbolic anthropology a study of ritual process and multivocal operators. Symbol-as-text and symbol-as-force are the two kits.

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Q5(a) · 10 marks

Palaeolithic culture.

Anthropology GS 1 · 2015 · Paleolithic

Revision summary

The Palaeolithic is the Old Stone Age of chipped tools and foraging.

Lower, Middle, and Upper mark handaxe, flake, and blade kits.

Attirampakkam and Hunsgi are Indian Lower Palaeolithic type areas.

Upper Palaeolithic blades and beads appear at sites such as Patne.

Read it as adaptation to monsoon landscapes, not as one people.

Introduction

Palaeolithic culture is the Old Stone Age of chipped tools, hunting, and gathering. It covers most of human time before farming.

Body

Divisions

- **Lower Palaeolithic handaxes and cleavers: Acheulian** at **Attirampakkam, Hunsgi, and Isampur**.
- **Middle Palaeolithic** prepared cores and flakes, often on chert, as in central Indian river gravels.
- **Upper Palaeolithic** blades, bone tools, and art in Europe; Indian blades at **Renigunta** and **Patne**, with ostrich-eggshell beads.

Way of life

- **Foote, de Terra**, and later **Misra** and **Paddayya** mapped Indian sequences onto monsoon rivers, not Alpine ice alone.
- Fire, mobility, and small bands are inferred from hearths, kill sites, and tool workshops.
- It is a culture of adaptation, not a single tribe named 'Palaeolithic man'.

Flow diagram

Palaeolithic -> Lower Acheulian

Palaeolithic -> Middle flakes

Palaeolithic -> Upper blades

Conclusion

Palaeolithic culture is the long chipped-stone foraging world. Indian Acheulian and blade sites sit in that world without copying Europe's cave-art climax.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/palaeolithic-culture/>

Q5(b) · 10 marks

Down's Syndrome.

Anthropology GS 1 · 2015 · Autosomal aberrations

Revision summary

Down's syndrome is usually trisomy 21 from meiotic non-disjunction.

Lejeune linked the phenotype to the extra chromosome.

Translocation and mosaic forms exist.

Maternal age raises risk of the common form.

Counselling uses karyotype; racial labels are obsolete.

Introduction

Down's syndrome is a chromosomal condition, usually trisomy 21. Anthropology meets it in human genetics, growth, and counselling.

Body

Cause

- **John Langdon Down** described the phenotype. **Lejeune** showed an extra chromosome 21.
- Most cases are **non-disjunction** in meiosis, risk rising with maternal age.
- **Translocation** Down's can be inherited from a balanced carrier. **Mosaics** are milder in some tissues.

Features and care

- Hypotonia, a flat facial profile, single palmar crease, and a risk of heart defects are common.
- It is not a 'race type'. Older racial labels were a scientific error.
- Genetic counselling uses karyotype, and now NIPT, without treating the child as a social rank.

Flow diagram

Down syndrome -> Trisomy 21
Down syndrome -> Translocation
Down syndrome -> Mosaic
Trisomy 21 -> Meiotic nondisjunction

Conclusion

Down's syndrome is trisomy 21 in most cases. The anthropological task is accurate cytogenetics and humane counselling, not a racial cartoon.

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Q5(c) · 10 marks

Longitudinal method of studying growth.

Anthropology GS 1 · 2015 · Distinction between technique, method and methodology

Revision summary

Longitudinal method repeats measures on the same children.

It reveals tempo and peak height velocity.

Tanner's Harpenden study is the classic.

Cross-sections are cheaper but mix early and late maturers.

Dropout and secular change are the main limits.

Introduction

A longitudinal growth study measures the same children again and again. It is the method that can see tempo, not only size.

Body

How it works

- Height, weight, and skeletal age are taken at fixed intervals on one cohort.
- **Tanner** at Harpenden showed spurts, peak height velocity, and individual tempo that a one-time survey misses.
- Indian series, such as work associated with **ICMR** and university auxology units, used mixed-longitudinal designs when pure follow-up was costly.

Contrast and limit

- **Cross-sectional** studies are cheaper and map a population at one date. They smear early and late maturers together.
- Longitudinal work suffers dropout, secular change during the study, and ethics of repeated X-rays.
- The method is gold for velocity curves; it is poor as a quick census.

Flow diagram

Longitudinal -> Same child over time
Same child over time -> Velocity spurt
Cross-section -> Size at one date

Conclusion

Longitudinal growth study follows persons through time. Tanner-style velocity is its yield; cost and attrition are its price.

Open WRAP page —

<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/longitudinal-method-of-studying-growth/>

Q5(d) · 10 marks

Menopause and its impact.

Anthropology GS 1 · 2015 · Relevance of menarche, menopause and other bioevents to fertility. Fertility patterns and differentials.

Revision summary

Menopause is the permanent end of menses after follicular depletion.

Oestrogen fall drives flush, bone, and some heart risk.

Hawkes's grandmother hypothesis reads long post-reproductive life as adaptive.

Social impact includes household role and care work.

Treat complications, not the event itself as a disease.

Introduction

Menopause is the lasting end of menstruation, usually near fifty years. It is a human life-history event with somatic and social impact.

Body

Biology

- Ovarian follicles are depleted. Oestrogen falls. Cycles stop after twelve months without menses.
- Hot flushes, bone loss, and a rise in some cardiovascular risk follow in many women.
- **Grandmother hypothesis** work by **Hawkes** treats post-reproductive life as an evolved helping stage, not a defect.

Impact

- In India, menopause can shift household rank, diet taboos, and labour, as medical-anthropology studies of midlife show.
- HRT is a clinical option with trade-offs. Anthropology also records herbal and kin support.
- It is not a disease by definition. Pathology is osteoporosis, depression, or untreated bleeding, not the fact of stopping.

Flow diagram

Menopause -> Oestrogen fall

Oestrogen fall -> Bone flush heart

Menopause -> Grandmother helping

Conclusion

Menopause ends fertility and changes the endocrine profile. Impact is bone, heart, mood, and household role, with grandmothering as an evolutionary reading.

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<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/menopause-and-its-impact/>

Q5(e) · 10 marks

DNA technology in Medicine.

Anthropology GS 1 · 2015 · Applications of Anthropology

Revision summary

PCR and sequencing find disease variants and guide some cancer care.

NIPT and karyotype serve prenatal and chromosomal medicine.

Recombinant insulin shows DNA as a factory, not only a test.

Databases can misread Indian alleles if they are Europe-heavy.

Ethics of consent and discrimination travel with the kit.

Introduction

DNA technology in medicine uses the genome to diagnose, predict, and sometimes treat. Anthropology meets it in counselling, forensics, and population diversity.

Body

Tools

- **PCR**, Sanger, and now NGS find pathogenic variants in **thalassaemia**, **cystic fibrosis**, and cancers.
- **Karyotype** and **FISH** still catch aneuploidy. **NIPT** screens fetal DNA in maternal blood.
- **Recombinant** insulin and vaccines are DNA-industry medicines, not only tests.

Limits and ethics

- A variant is not always a disease. Penetrance and ancestry bias in databases matter for Indian patients.
- **HeLa** history and later **GINA**-style debates show consent and discrimination risks.
- Gene therapy is real for a few disorders; it is not a general cure.

Flow diagram

DNA technology technology -> Diagnosis NGS PCR

DNA technology -> Recombinant drugs

DNA technology -> Consent ancestry bias

Conclusion

DNA technology diagnoses Mendelian disease, screens fetuses, and makes some drugs. Medicine still needs phenotype, consent, and local allele files.

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<https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/dna-technology-in-medicine/>

Q6(a) · 20 marks

Describe the salient characteristics and geographical distribution of *Homo erectus*

Anthropology GS 1 · 2015 · *Homo erectus*

Revision summary

Erectus has a long low skull, torus, thick bone, and a larger brain than *habilis*.

Nariokotome shows modern-like limb proportions.

Range runs Africa, Dmanisi, Java, and China.

Acheulian is typical in the west; East Asia often lacks classic bifaces.

Narmada is the main Indian cranial candidate; tools are more widespread.

Introduction

Homo erectus is the first hominin with a truly wide **Old World range**. It is a long-lived species of bigger brain, stout bone, and Acheulian tools.

Body

Salient characteristics

- Cranial capacity commonly about 800-1100 cc, above *habilis*, below later sapiens.
- A long, low vault, **supraorbital torus**, sagittal keeling in some Asian skulls, and a nuchal torus.
- Thick cranial bone, large face, and no chin. Postcrania, as in **Nariokotome** boy, show long legs and committed bipedalism.
- Reduced sexual canine contrast. Some specimens keep a robust body built for endurance walking.
- **Culture: Acheulian** handaxes in Africa and western Eurasia; East Asian assemblages often lack classic bifaces, a pattern still debated.
- Fire and home-base claims, as at **Zhoukoudian** and **Gesher Benot Ya'aqov**, are uneven but part of the species' behavioural file.

Geographical distribution

- **Africa: Koobi Fora, Olduvai** (OH 9), **Nariokotome** (West Turkana), **Bouri**. African fossils are often labelled **H. ergaster** by splitters.
- **Georgia: Dmanisi** small-brained early emigrants, sometimes given their own names.
- **Java: Trinil, Sangiran, Ngandong**, Dubois's founding *pithecanthropus*.
- **China: Zhoukoudian** (Peking Man), **Lantian, Nanjing**.
- **Europe: Atapuerca** and **Ceprano** sit near the *erectus*-*heidelbergensis* border.
- **India: the Narmada** (Hathnora) calvaria is often read as late *erectus* or archaic sapiens; Acheulian landscapes imply the grade even where bone is rare.

Time

- Roughly 1.8 million to a few hundred thousand years, later in Java. It is a grade with regional faces, not a single village.

Flow diagram

Homo erectus -> Africa ergaster
Homo erectus -> Java Zhoukoudian
Homo erectus -> Dmanisi
Homo erectus -> Acheulian walking fire

Conclusion

Homo erectus combined a keeled, torused skull, large body, and Acheulian or flake kits. It ranged from East Africa through Dmanisi to Java and China, with Indian bone still thin but the tool map wide.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/describe-the-salient-characteristics-and-geographical-distribution-of-homo-erectus/>

Q6(b) · 15 marks

Critically examine Darwin's theory of evolution in understanding evolution

Anthropology GS 1 · 2015 · Theories of Organic Evolution (Pre-Darwinian, Darwinian and Post-Darwinian).

Revision summary

Darwin proposed natural and sexual selection and common descent.

He lacked Mendelian heredity.

The modern synthesis joined selection to genes.

Drift, punctuation, and evo-devo extend the theory.

Social Darwinism is a misuse, not a test of the biology.

Introduction

Darwin's theory of evolution by natural selection still organises biology. It is necessary, and it is not the whole modern kit.

Body

What Darwin got right

- **Origin of Species** (1859) argued descent with modification. Variation is heritable; more are born than live; the fitter leave more offspring.
- Sexual selection, in **The Descent of Man**, explained ornaments that natural selection alone strains to justify.
- The human animal was placed in the same process, against special creation.

Limits in Darwin's own text

- He lacked a correct heredity. Blending inheritance would wash out variation. **Mendel**, recovered in 1900, saved the theory.
- He knew little of genes, drift, or development. **Wallace** shared selection but not always sexual selection.

Later critical development

- The **modern synthesis** of **Fisher**, **Haldane**, **Wright**, and **Dobzhansky** joined selection to population genetics.
- **Gould** and **Eldredge** added punctuated patterns in fossils. **Kimura** added neutral drift at the molecular level.
- **Epigenetics** and **evo-devo** refine, they do not scrap, selection.
- Social Darwinism was a political misuse, not Darwin's field method.

Flow diagram

Darwin selection -> Mendel genes
Mendel genes -> Modern synthesis
Modern synthesis -> Drift evo-devo

Conclusion

Darwin explained adaptation by selection and common descent. Understanding evolution today still starts there, then adds Mendel, drift, development, and a careful fossil clock.

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WRAP Exams

Q6(c) · 15 marks

Discuss chromosomal aberrations in man illustrating with examples

Anthropology GS 1 · 2015 · Numerical and structural aberrations (disorders).

Revision summary

Numerical aberrations are aneuploidies from non-disjunction.

Down, Edwards, Patau, Turner, and Klinefelter are type cases.

Structural changes include deletion, inversion, and translocation.

Familial Down's may follow a Robertsonian 14;21.

Microarray and FISH extend the old karyotype.

Introduction

Chromosomal aberrations are changes in chromosome number or structure. They are a major class of human genetic disease and of counselling cases.

Body

Numerical

- **Aneuploidy from non-disjunction: trisomy 21** (Down), **trisomy 18** (Edwards), **trisomy 13** (Patau).
- **Sex chromosomes: XO Turner, XXY Klinefelter, XYY, and XXX.**
- **Polyploidy** is rare in liveborn humans and usually lethal.

Structural

- **Deletion: cri-du-chat** (5p).
- **Duplication** and **inversion** may be balanced in a parent and unbalanced in a child.
- **Translocation:** Robertsonian 14;21 can cause familial Down's. Reciprocal translocations appear in recurrent miscarriage.
- **Isochromosome** and **ring** chromosomes are rarer teaching types.

Detection and meaning

- Karyotype, **FISH**, and now chromosomal microarray catch what light microscopy misses.
- Mosaics, as in some Turner and Down cases, blunt the textbook phenotype.
- Anthropology uses these examples to teach that 'type' is cytogenetic, not a racial grade.

Flow diagram

Chromosomal aberration -> Numerical aneuploidy

Chromosomal aberration -> Structural deletion translocation

Numerical aneuploidy -> Down Turner Klinefelter

Structural deletion translocation -> Cri-du-chat Robertsonian

Conclusion

Human chromosomal aberrations are numerical or structural. Down, Turner, Klinefelter, cri-du-chat, and Robertsonian translocation are the standard illustrations.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/discuss-chromosomal-aberrations-in-man-illustrating-with-examples/>

WRAP Exams

Q7(a) · 20 marks

What is an anthropometric somatotype? Describe Heath and Carter's method of somatotyping

Anthropology GS 1 · 2015 · Ageing and senescence. Theories and observations

Revision summary

Somatotype rates roundness, muscularity, and linearity.

Sheldon began with photos; Heath and Carter used anthropometry.

Skinfolds feed endomorphy; bone and girth feed mesomorphy; ponderal index feeds ectomorphy.

Scores are written as three numbers on a somatochart.

Use it for sport and growth, not for temperament.

Introduction

An anthropometric somatotype is a three-number rating of physique from body measurements. Heath and Carter made Sheldon's idea operational without photographs as the main tool.

Body

Somatotype as an idea

- **Sheldon** scored **endomorphism** (roundness), **mesomorphism** (musculo-skeletal robustness), and **ectomorphism** (linearity) from photos.
- The method was criticised as subjective and politically misused. Sport and growth studies still needed a body-shape index.

Heath-Carter method

- **Barbara Heath** and **J. E. L. Carter** published equations using **height, weight, skinfolds** (triceps, subscapular, supraspinale, medial calf), **biepicondylar humerus and femur**, and **flexed arm and calf girths** corrected for skinfold.
- Endomorphy comes mainly from the three skinfolds, adjusted for height.
- Mesomorphy uses bone breadths and corrected girths against height.
- Ectomorphy uses the **ponderal index** (height over cube root of weight).
- The result is written as **X-Y-Z**, for example 2-5-3, and plotted on a **somatochart**.

Use and critique

- Sports anthropology in India uses it to compare throwers, distance runners, and controls.
- It is a phenotype now, not a temperament. Sheldon's psychiatric claims are dropped.
- **Limits:** operator error on skinfolds, age and fat change, and the fact that a number is not a destiny.

Flow diagram

Sheldon photo types -> Heath Carter measures
Heath Carter measures -> Endomorphy folds
Heath Carter measures -> Mesomorphy bone girth
Heath Carter measures -> Ectomorphy ponderal

Conclusion

Heath-Carter somatotype is a measured endomorphy-mesomorphy-ectomorphy triad. It replaced photo-guessing with girth, bone, fold, and ponderal index, and it belongs in kinanthropometry, not in characterology.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/what-is-an-anthropometric-somatotype-describe-heath-and-carters-method-of-somatotyping/>

Q7(b) · 15 marks

Critically examine the physiological responses and acclimatization to cold climate in Man

Anthropology GS 1 · 2015 · Concepts and methods of Ecological Anthropology: Bio-cultural Adaptations

Revision summary

Immediate cold defence is skin constriction and shivering.

Finger hunting reaction rewarms digits at a cost.

Acclimatization can raise heat production and habituation.

Bergmann and Allen rules are population trends.

Technology and diet do most of the work in polar life.

Introduction

Cold stress threatens core temperature. Human answers are immediate physiology, slower acclimatization, and culture. Biology alone is a thin coat.

Body

Immediate responses

- **Vasoconstriction** in the skin saves heat. **Shivering** raises metabolic rate.
- **Cold-induced vasodilation** in fingers, the **Lewis hunting reaction**, periodically rewarms digits at a heat cost.
- Clothing, fire, and shelter cut the load before physiology is tested.

Acclimatization

- Repeated exposure can raise metabolic heat, as in some **Inuit** and high-latitude studies, and improve finger blood flow.
- **Habituation** may blunt shivering and pain, which is useful and also risky.
- **Bergmann** and **Allen** rules describe stockier, shorter-limbed trends in cold climates; they are statistical, not a uniform Indian or European type.

Critique

- **Inuit**, **Sami**, and **Tierra del Fuego** peoples succeed with technology and diet as much as with brown fat.
- Laboratory cold tests on students do not equal polar seasons.
- Hypothermia and frostbite remain when culture fails. There is no Darwinian guarantee.

Flow diagram

Cold -> Vasoconstriction shiver

Cold -> Metabolic vascular acclimatization

Cold -> Clothes fire diet

Conclusion

Cold responses are constriction, shivering, and some metabolic and vascular acclimatization. Culture is the main human adaptation; body-size rules are tendencies, not uniforms.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/critically-examine-the-physiological-responses-and-acclimatization-to-cold-climate-in-man/>

WRAP Exams

Q7(c) · 15 marks

Elucidate the role of Anthropology in selection and monitoring of sports persons

Anthropology GS 1 · 2015 · Applications of Anthropology

Revision summary

Sport anthropology uses somatotype and proportions for event matching.

Maturity status prevents false selection of early developers.

Monitoring is serial fat, muscle, and health, not one talent test.

Population averages are clues, not caste or race tickets.

Ethics bar eugenic and dermatoglyphic shortcuts.

Introduction

Kinanthropometry is anthropology applied to sport. It helps select and monitor athletes by body, growth, and population variation, not by folklore about 'born types'.

Body

Selection

- **Heath-Carter somatotype**, limb lengths, sitting height, and lung volumes differ by event: throwers versus marathoners.
- **Tanner** maturity status stops the error of picking an early-maturing twelve-year-old as a finished champion.
- Ancestry averages are starting clues, not quotas. **Nilotic** long limbs and **Andean** chests are population notes, not destiny for one child.

Monitoring

- Serial anthropometry tracks fat, muscle, and hydration in camp. Sudden weight loss flags harm.
- **Dermatoglyphics** and crude racial typing have little predictive value and should not drive selection.
- **Injury risk, female athlete triad, and heat strain are biocultural:** training plus food plus gender norms.

Ethics

- Anthropology's role is measurement and caution against eugenic sport science.
- The SAI and university labs in India use this kit when they stay with evidence.

Flow diagram

Kinanthropometry -> Event match body

Kinanthropometry -> Serial fat muscle

Kinanthropometry -> No racial destiny

Conclusion

Anthropology supplies somatotype, growth tempo, and population context for sport. It selects and monitors bodies in time, and it must refuse racial destiny talk.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/elucidate-the-role-of-anthropology-in-selection-and-monitoring-of-sports-persons/>

WRAP Exams

Q8(a) · 20 marks

Forensic Science can help in criminal investigations. Discuss

Anthropology GS 1 · 2015 · Applications of Anthropology

Revision summary

Forensic science links person, object, and scene for the court.

Fingerprints and STR DNA are leading identifiers.

Skeletal anthropology estimates the biological profile and trauma.

Locard's exchange guides trace evidence.

Error comes from contamination and overclaim; procedure matters.

Introduction

Forensic science applies laboratory and field methods to legal questions. In crime work it links person, object, and scene with a chain of custody.

Body

Identity of persons

- **Fingerprints** after **Galton** and Indian police practice remain a first-line individualiser.
- **DNA** STR profiles, as in the UK **FSS** model and Indian **CDFDs**, can include or exclude with high power if samples are clean.
- **Forensic anthropology** estimates age, sex, stature, and ancestry from bone, and trauma from cut marks, as in mass-disaster DVI.

Scene and object

- **Ballistics, fibres, glass, and paint use Locard's exchange:** contact leaves a trace.
- Toxicology names poisons. Questioned documents and digital logs widen the file.
- Odontology and bite marks are used with more caution after wrongful-conviction reviews.

Anthropology's slice

- **T. Dale Stewart** and later **Clyde Snow** showed skeletal ID in war-crime and disaster settings.
- Indian cases use **forensic medicine** departments plus anthropology for unknown remains.

Limits

- Contamination, planted evidence, and oversold 'unique' marks have caused error.
- Science helps investigation. Courts still need corroboration and lawful procedure.

Flow diagram

Forensic science -> Prints DNA bone

Forensic science -> Trace Locard

Forensic science -> Chain of custody error

Conclusion

Forensic science helps by identifying people and tracing contact at the scene. DNA, prints, and bones are strong when chain of custody holds; they are not a substitute for the whole case.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/forensic-science-can-help-in-criminal-investigations-discuss/>

WRAP Exams

Q8(b) · 15 marks

Define genetic polymorphism. Give details of its types with suitable examples

Anthropology GS 1 · 2015 · Concept of genetic polymorphism and selection, Mendelian population, Hardy-Weinberg law

Revision summary

Polymorphism is two or more common alleles at a locus.

Balanced types include sickle cell and malaria.

ABO, Rh, and HLA are serological polymorphisms.

SNPs and STRs are DNA types used in medicine and forensics.

Most human genetic variation is polymorphic within populations.

Introduction

Genetic polymorphism is the stable presence of two or more alleles at a locus, each at a frequency too high to be only recurrent mutation. A common teaching cut-off is 1 percent.

Body

Definition

- **Ford** used polymorphism for discrete forms in a population. In humans it now covers blood groups, enzymes, and DNA sites.
- It is not a rare disease allele. It is a normal variation that population genetics can count.

Types and examples

- **Balanced polymorphism:** heterozygote advantage. **Sickle haemoglobin** in malaria belts, shown by **Allison**, and **thalassaemia** in parts of India and the Mediterranean.
- **Transient polymorphism:** a rising advantageous allele not yet fixed, or a falling one.
- **Chromosomal polymorphism:** inversions in *Drosophila* were the classic; humans show copy-number and inversion variants too.
- **Protein / serological:** ABO, Rh, HLA, G6PD.
- **DNA polymorphism:** SNPs, STRs used in forensics, **Alu** insertions.
- **Restricted vs widespread:** PTC tasting, lactase persistence as gene-culture polymorphism.

Meaning

- Polymorphism feeds **Harris** enzyme work and **Lewontin's** point that most variation is within groups.

Flow diagram

Genetic polymorphism -> Balanced sickle

Genetic polymorphism -> SNP STR

Genetic polymorphism -> ABO Rh HLA

Conclusion

Genetic polymorphism is common allelic variation. Types run from balanced sickle-cell systems to SNPs and STRs, and they are the raw material of human diversity.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/define-genetic-polymorphism-give-details-of-its-types-with-suitable-examples/>

WRAP Exams

Q8(c) · 15 marks

What do you understand by Immunogenetics? Explain with suitable examples

Anthropology GS 1 · 2015 · Mendelian genetics in man-family study, single factor, multifactor, lethal, sub-lethal and polygenic inheritance in man.

Revision summary

Immunogenetics studies genes of antigens and immune response.

ABO and Rh govern transfusion and newborn haemolysis.

HLA matching is central to transplantation.

HLA alleles associate with autoimmune disease.

Population HLA maps are anthropological, not racial medicine.

Introduction

Immunogenetics is the genetics of the immune system. It studies inherited variation in antigens, antibodies, and the loci that decide transplant and disease risk.

Body

Core

- **Blood-group antigens are immune structures: ABO and Rh** decide transfusion and haemolytic disease of the newborn.
- **HLA (MHC)** on chromosome 6 is the densest human immunogenetic map. Matching matters in kidney and bone-marrow grafts.
- Antibody allotypes (**Gm, Km**) and **immunoglobulin** gene rearrangements join Mendelian inheritance to somatic diversity.

Examples

- **Landsteiner** found ABO. **Levine** linked Rh to newborn jaundice.
- **Ankylosing spondylitis** and **HLA-B27**, **coeliac** and **HLA-DQ**, **type 1 diabetes** and **DR/DQ** haplotypes.
- **G6PD** and some complement loci sit on the border of immuno-haematology and infection.
- **Hybridoma** and now sequencing of TCR and BCR repertoires are laboratory immunogenetics.

Anthropology

- HLA clines and Indian caste-tribe samples are used in population history, with care against racial medical myths.

Flow diagram

Immunogenetics -> ABO Rh transfusion Rh transfusion

Immunogenetics -> MHC transplant disease

Immunogenetics -> Antibody allotypes

Conclusion

Immunogenetics is inherited immune variation. ABO, Rh, and HLA are the teaching trio, with disease associations and transplant matching as the applied face.

Open WRAP page — <https://wrapexams.com/upsc/mains-answers/anthropology-gs-1/2015/what-do-you-underst-and-by-immunogenetics-explain-with-suitable-examples/>

WRAP Exams

Compiled answer key

Last pages of this pack. Each question links to the WRAP model answer on wrapexams.com.

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Q1(a) 10 marks	Q1(b) 10 marks	Q1(c) 10 marks	Q1(d) 10 marks
Q1(e) 10 marks	Q2(a) 15 marks	Q2(b) 20 marks	Q2(c) 15 marks
Q3(a) 15 marks	Q3(b) 15 marks	Q3(c) 20 marks	Q4(a) 20 marks
Q4(b) 10 marks	Q4(c) 20 marks	Q5(a) 10 marks	Q5(b) 10 marks
Q5(c) 10 marks	Q5(d) 10 marks	Q5(e) 10 marks	Q6(a) 20 marks
Q6(b) 15 marks	Q6(c) 15 marks	Q7(a) 20 marks	Q7(b) 15 marks
Q7(c) 15 marks	Q8(a) 20 marks	Q8(b) 15 marks	Q8(c) 15 marks

Question-wise key

Q1(a) · 10 marks Solution

Q1(b) · 10 marks Solution

Q1(c) · 10 marks Solution

Q1(d) · 10 marks Solution

Q1(e) · 10 marks Solution

Q2(a) · 15 marks Solution

Q2(b) · 20 marks Solution

Q2(c) · 15 marks Solution

Q3(a) · 15 marks Solution

Q3(b) · 15 marks Solution

Q3(c) · 20 marks Solution

Q4(a) · 20 marks Solution

Q4(b) · 10 marks Solution

Q4(c) · 20 marks Solution

Q5(a) · 10 marks Solution

Q5(b) · 10 marks Solution

Q5(c) · 10 marks Solution

Q5(d) · 10 marks Solution

Q5(e) · 10 marks Solution

Q6(a) · 20 marks Solution

Q6(b) · 15 marks Solution

Q6(c) · 15 marks Solution

Q7(a) · 20 marks Solution

Q7(b) · 15 marks Solution

Q7(c) · 15 marks Solution

Q8(a) · 20 marks Solution

Q8(b) · 15 marks Solution

Q8(c) · 15 marks Solution

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