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NEXT IAS

(To be filled by candidate)

Name : MANISH

Rol No. : MT24GEORA007 Date of Exam.: 5/09/2024

Mobile No. : — Email: .....

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Jaipur ☐
Mukherjee Nagar ☐ Prayagraj ☐ Online ☑

CSE (MAINS) TEST SERIES-2024

Test-05

Dated : 04-08-2024

GEOGRAPHY OPTIONAL

PAPER - I (FULL LENGTH)

Time Allowed : Three Hours

Maximum Marks: 250

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

*There are **EIGHT** questions divided in **Two sections** and printed in **ENGLISH**.*

*Candidate has to attempt **FIVE** questions in all.*

***Question No. 1 and 5** are compulsory and out of the remaining, any **THREE** are to be attempted choosing at least **ONE** question from each section.*

The number of marks carried by a question/part is indicated against it.

Answers must be written in the medium authorized in the Admission. Certificate which must be stated clearly on the cover of this Question-cum- Answer (QCA) booklet in the space provided.

No marks will be given for answers written in a medium other than the authorized one.

Word limit in questions, wherever specified, should be adhered to.

Attempts of question shall be counted in sequential order, unless struck off. Attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question cum Answer (QCA) booklet must be clearly struck off.

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(For filling by Examiners only)

Q. No.	Page No.	Max. Marks	Marks	Total	Signature
1. (a)	4	10			
1. (b)	6	10			
1. (c)	8	10			
1. (d)	10	10			
1. (e)	12	10			
2. (a)	14	20			
2. (b)	18	15			
2. (c)	21	15			
3. (a)	24	20			
3. (b)	28	15			
3. (c)	31	15			
4. (a)	34	20			
4. (b)	38	15			
4. (c)	41	15			
5. (a)	44	10			
5. (b)	46	10			
5. (c)	48	10			
5. (d)	50	10			
5. (e)	52	10			
6. (a)	54	20			
6. (b)	58	15			
6. (c)	61	15			
7. (a)	64	20			
7. (b)	68	15			
7. (c)	71	15			
8. (a)	74	20			
8. (b)	78	15			
8. (c)	81	15			
Grand Total					

Remarks

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Observations:

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SECTION-A

Answer the following in about 150 words each: **[10 × 5 = 50 Marks]**

Q.1 (a) Explain why evapotranspiration is geomorphically important.

Evapotranspiration is a concept in climatology which combines the moisture loss due to evaporation and transpiration losses from the leaves. It was introduced by Koppen & further Modified by Thornwaite.

Evapotranspiration = Mean Monthly Precipitation / Mean monthly evaporation

calculated based on Precipitation Index

Importance

(1) Tells us about the geographical distribution of vegetation eg xerophytes and Mesotherms (de candole's classification) in areas with high Evapotranspiration

(2) helps in understanding actual climatic patterns

(3) Thornwaite's evapotranspiration techniques were used by US Dept of Agriculture (USDA) in demarcation of Agro climatic Regions.

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(4) useful in drought demarcation & watershed based Planning.

(5) Evapotranspiration reflect the geomorphic landform development as it influences 'water' as an agency of erosion

The concept was used by Thornwaite in his climatic classification as Potential Evapotranspiration & has been used in Planning for dryland regions in India by ICRISAT.

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Q.1 (b) How do settlement patterns relate to the concept of sustainability and environmental impact?

Settlement patterns as per Clarles and Evans are a result of both

Natural
- Resources
- climate
- Topography

Human factors
- culture (works of Dioxidis)
- Economy

Settlement patterns impacted by Environment & sustainability

(1) use of local meteriels especially in rural areas upholds sustainability
eg Mud houses in Rural North India

(2) Disaster vulnerability impacts Patterns
eg Slant roofs in hills, Upraised houses in Brhamputra Plains

(3) Tribal Societies & settlement patterns are closely linked with idea of sustainability in Sacred groves

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Settlements impacting environment & sustainability

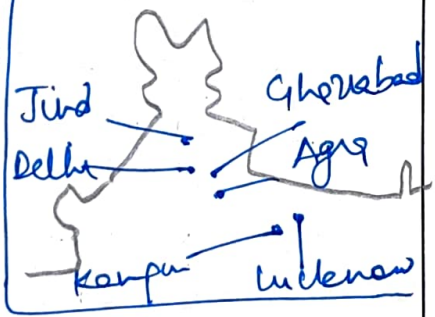
Positive Impact

(1) Energy transition by green buildings & patterns eg Madrid Bamboo Building, Spain

(2) concept of garden city by Howard Ebenzer + development of green spaces

Negetive impact

(1) cities as major pollution source eg Major Pollution centres of North India.



(2) overcrowding & Population burden affecting sustainability

eg 11,297 Population density in delhi can lead to ~~Ste~~ Tyranopolis (Idea of Mumphard)

Therefore Principle of ecological continuity as envisaged in Shanghai manual should be upheld.

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Q.1 (c) Describe briefly "Behavioural Geography".

Behavioural geography is the branch of geography which seeks to give central role to human behaviour in determining human patterns. It arose during 1960s as a backlash to Quantitative Revolution of Schaefer.

Tenets

(1) seeks the study of patterns using positivist ideology. This was to be done by studying Behaviour objectively.

(2) Methodology includes
- (1) Mental Maps of Wool Ridge, Gould & Downs
- (2) Behavioural Matrix of Allen Pred
- (3) Sonnenfeld's Model.
- (4) KATES Model

(3) These objective tools led to an objective study of human behaviour and reaffirmed the role of Man

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as optimiser & Satisfier
(works of Julian Wolpert & Herbert Simon)

Contributions

(1) brought focus back on man by removing Reductionism.
(2) As per Burton it removed fact-value dichotomy.
(3) Brought ~~to~~ new methods & led to cross fertilisation of ideas

Criticisms

(1) No research of ≠ subject matter & only on methodology
(2) As per Skinner, it led to reactionary Political doctrines
(3) geography lost scientific touch & led to doctoral confusions
(4) As per Harvey, Methods like Behavioural Matrix are not confirmatory.
(5) Cox called it a mere Point of view

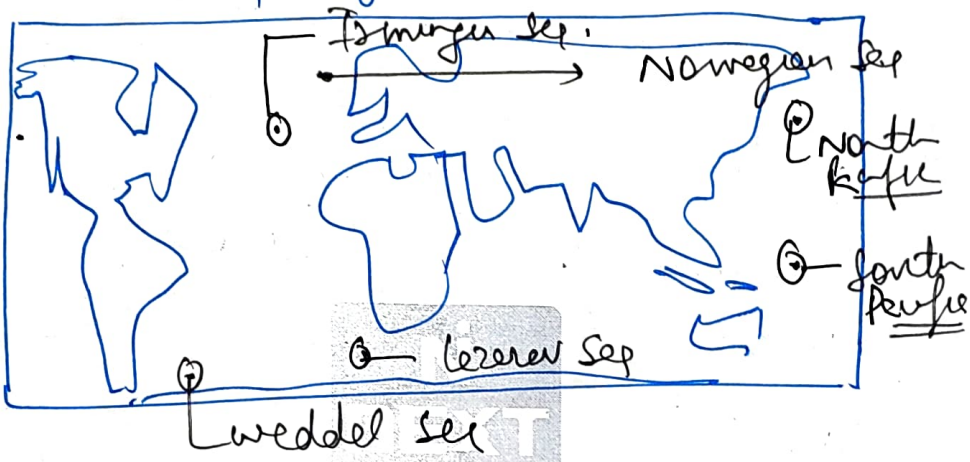
However, this led to reaffirming of man's role & inspired Social Relevance Revolution (W. Burger & R. Peet) & Cultural Turn.

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Q.1 (d) How does the thermohaline circulation induce deep ocean currents?

Thermohaline circulation are a result of ice formation and densification which happens at certain specified locations (Fig)



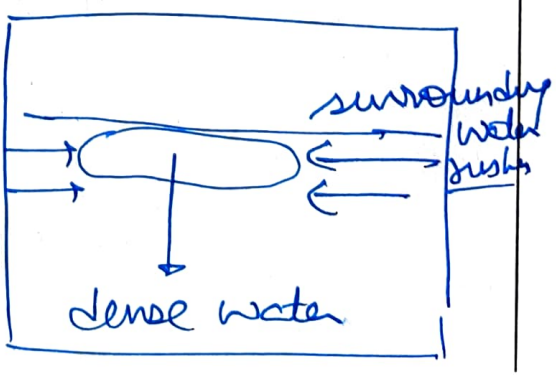
Process of inducing currents

(1) Ice formation at higher latitudes uses only 30% of ocean's salt.

(2) This makes the non frozen water saltier and hence denser.

- Difference → 1.030 vs 1.040 g/cm3

(3) The denser water sinks under the influence of gravity



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(4) The surrounding water rushes to fill the gap

This is known as the process of **Brine Rejection** & starts thermohaline currents

(5) Also called ocean conveyor belt

deep ocean currents →



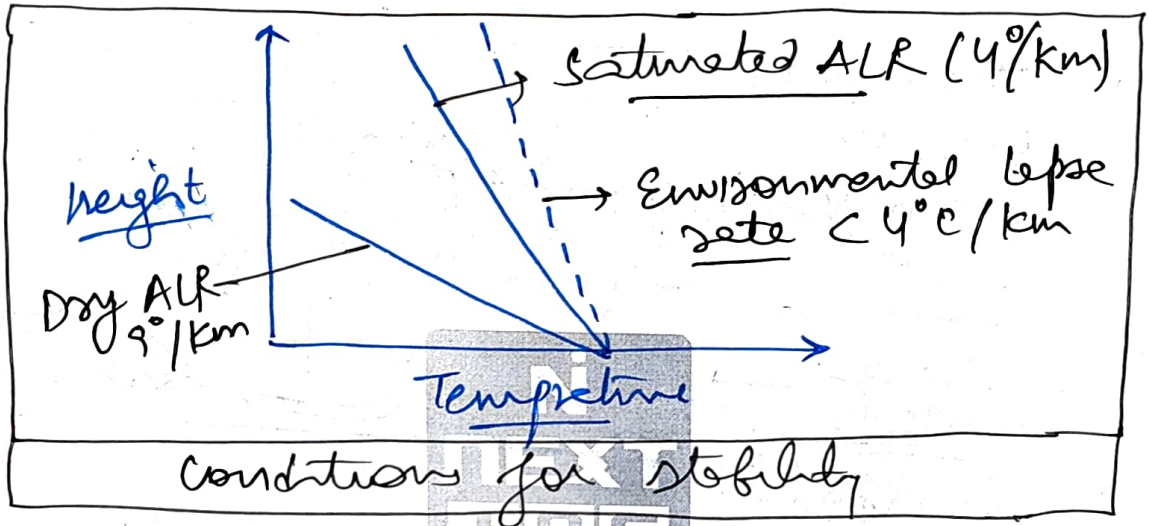
These are so slow & takes 1000s of years

These help in redistribution of ocean salinity & maintenance of heat budget by transferring of heat from surplus to deficit regions

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Q.1 (e) How does atmospheric stability affect pollution concentrations?

Atmospheric stability is a condition where air packet is stable under all saturation concentrations & doesn't rise on its own.



Conditions for stability

Affecting Pollutants

(1) Atmospheric stability leads to trapping of pollutants in the lower atmosphere leading to increased pollution

eg Delhi Air pollution during Nov–Dec

(2) coupled with fogs:
Atmospheric stability leads to formation of smogs → increase volatile organic compounds & PM concentrations

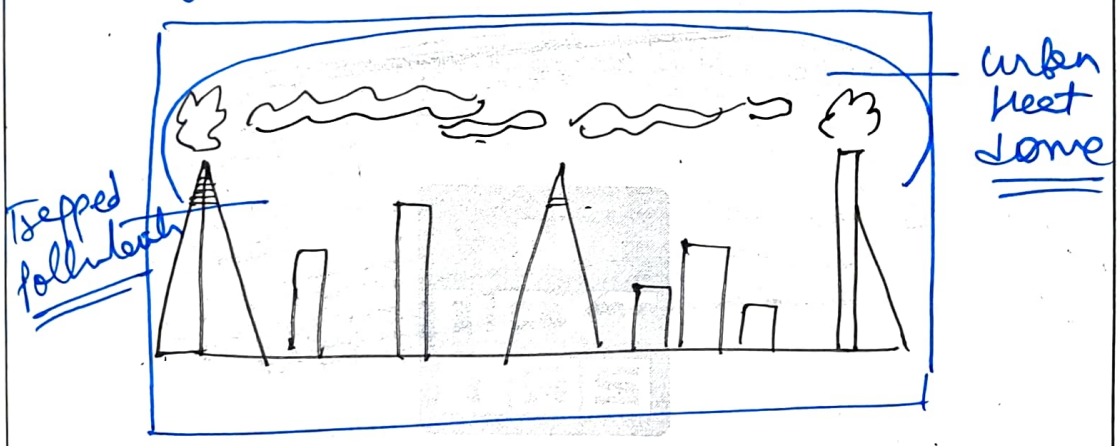
eg Meuse Valley smog of Belgium 1930

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(3) Hinders cloud formation.
This leads to No rain or No washing of pollutants on the surface → further prolonging pollution

(4) Leads to Urban Heat island effect & Pollution dome



Consequences
↳ Threat to life & Health of 3000 deaths in 1952 London smog
↳ Hinders navigation.
↳ Crops foliation & diseases of Red Rod in case in Punjab

The above issues could be adressed by Reforms in urban governance & Technology like catalytic Paints & cloud seeding

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Q.2 (a) Highlight the shortcoming of Continental Drift Theory, explain how Plate tectonics emerged as a much widely accepted theory. [20 Marks]

Continental drift theory of A Wegner was presented in 'Die entstung en kontenente de Ozeane' & was based on Taylor's idea of Lurashe & Gondwana Movement

Tenents

- SiAl continents oceans → SiMA or idea of Suess
- Pangea & Panthellassa during Meso zoic times
- Gravity pull of Sun & Moon as driving force (like Taylor)

Shortcomings

(1) Questionable force of Gravity Pull of sun & Moon and centre of gravity & buoyancy mismatch

→ As per Bullard, such force if from outside could also stop earth's rotation & Hence it should come from within

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(2) idea of Sial continents over Sima Oceans has been rejected

(3) couldnot explain Pre Mesozoic times Mechanisms.

(4) Idea of Homoplasy - has weakened the evidence of fossils (of Cynognathus & Glossopteris)

(5) Wegner's theory couldn't explain North South orientation of mountains.

However, as per IAS stars, Wegners ideas remain important as the challenged fixist theories like Beumont's Diapiric Theory and Harman's Undulation theory.

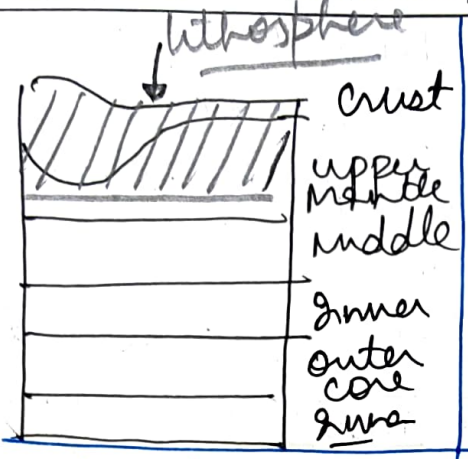
Overcome by Plate Tectonics

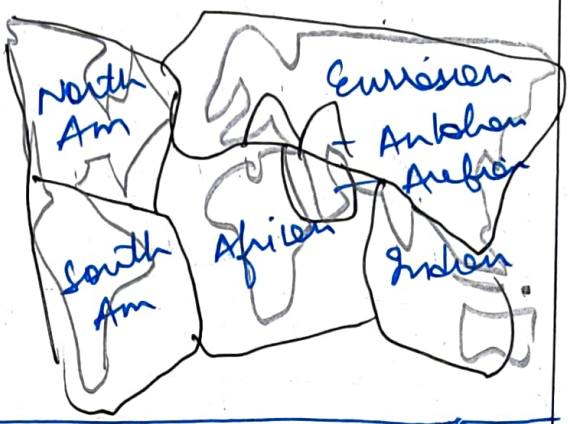
~~(6)~~ ~~Idea~~ by Morgan, Wilson & Pichon

(1) idea of Plates → Lithospheric Plates moving over Peridotite rich Olivine (Asthenosphere) has been validated by Seismic evidence. (Moho discontinuity) (works of Richard Oldham)

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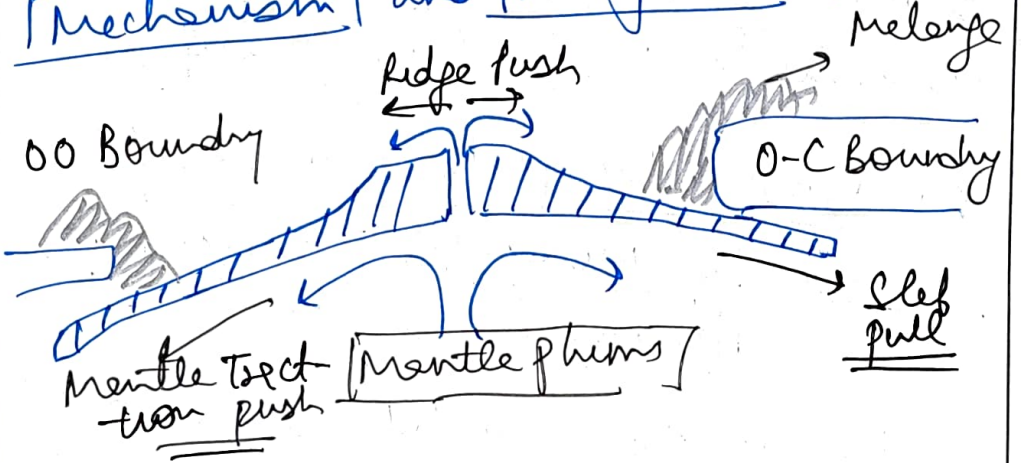




Structure · Major Plates

(2) Mechanism - works of Arthur Holmes i.e. convection currents forms the basis of Mechanism in PTT. This has been empirically tested by, works of I G GASS & Relegh

Mechanism and Acting Forces



(3) All mountains and Processes has been fairly explained by PTT

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Mountains → as plate boundary interactions

Hotspots → due to Mantle plume

Evidences of Plate Tectonics

Evidences by Wegner:
- Matching coastlines
- Fossil evidence
- Rocks Matching – works of Antonio Snieder & Buton & Bullard.
- Polar climatic Evidence

Other Evidences
1. Sea floor spreading by Hess (evidence by Vine & Mathews)
2. occurence of Benioff wadeti zone
3. Hotspot evidence

However, Rate of ~~expansion~~ constructive doesn't match rate of destructive boundries which is explained by Helm's concept of expanding earth & Mantle wind theory

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Q.2 (b) Discuss Denudation Chronology and its importance in geomorphology. [15 Marks]

Denudation chronology refers to studying, identifying, analysing & arranging erosional surfaces in chronological order. It is based on the following ideas

1. Hutton's concept of Uniformitarianism.
2. Present is the key to the past
3. Relict present Topography
4. Davisian works of cycle of erosion (Geographical Essays (1909))

Techniques used in Denudation chronology

1. Surveying & field observation
2. Radiometric & CN dating
3. Satellite & GIS imaging & observations

Denudation chronology therefore is an important tool in historical geography.

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Importance

(1) Helps in studying the past processes that operated on the erosional surfaces

eg Surinder Singh's works in Bhander Plateau studied that slopes has gone through the processes of both slope decline (Davis) & Retreat (Penck)

(2) Helps in classification of landforms.

eg classification of slopes as erosional & aggradational slopes

(3) Helps in studying past climatic ~~and~~ processes

eg study of Pliestocene ice age by Louis Agassiz in Canadian erosional surface

(4) Helps in studying ~~trends~~ evolution of landforms by fossil evidence

(5) Study of erosional surface by denudation chronology led to development of cycle concept by

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wn Davis.

However, it has been invalidated because

(1) evidences are not confirmatory & are often conjectures. (A J Snell)

(2) Erosional surfaces are not always accessible.
eg Alaskan landscape

(3) Pliestocene ~~landscape~~ Ice age as per Thornbury modified most of the erosional surfaces. Hence study will lead faulty results

(4) covering of erosional surfaces eg Basalt lava flow over Peninsular India

(5) criticised by climatic geomorphologist & Process Theorists like Walter Penck

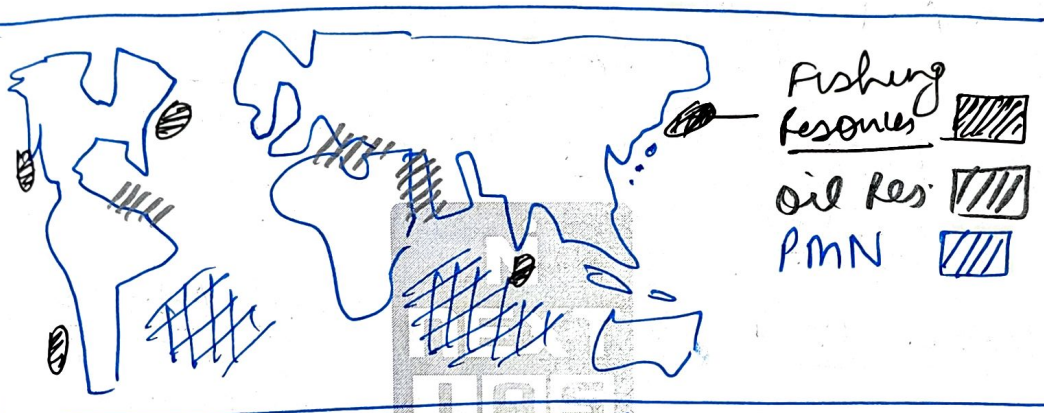
Therefore this approach as declined Post Davisian works ~~of~~ with geography moving towards more applied Aspects

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Q.2 (c) Describe the inter-relationship of man and marine resources. [15 Marks]

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Geography as per WL Jeong is the study of men environment relations & their forms & processes. Study of Men & Marine resources is one such aspect.



Marine Resources Map

- Food & Fodder → Fishes
- Energy → Gas Hydrates
- Minerals → Placer deposits

Relationships

Resources impacting Men

(1) Patterns of human settlement are determined by availability of Marine Resources
e.g. fisheries location → high population density

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(2) Acts as source of Food, Fodder & Protein intake

(3) Economic Relations
⇒ Resources of Venezuela & OPEC driving economic dividends

(4) Location as a resource (Idea of A. Mahan & NJ Spykesman impacts geopolitical World
⇒ Rise of China in the Rimland Region

Men impacting resources Adversely

(1) over-exploitation of fisheries resources especially off Newfoundland coast.

(2) Loss of Biodiversity
⇒ Coral bleaching & Macro Algal regime shift during 1997 ENSO (Cline Wilkenson Report)

(3) Pollution due to

- Discharge from land
  ⇒ of Adyar & Coum rivers in chennai
- Agricultural seepage
  ⇒ of Chesapeake bay in US

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This impacts ~~tttt~~ fisheries, marine green pasture etc

Men conserving & maximising resources

1. establishment of marine protected Areas to conserve Biotic Resource
2. Treaties to uphold ecological sustainability :-
   1. UNCLOS - Article 192 / 194
   2. MARPOL convention
   3. London Convention
3. exploring newer forms of resources like Gas Hydrates and Poly Metallic Nodules

= India exploring PMN in South Indian Ocean as pioneer investor under UNCLOS.

Principles of Stop & Go Determinism (Griffith Taylor) & Polluter Pay must be upheld to conserve life below water (SDG 13)

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Q.4 (a) Discuss the concept of 'Human Development' as defined by the United Nations Development Programme and the justification for developing Human Development Index. [20 Marks]

Unlike Tradtional measures (PQLI) Human Development as per UNDP is defined on the basis of Access to resources & choices. It is based on the concept of expanding choices and capability Approach of Prof Amartya Sen & Mehbub UL Haq (1990)

This is an offshoot of Social Relevance Revolution & welfare Approach in geography (Works of DM Smith)

Elements of Human Development

(1) Health Index (HI)
↳ based on life Expectancy at Birth.

(2) Education Index (EI)
↳ based on Mean year of schooling
↳ expected years of schooling at birth

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(3) Standard of living (SoLI)
↳ based on Gross National Income Per Capita at PPP levels.

→ HDI is developed based on the report & indexs
HDI Index = Geometric mean of All 3 indices

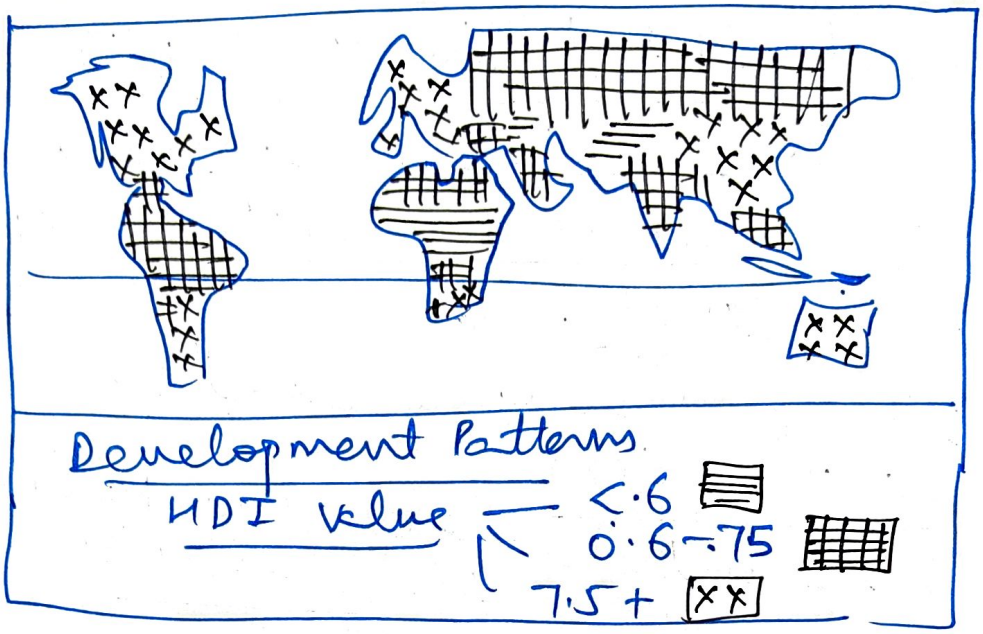
Justification for development of HDI

(1) it delineates the major areas for the policy makers to target while framing polices

(2) goes beyond traditional Europ-ean ethnocentric view of Development
↳ works of Schumpeter, Foster's steps of growth etc

(3) Provides a comparative analysis of world development Patterns along with their reasoning

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(4) forms the basis of measuring inequalities using
↳ Inequality Adjusted HDI
↳ Gender Development Index

However it has been criticised on these basis:

(1) doesn't reflect short term changes
(2) Data of some countries are not empirical & just mathematical estimates.
(3) doesn't take into account issues like racism, casteism which also impact development

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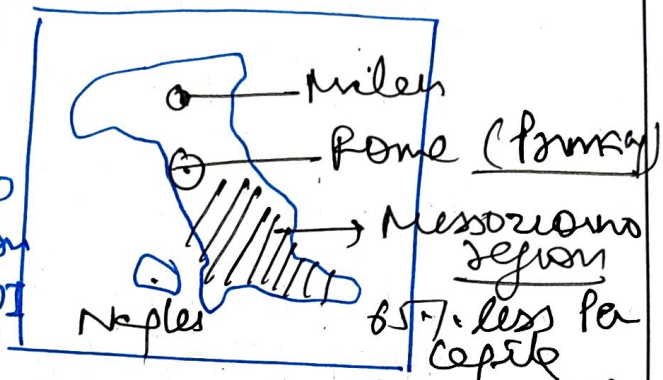
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(4) doesn't include negative externalities

(5) doesnot incorporate regional disparities

eg

Italy = developed Nation as per HDI



(6) How the GDP is used matters more which the HDI doesn't incorporate

Therefore reforms in data collection, incorporation of more variables based on Multi dimensional poverty Index etc should be done

India should undertake systemic reforms to improve its ranking from 131 in HDI

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Q.4 (b) Discuss the concept of Heartland and Rimland and examine their present-day validity. [15 Marks]

Heartland & Rimland theories forms the basis of geopolitical studies in geography and are based on geographical determinism

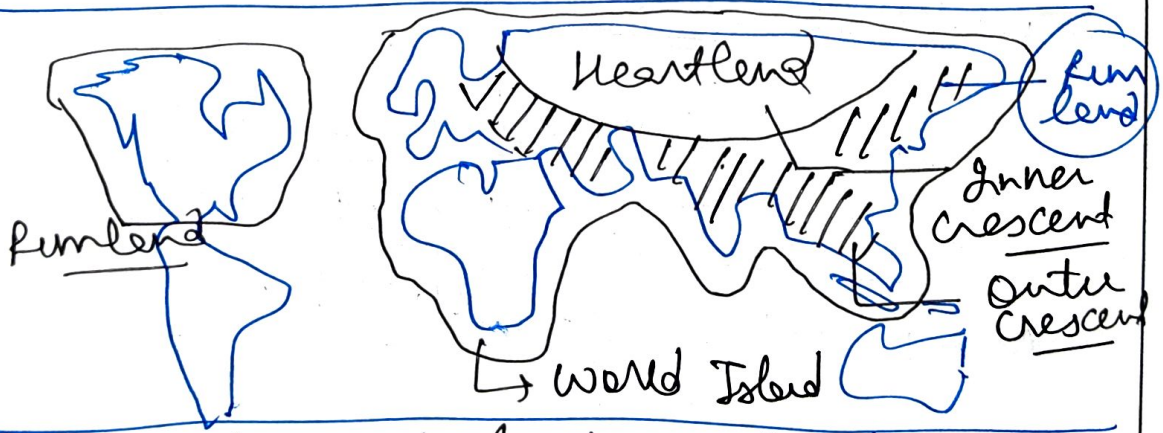
Heartland Theory

→ by H. Mackinder in Geography of Peace & Democratic Ideals & Reality (1919)

→ supremacy of landpowers

→ Advocated Heartland's (Fig 1)
Advantages → Fisheries, Isolation & resources

→ Predicted similar position of Midland → US & Heartland Midland rivalry.



one who controls Heartland controls the world.

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Rimland Theory † by NJ Spykesman in 1944.

→ Supremacy of Naval Powers - idea of Alfred Mahan

→ Rimland (Fig 1) as advantageous Position in garnering Geopolitical Advantages

Relevance

Heartland Theory	Rimland Theory
→ Rivalry between Heartland - Midland ⇒ US's support to war vs Russia ⇒ INKFtreedy issue	→ emergence of Rimland Nations of ASEAN, China, India
→ importance of land Power ⇒ China's BRI	→ importance of Navy ⇒ China's String of Pearls
→ Rise of Russia due to Heartland Advantages ⇒ Annexation of Crimea	→ centrality of sea lanes of communications in trade

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[Limited Relevance & Reasoning]

(1) As per Brezinski, these theories ignored the role of Airforce

(2) As per Taylor, Economic & Political factors also determine geopolitical might

(3) Factors such as cyber warfare, Hybrid & Grey war (case of Ukraine) were not accounted for

(4) Mackinder overestimated the advantages of Heartland of USSR are not that high & Arctic is also navigable

(5) criticised by SB Cohen as they postulate extreme geographical determinism.

For these reasons, scholars like Robert Kaplan are not in favor of these theories

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Q.4 (c) Discuss System approach and its applicability in Geography. [15 Marks]

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System is a sum of whole that functions as a whole due to inter relationships [Preston James]

The framework for studying & analysing systems is called systems approach.

→ idea of Ludvig von Betalanfy

→ brought to geography by Richard Chorley & BJL Berry in General Systems theory

→ elements of systems include

- Boundries
- Extent
- Interrelationships
- Hierarchies
- Environment beyond boundries

→ types of systems has been defined by Richard chorley, leyton etc

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Applicability

(1) used widely during the phase of Quantitative Revolution

(2) based on cybernetics & hence has practical applications in climatic & disaster prediction

(3) used in the study of heat budget, ocean salt budget etc

(4) helps in understanding complex phenomenon based on convinient abstraction (Burton)

(5) Brings scientific touch to geography by use of Mathematics & statistics

(6) used by Benetts & Chorley in studying urban problems in Britain

(7) Tansley's concept of Ecosystem is based on Systems concept

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However, limited Applicability and criticisms due to

(1) can not Quantify phenomenon like diffusion of innovation

(2) leads to oversimplification and as per D. Stamp, "conceal the complexities of real world"

(3) establishment of relationships among all phenomenon is often difficult

However, despite these there has been growing trend of using systems approach. It was used widely during COVID Prediction modelling coupled with the concepts like AI & Artificial neural Networks

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SECTION-B

Answer the following in about 150 words each: **[10×5 = 50 Marks]**

Q.5 (a) How do geomorphic and edaphic factors influence the habitat of community?

A community is group of spcies living together in a habitat based on homeostasis

eg A pond having diverse biosr anisms

Geomorphic factors → Habitat

(1) determines the type of Habitat
eg destrophic forces can create montane habitats

(2) erosion & weathering changes the habitat.
eg progressive slope decline

(3) sudden catastrophic movements like earthquake can destroy habitats & create new habitats
eg creation of Quekelakes

As per Whittaker & Clements such events can cause Secondary Succession

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Edphic factors

(1) Provides resources like food fooder for the habited
ex desert vs Rainforest ecosystem

(2) Provisioning of services for the habited
ex decomposition of dead being by soil microbiology

(3) Nutrient and gaseous recycling

(4) edphic factors impact the adaptation & speciation in a habitat.
ex Halomorphic soils like Terrosse & Rendzina habitats
salt tolerent halophytes

Therefore both these factors impact existence distribution & functioning of habitats

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Q.5 (b) Define and describe induced mass wasting with suitable examples.

Mass wasting is a form of erosion which involves movement of large amount of sediments

eg soil creep

Reasons

(1) Deforestation → Mudflow
(2) Human Activities like blasting, boring
(3) Torrential rain & cloud burst
(4) earthquakes & soil liquefaction

eg landslides
mudflows

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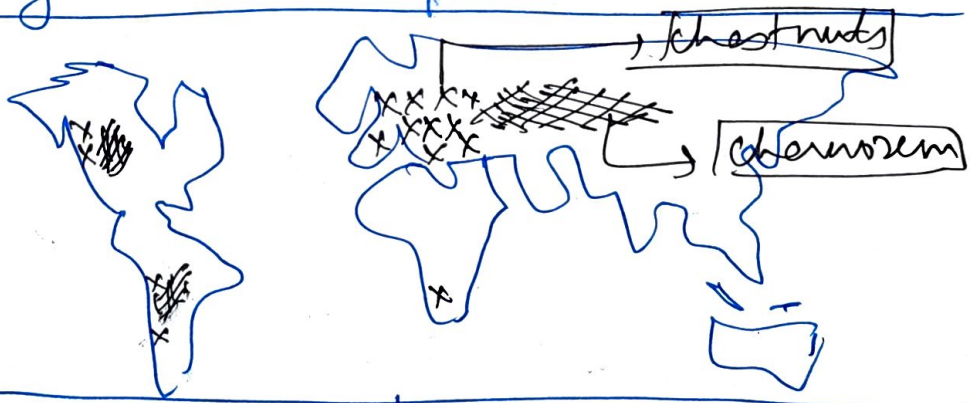
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Q.5 (c) Differentiate between characteristics of Chernozem and Chestnut soils.

According to Dokuchev and Marbut's classification, both chernozems & chestnuts are soils of dry regions found at higher latitudes between 40 - 60° North & South

Chernozems	Chestnuts
(1) Found in Steppes region of Russia, Ukraine, Prairies of US & Northern Argentina	Found in Eastern Europe, Mediterranean regions etc



(2) higher salt content	lower salt content
(3) Higher Humus due to rainfall & biodiversity	low Humus content

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(4) Fertile soils (Advantage of Heartland as per Mackinder)

(3) with irrigation supports wheat & commercial grain farming (Whittlesey's classification)

(4) less fertile due to salt content & low soil organic carbon

- Also has poor texture & water holding capacity

(5) supports sclerophylls, like citrus fruits, viticulture & dairying

Both these soils however are zonal soils found along latitudinal zones unlike Azonal soils like Alluvial soils & Intrazonal soils like Solonchak & Solonetz

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Q.5 (d) Explain how human geography in the early twentieth century has become more integrative and interdisciplinary?

Geography has been a multi-paradigmic discipline with diverse thoughts & contestation of ideas. (signs of immature science)

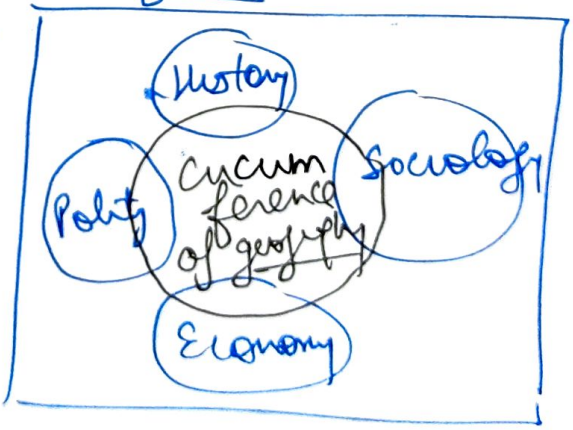
More integrative & interdisciplinary

(1) study of Man environment relations with diverse views

Determinism
- Ratzel's Anthropo geographie I.
- Huntington
- Semple
- Mackinder

Possibilism
- Vidal de Blace
- Jean Brunhes
- Comte Buffon

(2) works of Richtofen who believed geography as science of synthesis integrative approach



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(3) Study of culture has also been incorporated
of works of Ratzel in Migration (Deutschland)
Carl Sauer's Berkley School
Otto Schluter's Landschaft
Kultur

(4) interdisciplinary Methodology

Positivism
of Schaeffer's Methematics
locational Analysis by Hagget

Human Sciences
- Gestalt Psychology
- Hermeneutics
- Mental Maps

(5) Hence geography of late has been polyphonic - Feminism Environmentalism etc & single dominant phase of Kuhn's Idea is not relevant

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Q.5 (e) How does a ridge and valley landscape arise? Explain the formation of the ridges and valleys.

Ridges and Valleys

Formation

(1) due to folding of rivers

(2) due to faulting of vosges mountains

(3) erosion & expose of shield of canadian shield

Valleys

(1) erosion by rivers during young stage (erosion cycle) of gangetic valley in Uttarakhand

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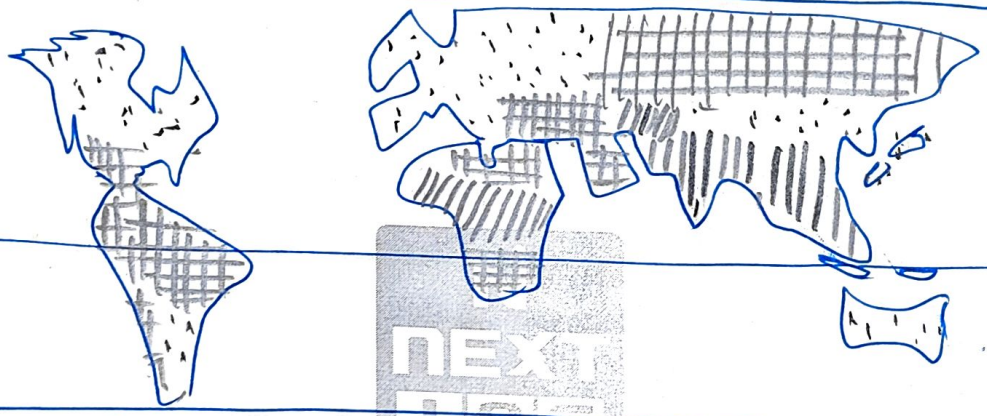
(L) Glacial erosion
↳ Hanging & lateral valleys



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Q.6 (a) The process of demographic transition is not uniform. Examine this statement in the context of demographic transition theory. [20 Marks]

Demographic transition theory was postulated by Thompson and Notenstine based on empirical observations in Europe & America



countries in Stage I
Stage II
Stage III

Non Uniform Patterns

① countries in Stage I include Sub saharan Africa & war & Poverty impacted Regions like Afghanistan (Malthusian positive checks)

Reasons → Poor Medical development
→ High IMR / MMR
→ Agricultural economy (Boserup's theory)

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↳ low level of Female Education & Reproductive Rights (JS Mill)

(4) Countries in Stage II include developing ctries Americe & Asian countries of India entered in 2001

Reasons

declining death Rates

(1) Food security improving Health of Brasil's Bosa Familia Scheme for food

(2) Medical Advancements ⇒ 86% institutional deliveries in India

slowly declining birth rates

(1) Behavioural change-takes time

(2) orthodoxy & slow diffusion of innovations

(3) Low level of urbanisation boosting Population (H. Spencer's idea)

(3) Countries in 3rd Stage

Reasons → Behavioural change & Modernity

→ High Medical infra Development

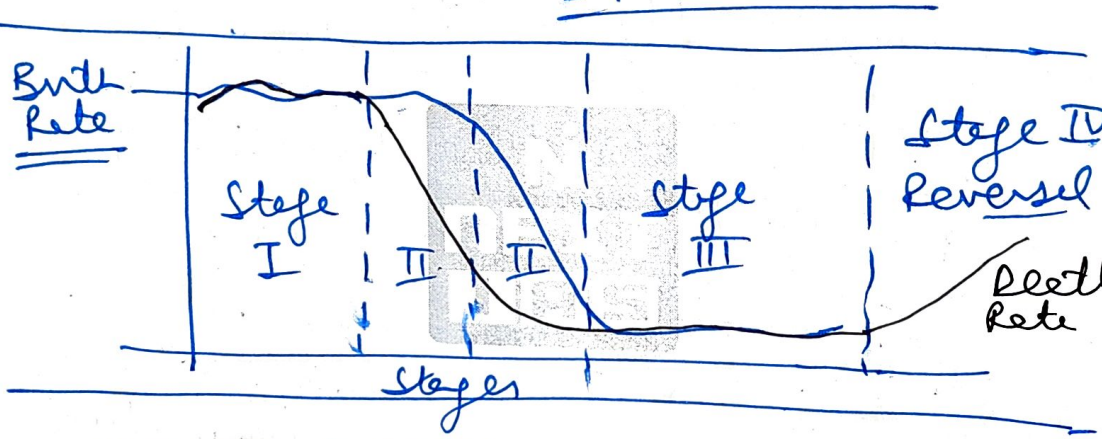
→ Age of Mass consumption with high socio economic indicators

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(4) Stage of Mortality Reversal

countries like Russia, Japan, Eastern Europe

Reasons :- (1) Peaking life expectancy of Japan
(2) Wars & conflicts
(3) Recession post fall of USSR in Russia



Consequences

(1) differential development pattern in global North & south
(2) leads to dependencies and parasitic Relations between core and peripheries (Wallestein & Frank Gunder
(3) leads to large scale migration and brain drain of India to EU & US

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(4) Brings differential challenges

Developing world	Developed world
(1) Resource shortage ↳ Ackerman's Brasil Region	(1) Labour force shortages
(2) High orthodoxy	(2) Morbidly severed
(3) overcrowding & Housing shortages	(3) challenge in Merging Migration Policies amidst desecularisation & xenophobia of France
(4) Hunger & Mal-nutrition ↳ 18% stunting in India (UNICEF)	(4) High dependency Ratios ↳ 4:10 in Germany

These could be Adressed by

(1) Role of International organisation like FAO, WHO etc.
(2) Migratory laws & Treaties
(3) incentives & Capitanty Approach of Ascendumont in developing countries.

Along with this Human Development by Education & Skilling is also important

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Q.6 (b) Discuss the relevance of Von Thunen's model of agricultural location in the contemporary context. [15 Marks]

Von Thunen presented his model in 'Der Isolierte Staat' based on his studies in 1826 Mecklenburg Germany.

Von Thunen Model

Tenets	Patterns
(1) Normative conditions (2) declining landuse intensity (distance decay) (3) concept of locational rent	

Relevance

(1) Patterns of landuse intensity in US reflects distance decay



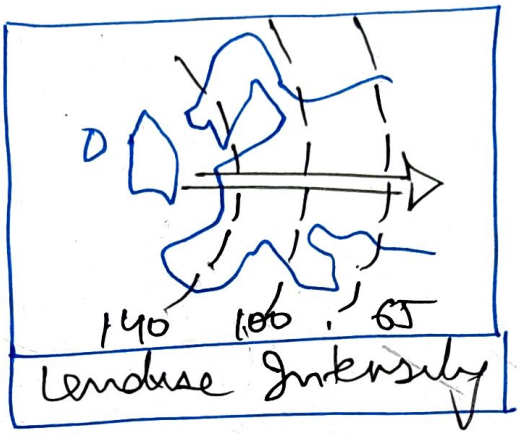
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(2) Europe → Patterns of agricultural landuse reflects Von Thunen

(3) Validity upheld by Alonso in Bid Rent Theory

(4) Case of India



(1) Mohd Shafi in Koli, Aligarh affirmed its validity at Micro level

(2) Singh & Kaur in Punjab identified distance decay in case of irrigation infrastructure

Negative Relevance

(1) As per Prof. Chisolm, the theory is not applicable as it doesn't accord role of → Topography and Climate in Agriculture Patterns

(2) Models based on Normative concepts & Reductionism are vaguely reflected in reality as per Burton

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(3) Role of Govt Polices ignored ~~of~~ Haryana govt's schemes like Mera Pani Meri Virasat increasing use of Millets & Maize.

(4) idea of Multiple Markets as postulated by Multiple Nuclei Model of Harris & Ulman and Wreford Watson's Exploded city Model → goes w Single Marked

(5) Freight rates varying depending upon type of produce ~~of~~ Perishables requiring cold storage and aren't solely a function of distance

However, Von Thunen's Model along with weber's theory & Christaller's CPT became the basis of locational Theories during Schaefer's Spatial Science Approach (Quantitative Revolution)

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Q.6 (c) Examine the relationship of biogeography with ecology and geography. [15 Marks]

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Biogeography is that branch of geography which studies the interselections of geomorphology, climatology & hydrology with Biotic components

study of physiographic functioning by Stafford

Relations with Ecology

(1) overlap in domain and areas of study

biogeography studies interselections among lifeforms like Amensalism, Predation much like ecology

(2) similar methodology

both can be studied based on Tansley's ecosystem Approach.

(3) Biogeography studies distribution of plant and animals and the causal factors. This is also an

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important theme under ecology (study of biomes)

(2) Biogeography and geography

(1) Physiography of a place determines biological resources

eg Steeper slopes lack thicker soil horizons & soil Humus

(2) climate determines the distribution of biological beings

eg

Role of Temperature

- Leandolis classification
  - Megatherms
  - Mesotherms
  - Microtherms
  - Hekisotherms
  - Xerophytes

Role of Rainfall

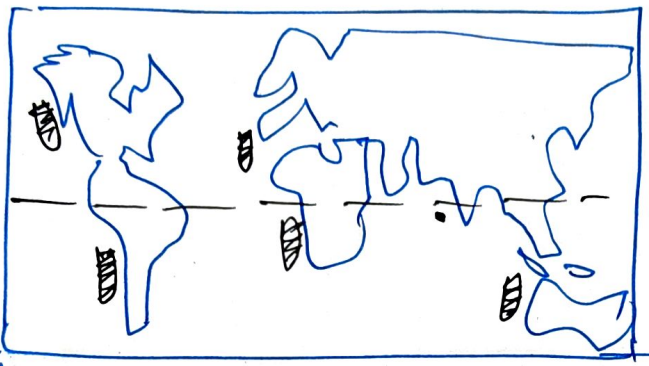
- Forest types depending upon rain

(3) Geographical phenomenon like upwelling, downwelling, brine rejection, ekman gyre impacts lifeform distribution

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eg North Pacific gyre → Sargasso Sea



Upwelling regions → zones of High Biodiversity

(4) Biodiversity distribution & interaction impact geographical features.

(1) Role of vegetation in slope development (Stahlers idea)

(2) Transpiration Role in climate & Rainfall Patterns

(3) Role of Human agency in climate change

As per Botkin & Keller, Earth's surface & environment operates as a closed system & maintaining its Homeostasis should be the developmental objective