

Question	Marks
1	4.5/10
2	4.0/10
3	4.5/10
4	4.5/10
5	4.75/10
6	7.25/15
7	6.75/15
8	9.5/20
9	7.0/15
10	8.5/15
11	9.0/20
12	7.25/15
13	8.0/15
14	8.25/20
Total	93.75/200

Strengths

- Demonstrated strong conceptual understanding by incorporating both theory and real-world examples effectively in questions on urbanization and food systems.
- Exceptional use of diagrams and structured approaches in discussing population pyramids, which enhance comparative analysis and theoretical understanding.
- Clear distinction between positive and negative impacts in trade-related questions, reflecting a balanced approach and mature understanding of economic geography concepts.
- Good grasp of India's political boundary disputes, supported by relevant historical and contemporary examples demonstrating knowledge depth.

Areas of Improvement

- Need to deepen theoretical integration, especially for economic and political theories, in questions about urban primacy and land use classification for a more comprehensive analysis.
- Improve conclusion synthesis across several answers by linking back to the question or initial statements to create a coherent closure, as seen in discussions on famines and transport infrastructure.
- Enhance specificity of examples and include data-backed arguments when discussing industrial landscapes and trade influences to strengthen evidence-based claims.
- Address missed sub-themes such as anecumene, global city concepts, and state capitalism's role in primacy and geopolitical considerations for a holistic response to questions.

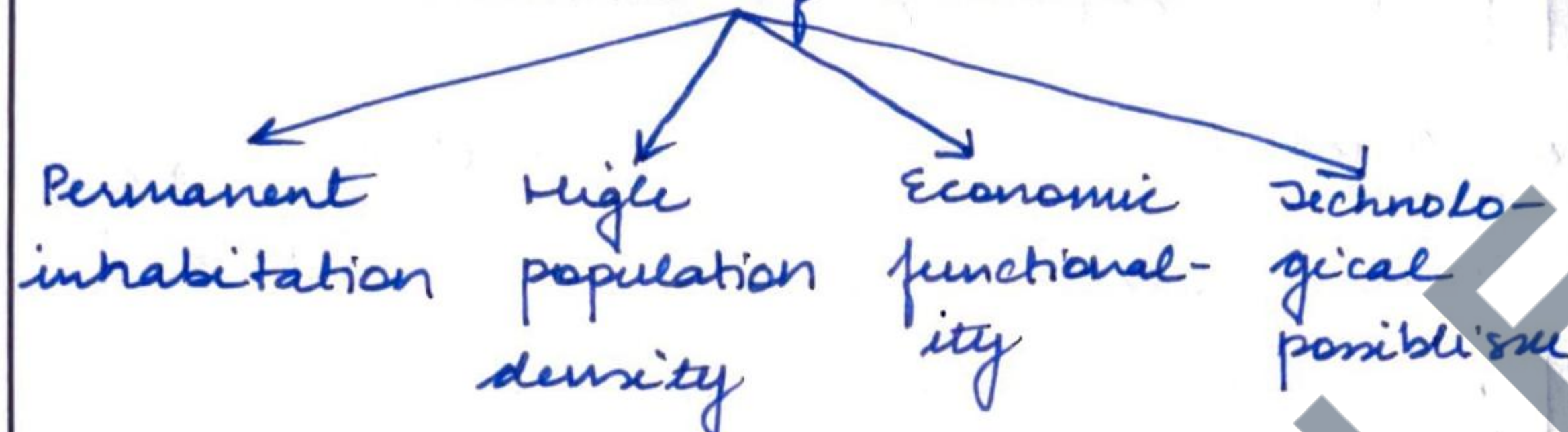
Examiner Signature

Q1.(a) Write a short note on types of ecumene with relevant examples ? 10m

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Ecumene refers to the permanently inhabited portions of the Earth surface.

Features of Ecumene



Types of Ecumene

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1. Urban Ecumene - Densely populated cities with continuous human inhabitation and urban influence

eg Tokyo - Yokohama belt, Japan

2. Agricultural Ecumene - Rural regions

dominated by farming.

eg Punjab plains

Marks: 4.5

Positives :-

Well-structured answer with appropriate examples for each ecumene type. Good use of diagram to enhance conceptual understanding.

Introduction :-

Basic definition of ecumene provided, but lacks depth! Could have mentioned it's from Greek 'oikoumene' meaning 'inhabited world' to show conceptual evolution.

Body :-

+ Good diagram showing features of ecumene - visually effective!

+ Excellent categorization of ecumene types with clear structure

Urban Ecumene example is accurate but could've mentioned megalopolis formation like BosWash corridor!

Agricultural Ecumene needs distinction between intensive vs extensive farming ecumenes - Punjab is intensive!

Industrial Ecumene example is dated! Could've mentioned Shenzhen-Guangzhou manufacturing belt as contemporary example

Coastal Ecumene lacks mention of population concentration (40% of global population lives within 100km of coast - UN data)

Riverine Ecumene good but missed mentioning Gangetic plains which supports 400+ million people!

3. Industrial Ecumene - settlements

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clustered around manufacturing hubs

eg Ruhr region, Germany

4. Coastal Ecumene - populated shore lines due to trade and ports

eg Eastern China seaboard.

5. Riverine Ecumene - Inhabited

areas along rivers for water and fertile soil - linear settlements.

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eg Nile Valley, Egypt.

6. Mountain Ecumene - Inhabited areas along rivers high altitude environment.

eg Nepal Himalayan settlements

Thus, ecumene reflect both, human adaptability and resource distribution, forming a foundation for studying population and settlements.

Improvements :-

Non-continuous ecumene (archipelagic settlements like Indonesia/Philippines) completely missing!

-No mention of anecumene (uninhabited/uninhabitable regions) as contrast - crucial for complete understanding!

-Digital/virtual ecumene concept (modern networked settlements) missing - reflects contemporary geographical thinking!

Conclusion :-

Conclusion is too generic - missed opportunity to link ecumene types to contemporary geographical challenges like climate change impacts on habitability patterns!

Q1.(b) How does simple economic and political economy lead to the primacy of cities ? 10m

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Urban primacy reflects unequal economic and political development within nations and surrounding nations.

Role of simple economic structures in Urban Primacy

1. central Place Functions dominate one city - services cluster in one location for efficiency

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eg Bangkok monopolizes Thai national functions

2. Agglomeration and Market Access - firms cluster where population is dense, reinforcing primacy

eg Nairobi central to Kenya's commerce

3. Transport and Infrastructure efficiency - single nodes lower logistics cost

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eg Lagos in Nigeria's shipping and road hub

Marks: 4.0

Positives :-

You've structured the answer logically with economic and political factors clearly separated. Your global examples are spot-on and demonstrate wide geographical knowledge.

Introduction :-

Your intro is too generic! Urban primacy needs a sharper definition - Jefferson's concept of disproportionate dominance of one city over others in a national urban system would set the stage better.

Body :-

+ Excellent use of Myrdal's cumulative causation theory - shows theoretical grounding!

+ Strong examples for each point (Bangkok, Nairobi, Lagos) demonstrate global understanding!

Your 'central place functions' point lacks Christaller's explicit mention - a missed opportunity!

The 'agglomeration' section needs Krugman's New Economic Geography theory for depth!

Your political economy section is underdeveloped - where's dependency theory or world-systems analysis?

No mention of Friedmann's core-periphery model which is FUNDAMENTAL to urban primacy!

Transport section lacks discussion of Taaffe's transport development model that explains primacy evolution!

4. Labour Pool Attraction - Myrdal's
cumulative causation attracts human
capital.  Dhaka attracts rural
migrants.

Political Economy reinforcing primacy

1. Urban centric policy making causing
centralization of govt policy.

 Paris holds administrative favour

2. Colonial legacy of uneven development

 Kolkata's early infra dominance

3. Uneven regional development causing
Rural-urban divide and regional
disparity  Buenos Aires absorb
disproportionate govt subsidies

The spatial inequalities perpetuated
due to urban primacy should be
tackled through technology diffusion,
bottom up and sustainable planning.

Improvements :-

Add Saskia Sassen's global city concept -
primacy now transcends national
boundaries!

-Include financialization as driver of
primacy - financial services concentrate
in primate cities (London, Tokyo)!

-Mention state capitalism's role -
government enterprises often cluster in
capitals (Beijing, Moscow)!

Conclusion :-

Good attempt at policy prescription in
conclusion, but too vague! Specify HOW
technology diffusion tackles primacy -
e.g., remote work reducing need for
physical concentration.

Q1.(c) Give a brief account of Inverse Distance law. 10m

Inverse distance law talks about how spatial interaction between two nodes is indirectly proportional to the distance between them.

$$I = k \frac{M_1 \cdot M_2}{D^n}$$

I = Interaction

M_1 & M_2 = geographical / economic mass.

D = Distance

n = distance decay.

It emphasises spatial friction i.e. distance imposes cost, time and effort on movement or interaction.

Applications of Inverse Distance Law

1. Gravity models - predicts flows (people, goods) between two places akin to Newtonian gravity.

eg Weber's Least cost Industrial location.

Marks: 4.5

Positives :-

Formula explanation is precise and applications across different geographical theories show good conceptual understanding. The answer demonstrates knowledge of spatial interaction fundamentals.

Introduction :-

Good start with the basic formula, but missing Tobler's First Law of Geography connection which is the theoretical foundation of IDL!

Body :-

+ Excellent formula presentation with clear explanation of variables!

Weber's industrial location isn't a gravity model example - better cite Reilly's Law of Retail Gravitation!

+ Good connection to Ravenstein's migration principles!

CPT connection is correct but superficial - add threshold distance concept!

ICT criticism is valid but underdeveloped - mention 'death of distance' thesis by Cairncross!

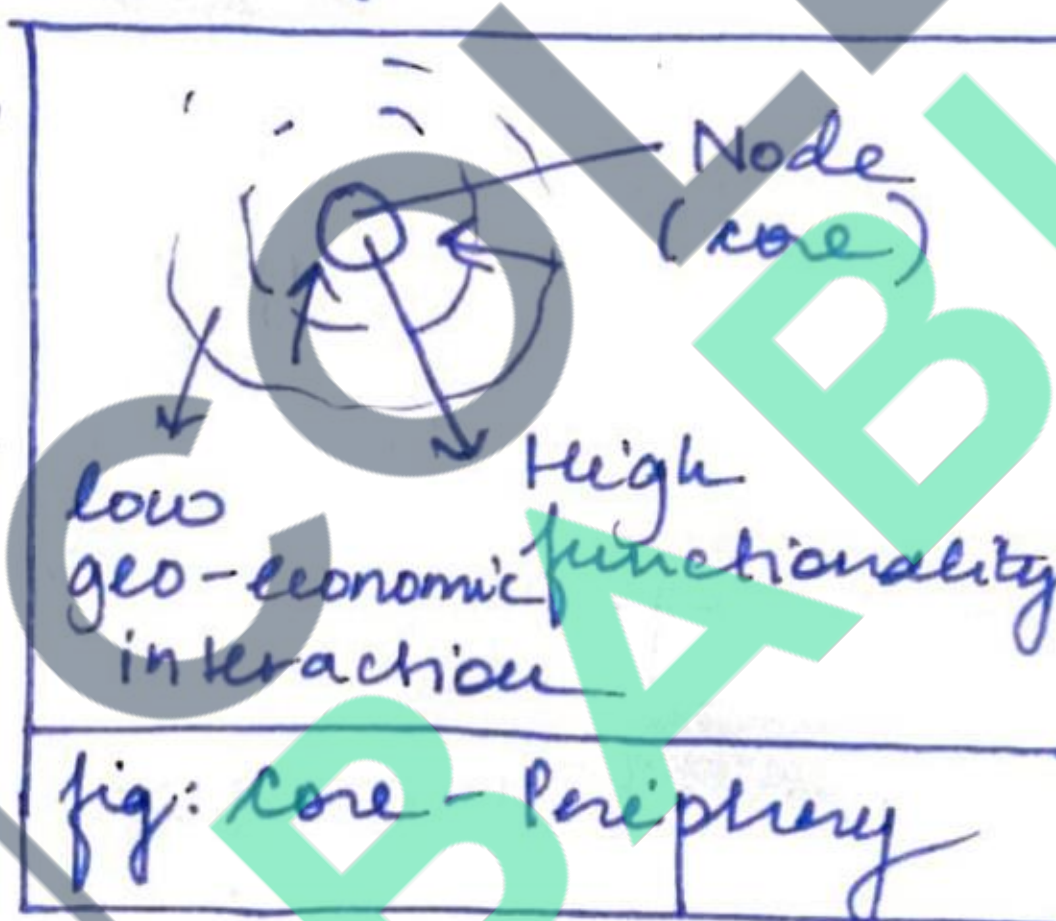
eg. Ravenstein's migration - distance decay of motive to migrate.

2. Central Place Theory, Christaller :-

Interaction intensity decays with distance; closer towns serve people better

3. Friedman's core periphery model.

Explains functionality and primacy of nodes and gravitational accumulation of economic activity at the core



Criticisms

- Ignores cultural and technological constraints
- Flattened by ICT, weakens spatial interaction

IDL, is a cornerstone of spatial interaction, important for flow analysis for a region.

Improvements :-

Add Waldo Tobler's First Law connection: 'Everything is related to everything else, but near things are more related than distant things'

- Include Hägerstrand's time-geography perspective on IDL and spatial diffusion processes

- Mention modern applications in GIS (spatial interpolation, kriging) where IDW is directly applied

Conclusion :-

- doesn't synthesize the significance of IDL in modern spatial analysis contexts.

Q1.(d) Famines are less about food availability and more about access to food." Comment 10m

"Starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there being not enough food" ~ Amartya Sen

Problem & Dichotomy between Food Availability vs Accessibility

1. Food Availability Approach - links famine to decline in food supply due to flood, drought etc.
eg Irish famine 1845-52
2. Entitlement approach - focus on access through legal, economic and social entitlement. eg Bengal Famine 1943 - despite rice availability.
3. Policy failures, market collapse and governance failures impact food access more than supply. eg Ethiopian famine due to civil war.

Marks: 4.5

Positives :-

You've grasped Sen's entitlement approach well and provided diverse examples across time periods. The structure clearly distinguishes between theoretical approaches and real-world applications.

Introduction :-

Excellent use of Amartya Sen's quote to set the tone! Immediately establishes the theoretical foundation of the answer.

Body :-

+ Strong conceptual clarity in distinguishing between availability vs. accessibility approaches!

x Your Irish Famine example actually contradicts your point! Ireland was exporting food during the famine - it was an access problem, not availability. Replace with Somalia 2011 drought.

+ Excellent mention of Bengal Famine 1943 - perfect historical validation of Sen's theory!

x Point 3 needs specificity - Ethiopian famine (which year? 1983-85?) needs elaboration on how war disrupted markets, not production.

x Social marginalization point lacks geographical perspective - add spatial dimension of how marginalized groups occupy peripheral regions with poor market connectivity.

x Gaza case study is current but underdeveloped - mention how blockade creates artificial scarcity despite global food abundance.

4. Social Marginalisation - Caste, ethnicity, class disparities restrict access to food even in surplus zones.

→ Exclusion of Dalits in rural India

5. Globalised trade raises prices, causing exclusion of poor and marginalised

Case Study

GAZA

- conflict: Hamas and anti palestine movement
- supply chain breakdown
- High starvation & nutrition gap in Gaza

Mediterranean sea

Israel

Gaza



Way Forward

- 1) Capabilities approach - enhance access to marginalised
- 2) Food insecurity mapping using GIS.
- 3) Food distribution - PHQKAY model.

Hence, focus on universal access is equally important as availability to ensure prevention of famines

Improvements :-

Add Sen's four entitlement categories: production-based, trade-based, labor-based, and transfer entitlements - crucial to understanding access!

-Include spatial dimension of famines - how they often affect specific regions within countries despite national food sufficiency (e.g., North Korea's regional disparities)

-Mention how climate change is creating new vulnerability patterns in food access, not just production (e.g., market disruptions from extreme weather events)

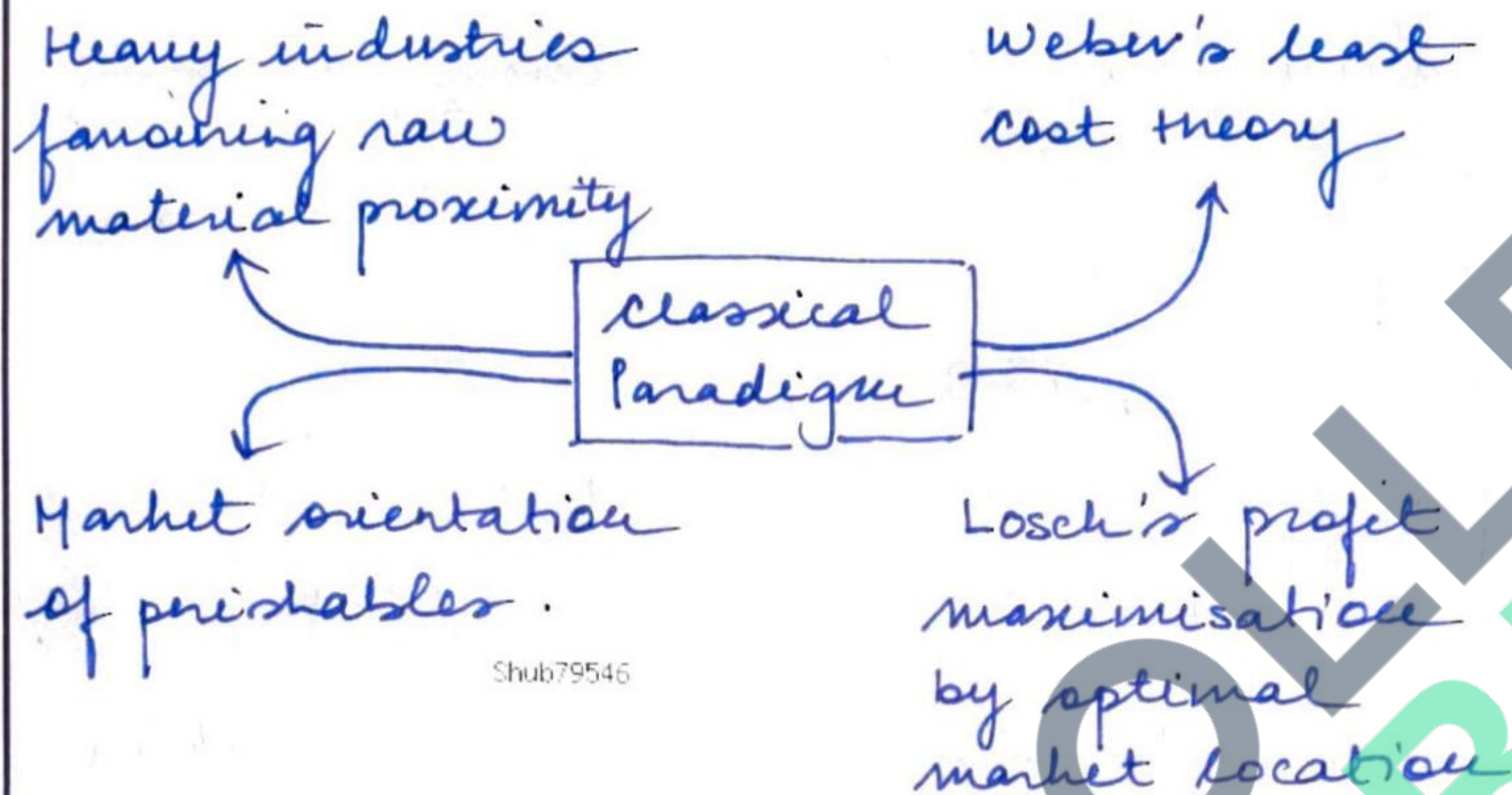
Conclusion :-

The conclusion is too brief and lacks synthesis. Instead of just saying 'Hence, focus on ensuring access...', connect back to Sen's entitlement theory and show how modern famines validate his thesis.

Q1.(e) Footloose industries represent a shift in the classical industrial location paradigm."
Justify 10m

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Foot loose industries - not tied to specific raw materials, defy classical location of industries paradigm.



Foot loose Industries: Paradigm shift

1. Usually have light inputs thus unbound by localised natural resources eg software firms

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Marks: 4.75

Positives :-

Excellent structure with clear points and relevant examples. Your approach of contrasting classical with modern location factors is conceptually strong and demonstrates good understanding of industrial geography.

Introduction :-

Good attempt to frame the paradigm shift! Your diagram effectively contrasts classical vs. footloose industries, though Weber's theory could be more precisely represented.

Body :-

+ Excellent diagram showing classical paradigm components!

+ Strong point about connectivity over proximity - captures the essence of footloose industries!

'Human capital dependency' needs explicit contrast with classical labor theories (e.g., Alfred Marshall's labor pools vs. Richard Florida's creative class)

Example 'GIFT city' needs specificity - mention Gujarat International Finance Tec-City's policy advantages

'Untied to pollution control' is misleading - footloose industries often face stricter environmental regulations in knowledge economies

3. Human capital dependency of skilled labour

eg chips agglomeration - Taiwan

4. Favour liberal policy zones rather than core industrial zones

eg GIFT city - FinTech industry

5. Light weight but high value products - can be setup anywhere

eg Semiconductor FAB - Morgan Assam

6. Serve International markets, breaking traditional supply dependency

eg Pharma R&D hubs

7. Unlied to pollution control or bulk production constraints

eg 3D printing industry

Foot loose industries prioritise knowledge networks, technology and policy incentives to produce frontier goods and services, defying classical industrial locations.

Improvements :-

Add Castells' 'space of flows' concept (1996) to show theoretical underpinning of footloose industries in network society
- Include role of agglomeration economies in footloose industries (Porter's clusters) despite freedom from resource constraints
- Mention how footloose industries challenge Christaller's Central Place Theory with their non-hierarchical spatial patterns

Conclusion :-

Strong conclusion highlighting the knowledge economy aspect, but missed opportunity to explicitly connect to the 'paradigm shift' mentioned in the question.

Q2.(a) "Transport infrastructure serves as both a facilitator of integration and a mechanism of spatial inequality." Examine with reference to India. 15m

As per Edward Soja - transport shapes movement and opportunity, but also creates spatial inequalities.

Role in facilitating Integration

1. National connectivity through multimodal transport enhancing functional flow.

Case study

DMIC

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- Industrial corridor having multimodal transport.
- Integrates 6 states improving trade flows.



2. Enhance urban rural linkages by connecting market and villages.

eg. PMGSY - connection of village roads

3. Improved railways and airways promote migration, tourism and

Marks: 7.25

Positives :-

You've masterfully balanced the dual nature of transport infrastructure with concrete examples. The answer shows sophisticated understanding of spatial inequality concepts and real-world applications in India. Your inclusion of environmental and social dimensions elevates this beyond typical infrastructure discussions.

Introduction :-

Starting with Soja's perspective is intellectually sharp! But where's the direct engagement with the question statement? A one-liner connecting transport's dual nature would make this perfect.

Body :-

+ Excellent theoretical framing with Edward Soja - shows conceptual depth!

+ DMIC case study is spot-on and diagram adds value to your spatial argument

The PMGSY point needs a specific outcome - e.g. '95% rural habitations now connected, yet last-mile connectivity remains problematic in 7 states'

Your 'telecom infra' point is brilliant but underutilized - add 'creating digital highways alongside physical ones'

cultural mixing.  eg Vande Bharat
Trains

4. Strengthens National security by
enabling military mobilization
in border areas.

 eg Darbuk - Shyok - DBO road Ladakh

5. Telecom infra laid alongside
transport routes fosters digitization

 eg Optical fibre penetration via Bharat
Net.

Mechanism of Spatial Inequality

1. Uneven infrastructure development
causes regional disparity

 eg North East India Isolation

2. Urban bias in transport planning

Megacities have metros while Tier III
city is neglected.

3. Exclusion of Tribal and Hill
Areas - leads to poor transport

North East example needs specificity -
mention 'Chicken's Neck corridor
vulnerability' or 'Sikkim's single highway
dependence'

The Naxalism-transport connection is
insightful but needs precision - 'only
29% road connectivity in LWE districts
vs national average of 61%'

+ Excellent point on infrastructure-led
gentrification - rarely mentioned in
answers!

Your hierarchical diffusion point lacks
clarity - specify 'hub-and-spoke model
needed between metros and small towns'

access and socio-economic inequality

eg Bastar disconnect breeding ^{Shub79546} Naxalism

4. Roads in ecologically fragile zones cause environmental damage and marginalization of indigenous people.

eg Silent Valley Knulla road project.

5. Infrastructure led Gentrification

metro lines raises land prices, displaces poor

eg slum evictions due to Mumbai Metro. ^{Shub79546}

Way Forward

1. Infra development after social & Environment Impact Assessment.

2. Hierarchical diffusion of connectivity to enable inter regional development

3. Gati Shakti, Bharatmala & Sagarmala expedited implementation

whole govt approach is needed to enhance spatial integration while avoiding regional disparities

Improvements :-

Add 'Freight Corridor Inequality' - 58% of freight movement concentrated in Golden Quadrilateral while central India remains underserved

-Include 'Gender dimension' - transport design often ignores women's safety and mobility patterns (e.g., last-mile connectivity issues)

-Mention 'Digital logistics platforms' (FASTag, e-Way Bill) creating new divides between tech-savvy and traditional transporters

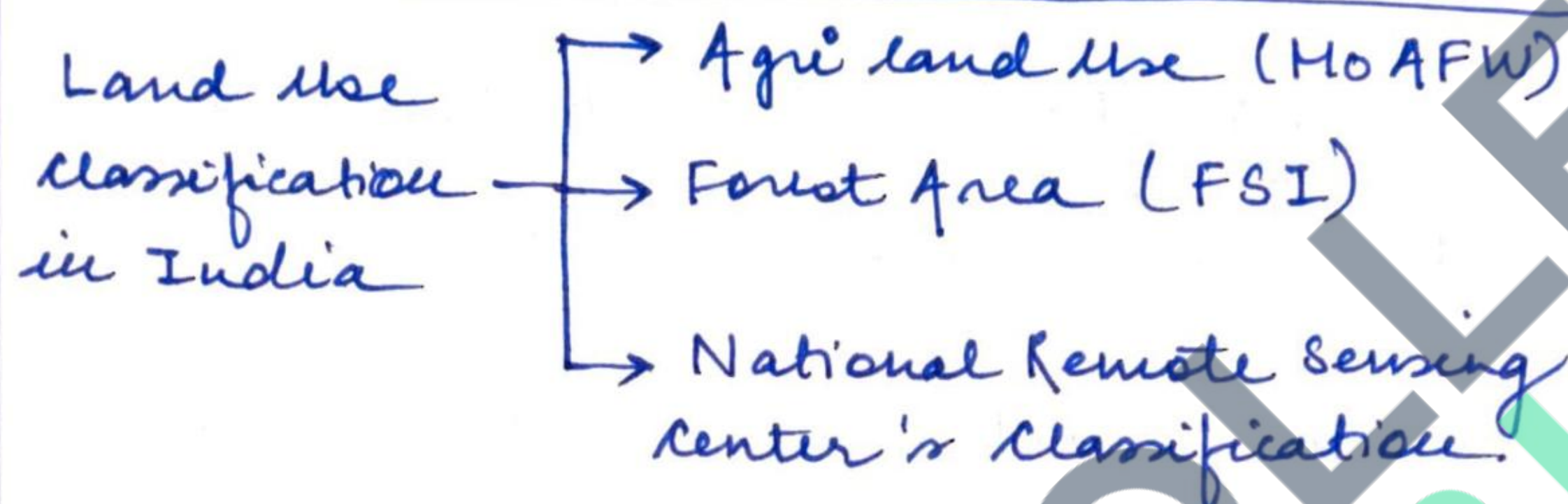
Conclusion :-

Your 'Way Forward' works as a conclusion but lacks a final verdict on the question's core premise. Add one line directly addressing how transport simultaneously integrates AND creates inequality in India.

Q2.(b) Critically examine the limitations of the existing land use classification systems in India. Suggest reforms for data-driven, participatory land use planning. 15m

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Land use classification forms the foundational step towards efficient Land use planning.



Limitations of Existing Classification

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1. Agency overlap and mismatch - dual classification of same land causes discrepancies
2. Outdated categories in land revenue records - colonial era terms like "barren" and "cultivable waste".

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Fig Pre Independence terminology used in Chhattisgarh.

Marks: 6.75

Positives :-

Good use of diagram to visualize classification systems! Commendable inclusion of tribal land use issues that often get overlooked in technical discussions.

Introduction :-

Decent start but lacks critical context! Could have mentioned how land use classification directly impacts resource allocation, environmental management, and socio-economic development.

Body :-

+ Good attempt at structuring with limitations followed by reforms - shows logical progression!

+ Excellent example of Delhi Yamuna floodplain misclassification - demonstrates real impact!

x 'Agency overlap' point lacks specifics - mention MoEFCC vs Revenue Department classification conflicts!

x 'Outdated categories' needs stronger critique - these categories fail to capture climate-vulnerable lands as per IPCC land classification standards!

3. Categories too broad to capture multi-functional granularity of land.

4. Poor integration of remote sensing data. eg under utilization of ISRO data.

5. Neglect of ecological functions lead to mis-classification of areas like wetlands and riparian zones.

eg Delhi Yamuna floodplain - Vacant land.

6. Tribal land use under represented in records causing marginalization.

eg Absence of Van Panchayats in data - boxes

Reforms for Data Driven, Participatory Land Use Planning

1. Harmonise categories and definitions across various agencies.

2. Periodic satellite aided updation

x 'Poor integration of remote sensing data' - mention Bhuvan-LULC portal's 19 categories vs revenue records' 9 categories mismatch!

x Blockchain suggestion seems buzzwordy - how exactly would it improve land records? Specify!

x SWAMITWA example is rural-focused - what about urban land classification challenges?

through GIS and Bhuvan

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eg Telangana geo spatial land records mapping.

3. Integration of ecological functions as criteria. eg Ramsar classification for wetlands.

4. Deploying blockchain, Drones and AI to substantiate land records.

eg SWAMITWA scheme.

5. Legal recognition of customary land rights and proper implementation of FRA 2006.

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6. Linking land use to local planning bodies for bottom up development.

eg Maharashtra DPCs using GIS for planning

Hence, a technology driven and inclusive approach of land use classification can translate to improved planning outcomes in India.

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Improvements :-

No mention of National Land Use Policy draft (2013) and its implementation gaps!

-Missing critique of 9-fold classification system's inability to address climate change impacts on land!

-No discussion on how land classification affects disaster management and resilience planning!

Conclusion :-

Too generic! Missing specific policy recommendations or implementation roadmap. Where's the critical examination part that was asked for?

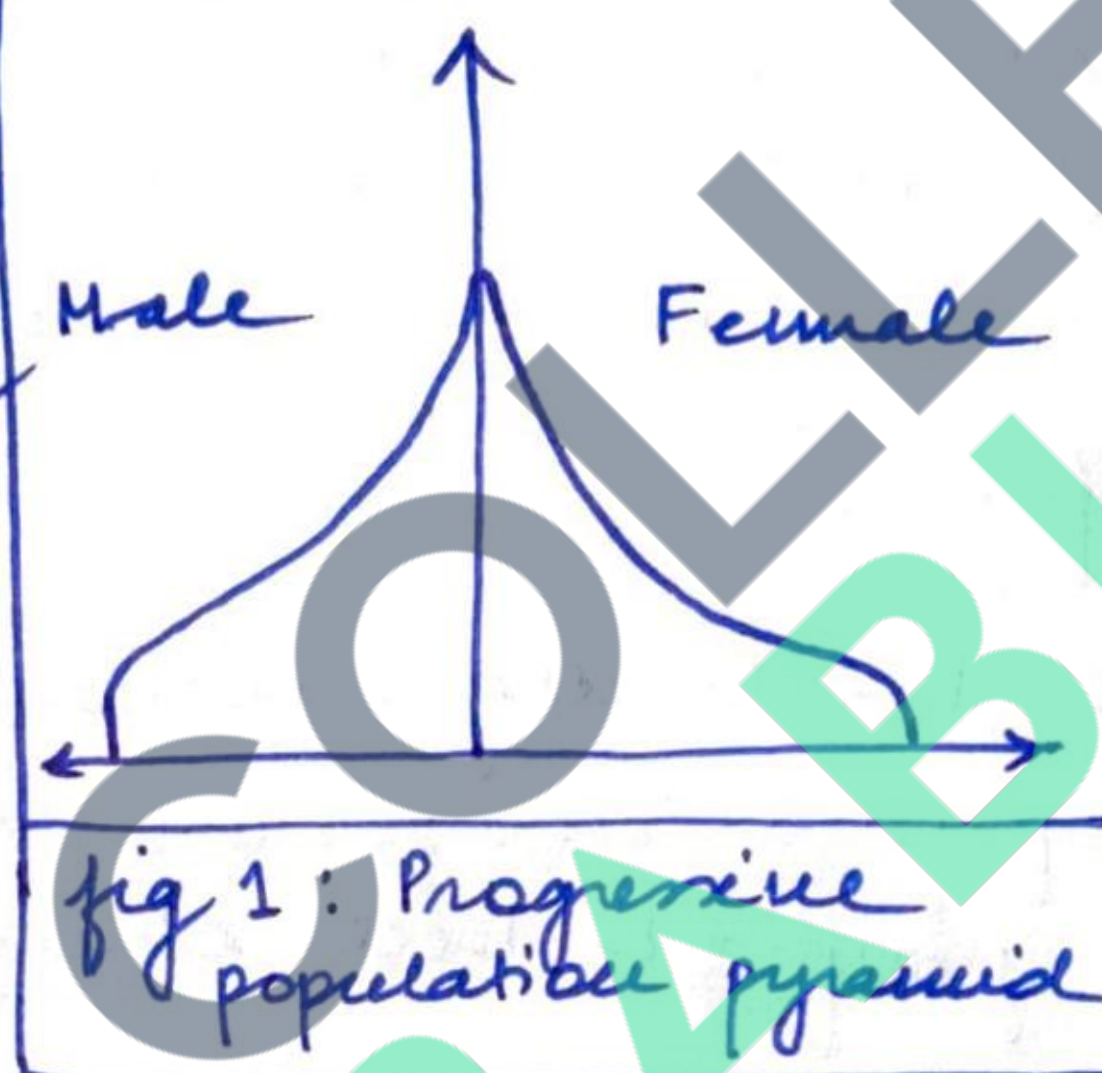
Q2.(c) Discuss Progressive, Stationary, Regressive and Intermediate types of Population Pyramid. 20m

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Population pyramids are the finger-prints of a nation's demographic structure - representing the age and sex structure of the population.

Progressive Population Pyramid

This reflects high birth rate and death rate, typically found in under developed nations. (fig 1)



1. Broad base - indicates large number of children (0-14 yrs)
2. Narrow apex highlights low life expectancy.
3. Pyramid is like a classic triangle
4. Stage 2 of Demographic Transitional model
5. Face issue of high child mortality,

Marks: 9.5

Positives :-

Exceptional structural clarity with consistent format across all pyramid types. Your point-wise approach with numbered characteristics for each pyramid type creates excellent comparative analysis framework!

Introduction :-

Excellent metaphor of population pyramids as 'finger-prints' of demographic structure! Immediately sets the analytical tone.

Body :-

+ Brilliant connection of Progressive pyramid to Stage 2 of DTM - shows theoretical understanding!

+ Excellent visual representation with 4 distinct diagrams - makes complex demographic patterns instantly comprehensible!

x Your 'Stationary' pyramid description mentions 'bell shaped' but classic stationary pyramids are more rectangular/columnar - quick fix needed!

x For Regressive pyramid, missed mentioning negative population growth rate - crucial demographic indicator!

poverty and poor health infra
fig Niger and Chad.

Stationary Population Pyramid

Reflects low birth rates and death rates, in nations that have achieved demographic stability

fig (2).

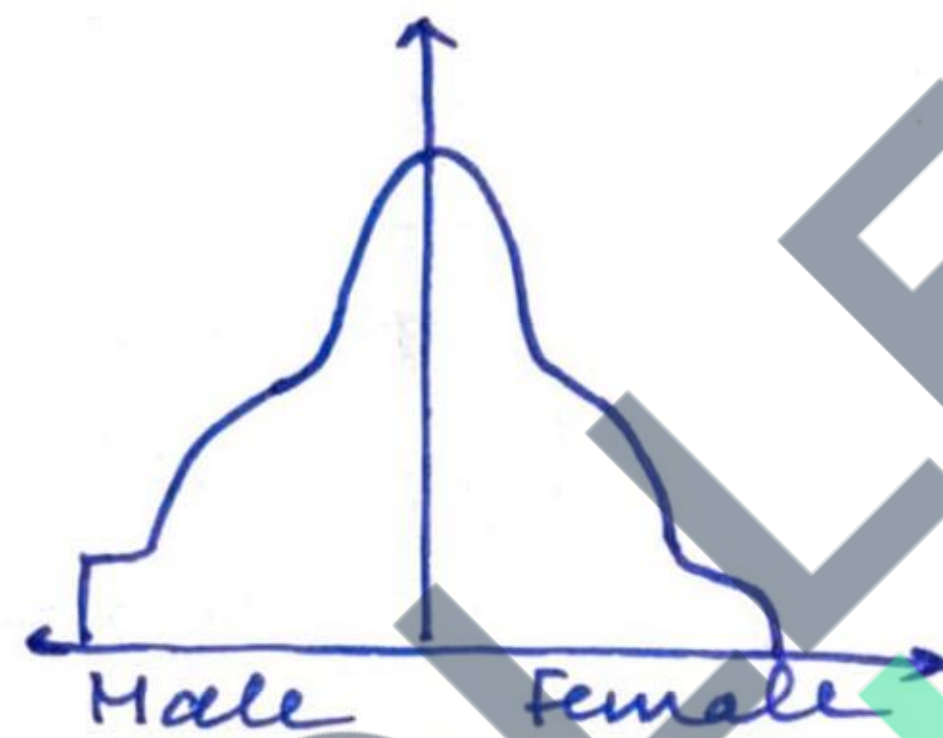


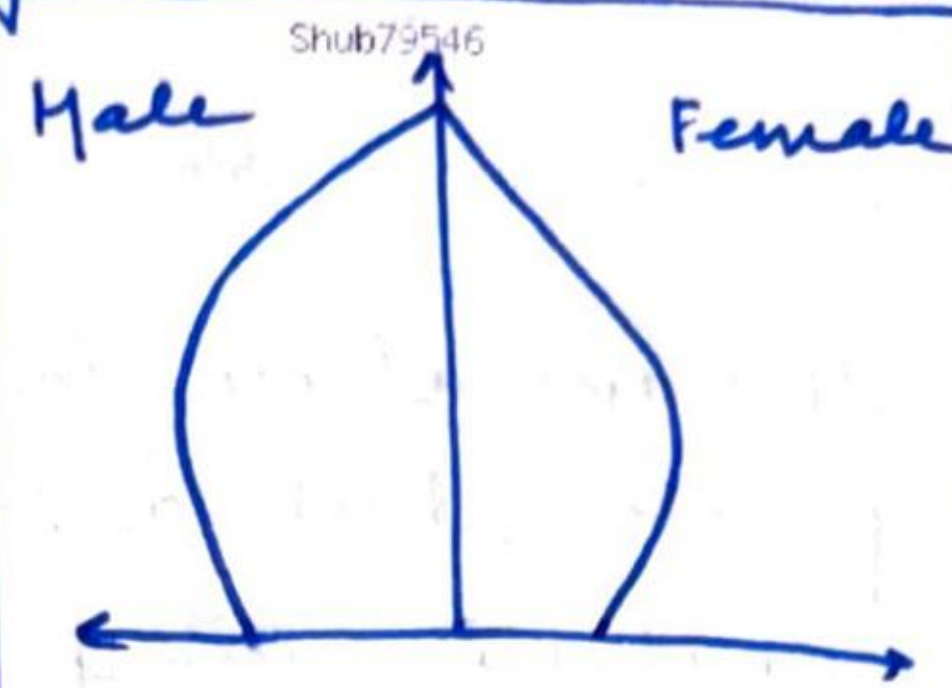
fig 2: Stationary Population pyramid

1. Relatively balanced population across age groups & bell shaped.
2. Slight tapering at top reflecting ageing but ~~balance~~ high life expectancy
3. Near zero natural population increase
4. Stage 4 of DTM
5. High urbanisation, migration from other countries, female literacy and geriatric pressure is noticed.

fig USA, Sweden, Australia

Regressive Population Pyramid

characterised by low birth rates and a shrinking younger population, typical of ageing societies (fig 3).



1. Narrow base indicates fewer births
2. Bulge in middle and upper age groups
3. Top heavy pyramid shape.
4. Stage 5 of DTM
5. High healthcare burden and pension pressure.

eg Japan, South Korea, Italy.

Intermediate population Pyramid

Reflects transition, combining features of both progressive and stationary population pyramids. (fig 4)

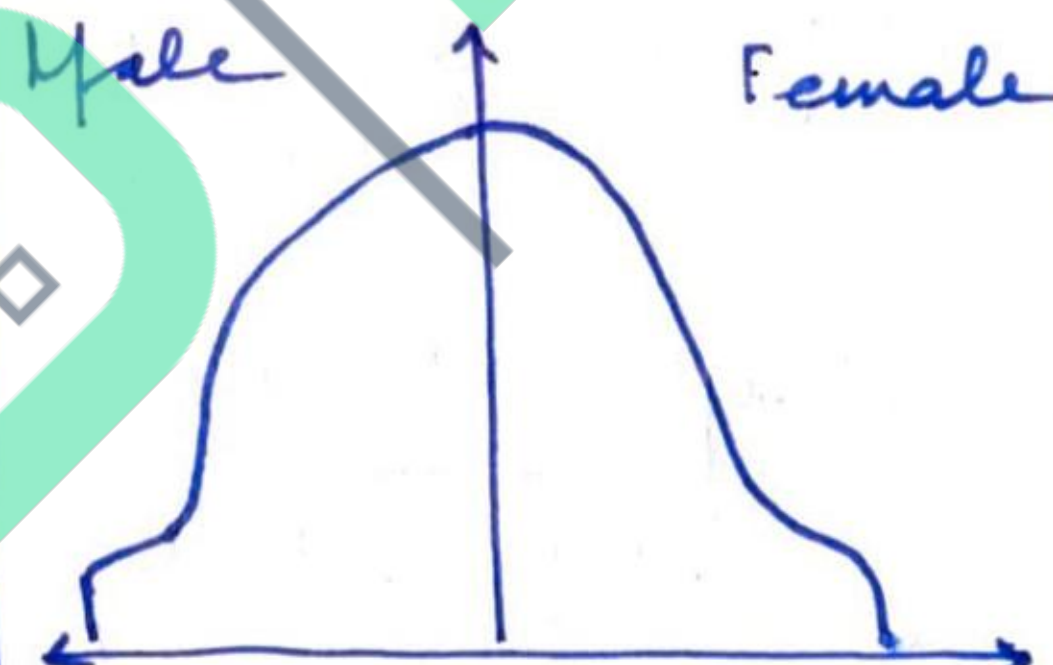


fig4: Intermediate population pyramid

x Intermediate pyramid section lacks mention of Notestein's Demographic Transition Theory which explains this transitional phase!

x Examples are too generic (USA, Japan)
- specify exact demographic data points!
E.g., Japan's 28% population above 65 years!

1. Moderately broad base - reflect declining birth rates.
2. Expanding middle - rising working age group.
3. Narrow top - lower aged population but improving longevity.
4. Vase or dome shaped.
5. Late stage 3 of DTM.
6. Reflects trend of Demographic dividend and high human resource potential.

eg India, Brazil, Indonesia

Thus, population pyramids serve as tools of demographic diagnosis, revealing not only fertility and mortality but also the economic, social & health trajectory of a country.

Improvements :-

Add UN Population Division's classification system for these pyramid types with specific dependency ratio ranges
- Include 'Constrictive' pyramid type (narrow base, bulging middle) seen in China post-one-child policy
- Mention how COVID-19 has affected mortality patterns in different pyramid types (especially regressive pyramids with aging populations)

Conclusion :-

Strong conclusion highlighting pyramids as 'demographic diagnosis' tools - but could've briefly mentioned policy implications of different pyramid types!

Q3.(a) Development of urban settlement forms require a complex support system of transportation and external food supply. Comment with examples. 15m

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Urbanisation is not merely a spatial process, but a logistical one too, requiring interplay between transportation and external food supply.

Need for Transport infra in Urban settlement development.

1. Roads and metro support functional city form and intra-city connectivity.  eg Delhi Metro in NCR.

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2. supports commuter flow enabling daily movement from peri urban regions  eg Delhi Merut - RRTS movement.

3. Shapes Urban morphology by guiding linear or nodal expansion along transport corridors & hubs.

 eg Kolkata's ribbon development.

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Marks: 7.0

Positives :-

You've demonstrated strong conceptual understanding of urban-rural linkages through food systems. Your examples are mostly relevant and contemporary (RRTS, COVID impacts). The structure is clear with good categorization of points.

Introduction :-

Good start connecting urbanization to logistics! But where's the 'Comment' part? The intro should establish your stance on how complex these systems really are.

Body :-

+ Excellent categorization of transport infrastructure impacts on urban form!

+ Smart inclusion of the Yangtze River Delta as a case study showing integrated transport systems!

x Your diagram description mentions 'clusterization patterns' but doesn't explain how transport shaped these patterns

4. Promotes regional integration —
urban core to hinterland connectivity

eg High altitude roads by BRO.

5. Catalyst for Economic clusters and
promotes emergence of agglomeration

eg Bhiwandi along NH3.

Case study - Yangtze River Delta Corridor

- Integration of rail,
air & sea.

- Shanghai - global
mega city

- High trade functional
flows.



Role of External Food Supply Systems.

1. Cities as consumption centers depend
on rural hinterland for food
supply. eg Mumbai fed by
Nashik belt.

2. Demand for cold chains and
storage for perishables increases.

x Food supply section lacks depth on
supply chain complexity - Christaller's
Central Place Theory would strengthen
your argument here

x 'Food deserts' concept is excellent but
underdeveloped - link to socioeconomic
inequalities in urban access

+ Good connection between polycentric
urban forms and decentralized food
supply nodes!

Eg Delhi Sadpur Mandi - refrigerated transport

3. Urban Rural linkages reinforce interdependence through food systems

Eg Bengaluru's reliance on Kolar for dairy

4. Food security and food deserts arising out of supply chain shocks

Eg Chennai food shortage during Covid 19.

5. Polycentric cities need decentralised supply nodes. Eg London's multi-node food distribution model.

Way forward

- 1) Equitable transport penetration for food security
- 2) Urban agriculture to curb over-dependence (Aquaponics)
- 3) Sustainable storage infra for transport and food supply chain stability

Thus, high connectivity and resilient food system will ensure inclusive urban expansion.

Improvements :-

Add Burgess's concentric zone model to show how transport historically shaped urban morphology

-Include 'last mile connectivity' challenges in food distribution - critical for urban poor

-Mention how digital platforms (e-commerce) are transforming urban food supply chains - crucial contemporary dimension

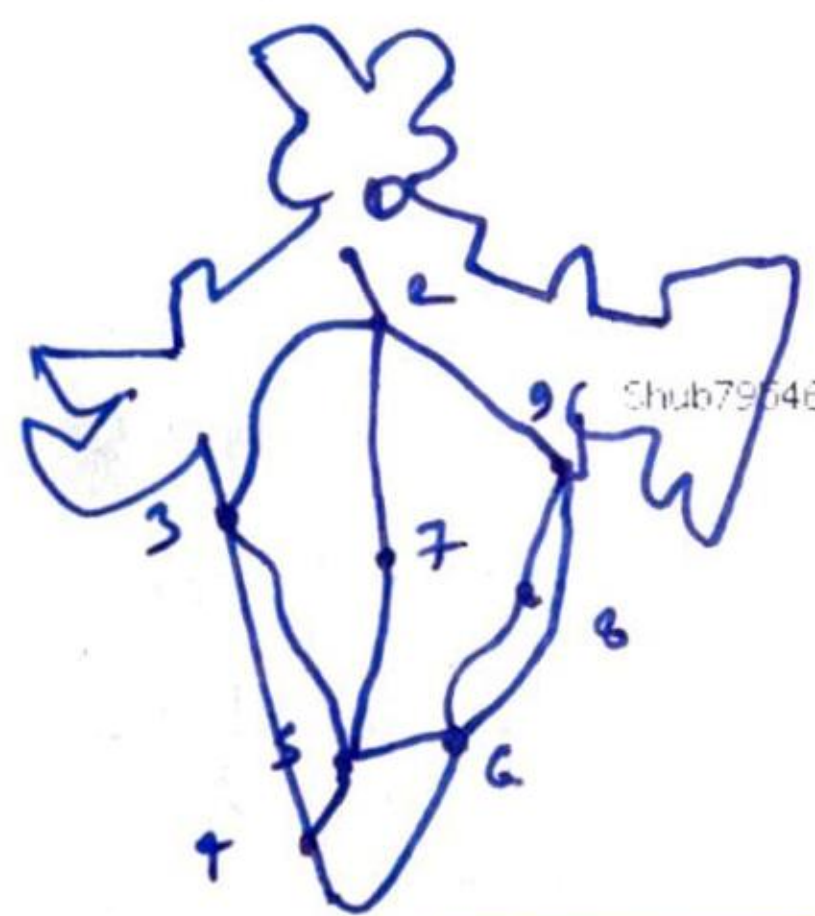
Conclusion :-

Your conclusion is action-oriented but misses the critical evaluation aspect. Where's your assessment of how these systems interact? Remember the directive was to 'Comment'!

Q3.(b) How does trade influence the economic development of regions? Discuss with examples from India's industrial corridors and trade hubs. 15m

As per Gunnar Myrdal - Trade is the lifeblood of regional economies; it shapes space as much it drives growth.

Role of Industrial corridors and trade hubs in driving regional economic development.



- 1 - Amritsar
- 2 - Delhi
- 3 - Mumbai
- 4 - Kochi
- 5 - Bengaluru
- 6 - Chennai
- 7 - Nagpur
- 8 - Vijay
- 9 - Kolkata

fig: National Industrial Corridor Development Program

1. stimulates Industrial Growth and Urbanisation by attracting industries and workforce.

eg DMIC fosters Node based urbanisation

2. Encourages infrastructure development

eg Chennai - Bengaluru Industrial corridor

Marks: 8.5

Positives :-

Strong grasp of regional economic concepts! Excellent balance between theory and Indian examples. Structured approach with both positive and negative impacts shows mature understanding of trade-development nexus.

Introduction :-

Excellent opening with Gunnar Myrdal's perspective on trade as 'lifeblood' - immediately establishes theoretical foundation! Map inclusion shows preparation.

Body :-

+ Brilliant map showing NICDP locations - visual spatial understanding demonstrated!

+ Excellent use of economic geography concepts like 'backwash effect' and 'growth poles'!

Point #1 mentions 'Node based urbanisation' but doesn't explain DMIC's specific nodes like Dholera SIR or Neemrana - add one!

Point #3 on Jalandhar sports goods needs quantification - '80% of India's sports equipment' would strengthen example

enhances port connectivity.

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3. Generates Employment and Ancillary Activities via fostering forward and backward linkages

 Sports good industry of Jalandhar

4. Promotes Technological upgradation and skill development through diffusion of innovation

 Precision diamond cutting - Surat

5. Facilitates Capital Accumulation and Market Expansion as profits are re-invested into expansion.

 Ahmedabad textile park.

6. Diversifies regional economies by curbing overdependence on primary sector

 Vishakhapatnam - thriving port economy.

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7. Global Integration in supply chains

 Gurugram automobile cluster.

Point #7 on global integration is underdeveloped - add 'Gurugram hosts 70% of Maruti-Suzuki's supplier network'

Negative impacts section brilliantly balances the answer with spatial inequality perspective!

Mumbai vs. Vidarbha example perfect for illustrating Hirschman's polarization theory!

Negative Impacts of Trade as a driver of Regional Development . Shub79546

1. Uneven spatial disparity due to trade hub concentration - causes backwash effect .  Mumbai vs. Vidharbha
 2. Urban sprawl and gentrification on periphery of Trade cores .
 NCR urban sprawl
 3. Growth pole effects and distress migration - pull effect of trade hubs .
 Bihar MP outmigration to Delhi + Mumbai
 4. Internal market disruptions due to cheap imports  Chinese goods dumping
 5. Exclusion of traditional trade centers and industries  Varanasi
Traditional crafts declining
- Hence, equitable corridor planning and inclusive trade facilitation are key to national economic integration

Improvements :-

No mention of SEZs as trade hubs - add 'SEEPZ Mumbai generates \$7 billion exports annually'
- Missed discussing Sagarmala's port-led development model crucial for maritime trade corridors
- No reference to Krugman's New Economic Geography theory on trade concentration and agglomeration economies

Conclusion :-

Conclusion lacks punch! Instead of just saying 'equitable corridor planning', add specific policy recommendation like 'Special Node Development Fund for lagging regions as recommended by NITI Aayog'.

Q3.(c) Examine the role of geopolitical and strategic interests in shaping India's political boundaries and territorial disputes. 20m

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Boundaries and territorial disputes are key determinants of India's geopolitical policy and action.

Role of Geopolitics in shaping political boundaries

1. Colonial legacy and disregard of geo ethnic realities in British cartography has caused disagreements
eg 1914 McMahon line without Chinese consent.

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2. Prioritisation of political balance over geographic continuity has caused resource disputes

eg Radcliffe line - loss of Punjab's irrigation potential.

3. Himalayas act as a strategic buffer zone against China

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4. Ocean Periphery and strategic Islands provide venues for

Marks: 9.0

Positives :-

Your answer demonstrates excellent knowledge of India's boundary disputes with relevant examples. The structured approach separating boundary formation from specific disputes works effectively. Diagrams (though not evaluated) show good application of cartographic knowledge to geopolitical analysis.

Introduction :-

Good start with a crisp statement linking boundaries to strategic policy, but could be more specific about how geopolitics shapes boundaries rather than just stating they're connected!

Body :-

+ Excellent organization with clear distinction between 'shaping boundaries' and 'territorial disputes'!

+ Strong use of specific examples like McMahon line, Radcliffe line that directly support your points!

x 'Colonial legacy' point needs explicit connection to how it shaped India's current geopolitical thinking, not just historical fact!

x Your point on 'Ocean Periphery' needs to mention India's maritime doctrine and how it influences boundary policies!

marine diplomacy and geo-economic control.

eg A&N Islands - strategic outpost overlooking Malacca Strait

5. Geopolitical alignment post 1947
focusing on securing borders against rival powers.

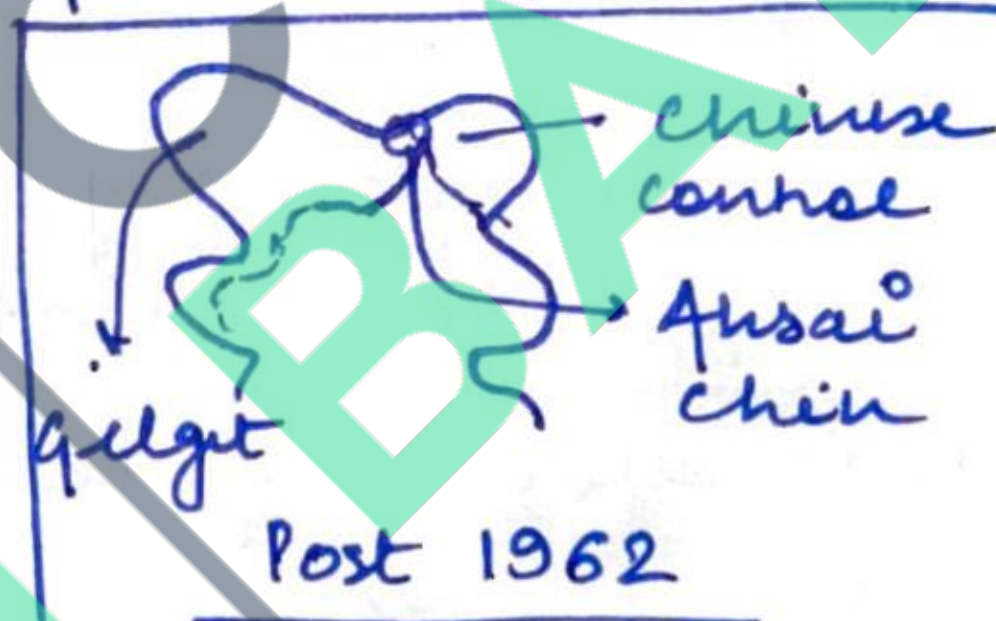
eg 1975 Integration of Sikkim

6. Territorial assertion via infrastructure development to claim sovereignty.

eg Srinagar DBO highway project.

Case study - Line of Actual Control.

- De facto boundary after 1962 war
- CPEC in Gilgit challenges Indian claims



Shub79546 Strategic Interests Behind Major Territorial disputes

1. Kashmir Dispute (India Pakistan) -

Control over Himalayan water towers and military buffers.

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eg Siachen glacier strategically important

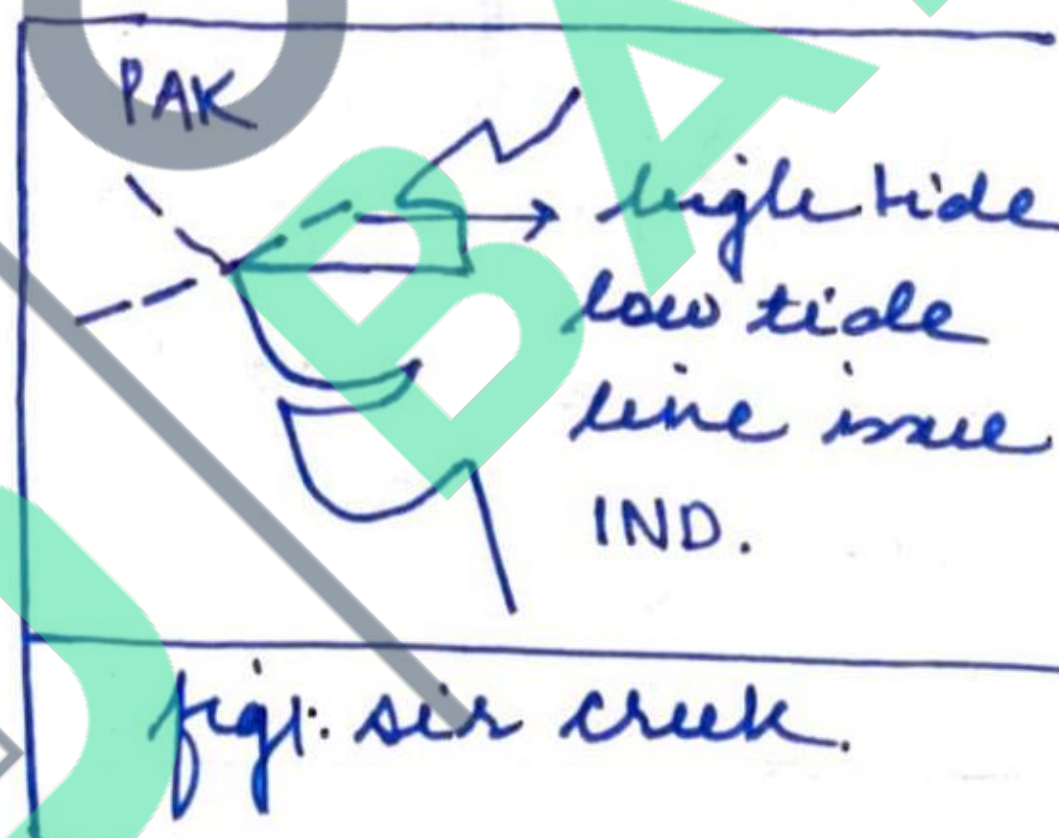
2. Arunachal Pradesh (India-China) - China's claim based on strategic buffer and political symbolism

eg Tawang - high geopolitical stakes

3. Aksai Chin occupation by China - strategic road connecting Tibet - Xinjiang

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4. Sir Creek dispute (Ind-Pakistan) - Maritime dispute crucial for oil exploration. (fig 1)



5. Kalapani - Limpyaduna Dispute (India-Nepal) - strategic trijunction controlling access to Tibet (fig 2)

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x Kashmir dispute analysis lacks mention of China's role making it a trilateral geopolitical contest - add 'CPEC through PoK' as strategic concern!

x Sir Creek diagram mentioned but analysis lacks EEZ implications (200 nautical miles of economic rights)!

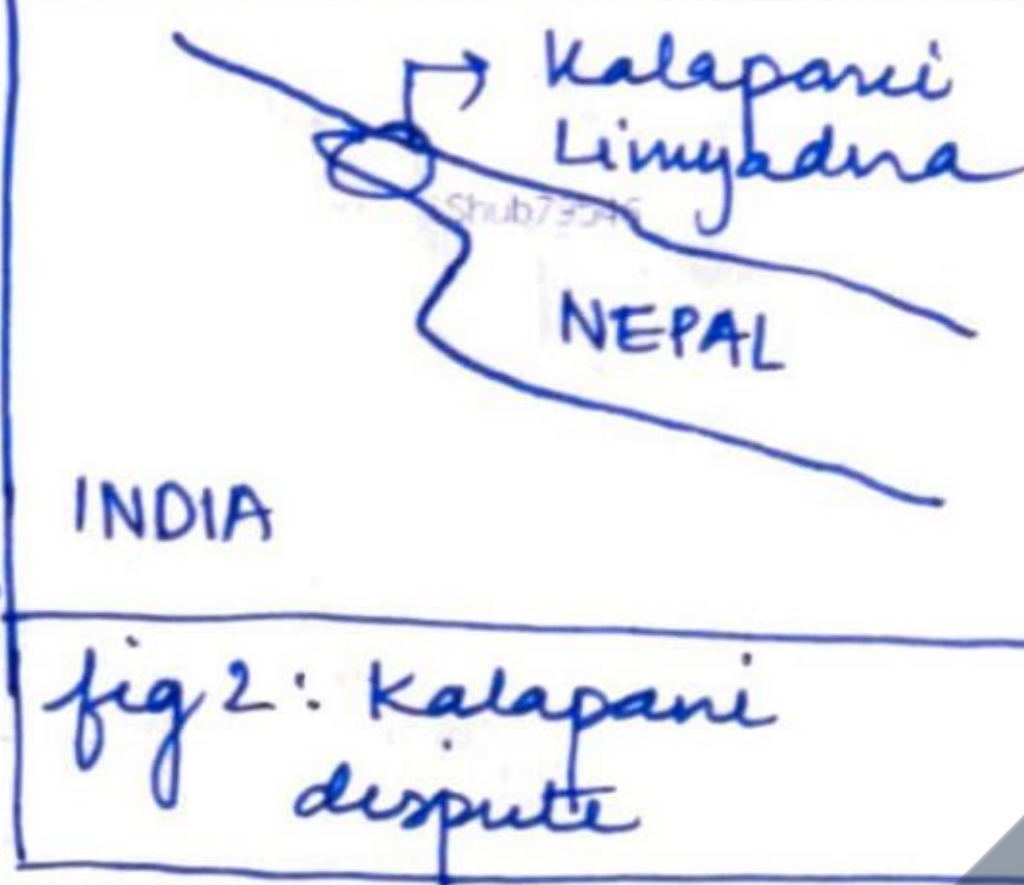
x 'Way Forward' section feels disconnected from the question - replace with how these strategies reflect India's evolving geopolitical interests!

6. Land boundary Agreement with Bangladesh (2015) - aimed at resolving enclaves for better border security fig 162 enclaves exchanged

Way Forward

- 1) Strategic autonomy during bilateral negotiations.
- 2) GIS and Water shed principle to determine northern boundaries
- 3) Tech upgradation of border areas

India's political boundaries are not just static cartographic lines but dynamic markers of national identity. Sustainable negotiation and infrastructure assertion via diplomatic balance should be utilised for resolution.



Improvements :-

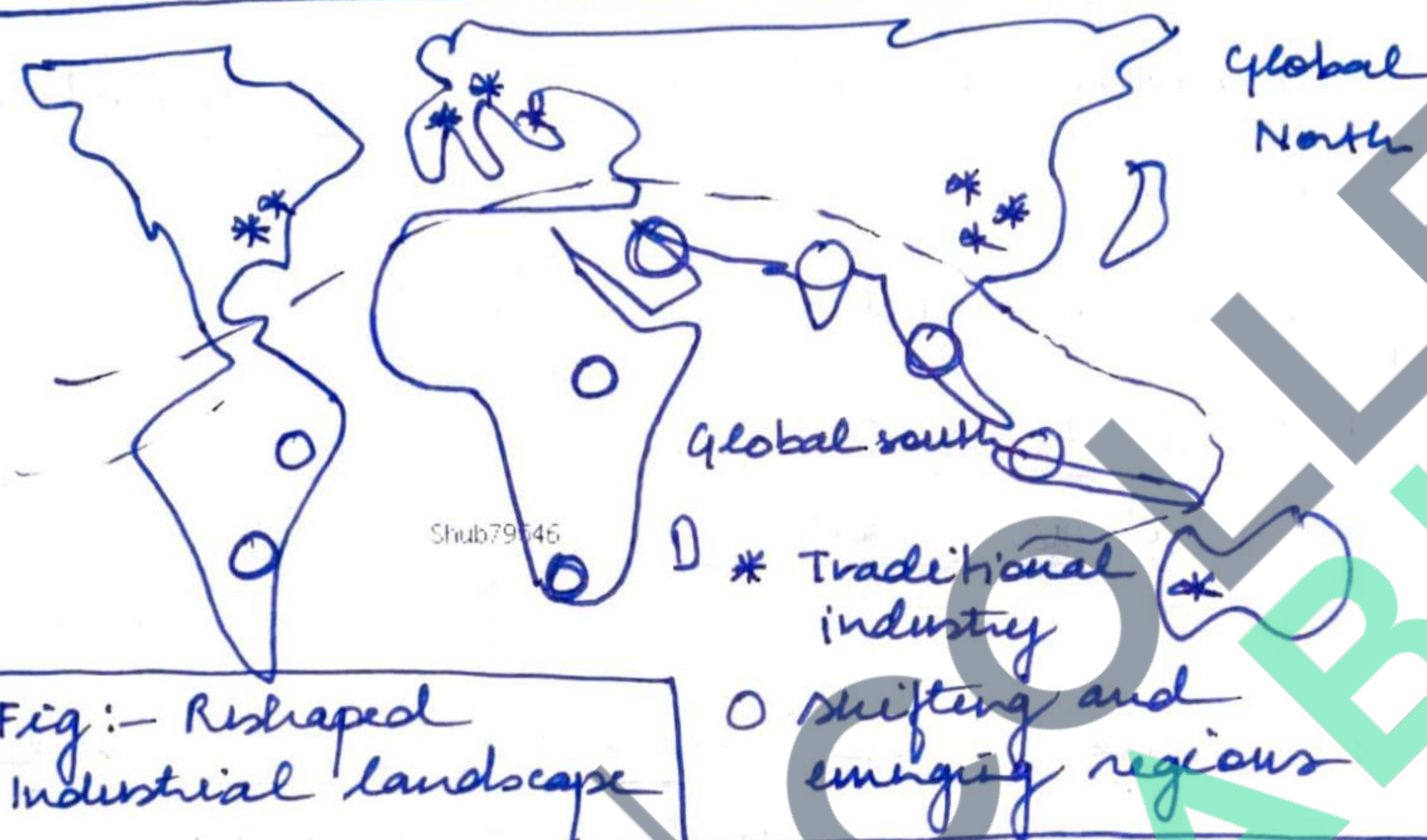
Add 'Mackinder's Heartland Theory' influence on India's northern boundary concerns and Central Asian policy!
-Include 'String of Pearls' vs 'Necklace of Diamonds' maritime geopolitical contest shaping India's island territories policy!
-Mention 'Chicken's Neck' (Siliguri Corridor) vulnerability as geopolitical factor in India-Bangladesh-China relations!

Conclusion :-

Strong conclusion highlighting the dynamic nature of boundaries, but missed opportunity to directly tie back to the question's focus on 'examining the role' of geopolitical factors!

Q4.(a) How global supply chain dynamics and trade wars are reshaping the industrial landscape of the 21st century. Discuss 15m

The world is moving from a hyper globalised supply chain to a multilateral integration guided geostrategic convenience.



Impact of Global Supply chain Realignment

1. Shift from globalisation to Regionalisation - Rise of "China + 1"

strategy post covid 19.

eg Apple shifting to Vietnam & India

Marks: 7.25

Positives :-

Your answer demonstrates excellent grasp of contemporary trade dynamics with relevant examples like CHIPS Act and Ethiopia's expansion. The structure clearly separates supply chain impacts from trade war effects, making it easy to follow.

Introduction :-

Good concise opening that captures the shift from hyper-globalization to geostrategic integration! But needs to directly address 'how' from the question prompt.

Body :-

+ Excellent use of 'China+1' strategy as concrete example of regionalization!

+ Brilliant inclusion of IMEC as alternative trade route example - shows current affairs knowledge!

x 'Nearshoring and Friendshoring' section needs specific industry examples, not just MSP which is primarily a mineral initiative!

x Your map diagram lacks specific industrial clusters that have emerged due to supply chain shifts - where exactly are the new nodes?

2. Nearshoring and Friendshoring trends :- Rise of ^{Shub79546} multilateral trade blocs and supply chain monopolisation eg Mental Security Partnership

3. Increased decentratization of production hubs of critical technology
eg semiconductor fab in India

4. Rise of New Industrial nodes in global south. eg Ethiopia economic expansion

^{Shub79546} 5. Bothenecks restructuring traditional trade routes. eg IMEC envisaged as alternative to Suez Canal

Role of Trade Wars in Reshaping Industry Patterns

^{Shub79546} 1. US-China Trade War - Tariffs forced forced relocation of industries

2. Strategic Nationalism in Trade Policy. eg US CHIPS Act

x 'Techno nationalism' point is strong but needs explicit mention of semiconductor industry beyond just Huawei!

x The 'Way Ahead' diagram feels disconnected from the main analysis - how do these solutions directly address the reshaping discussed?

+ Excellent mention of CBAM as protectionist measure - shows policy awareness!

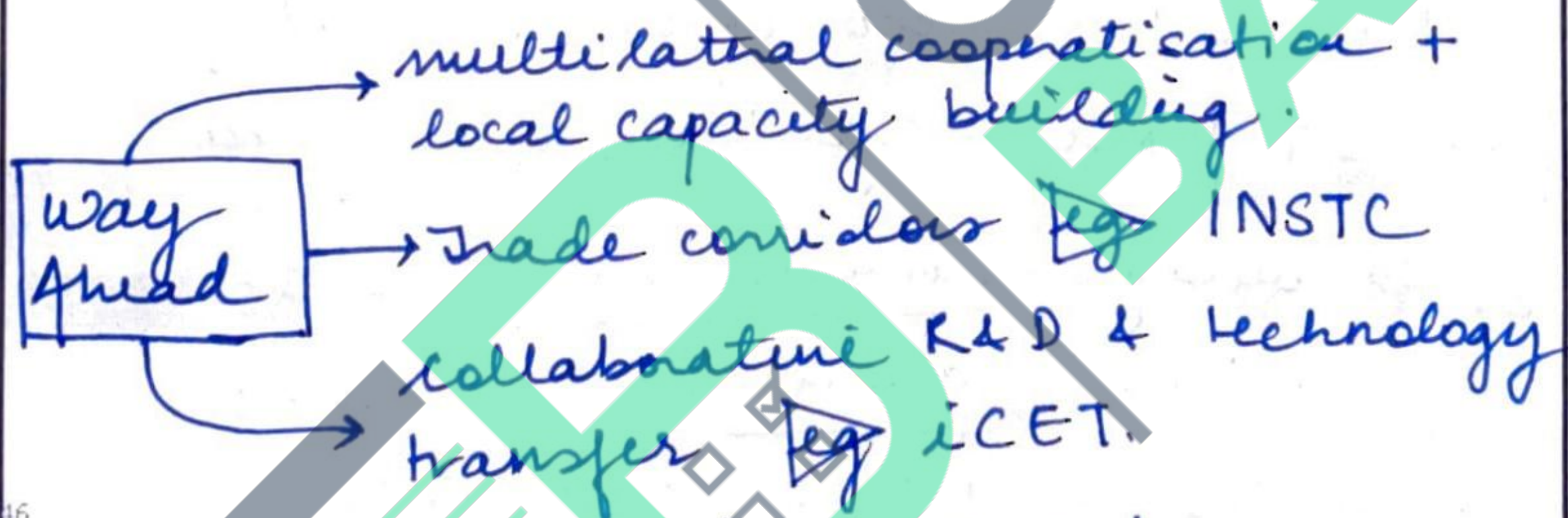
3. Techno nationalism influencing innovation geography, causing shifting of R & D to neutral zones.

eg Huawei moving out of western economies.

4. Rise of protectionist measures - increasing anti dumping and tariff barriers

eg EU's CBAM.

5. Supply chain Weaponisation and Trade Sanctionism making trade a geopolitical tool. eg Western sanctions on Iran & Russia.



Hence, geopolitics has become a key determinant along with classical factors to determine industrialisation

Improvements :-

No mention of critical 'reshoring' trend in US/EU manufacturing sectors (e.g., Intel's \$20B Ohio plant) which is central to industrial landscape change

-Missing discussion of digital trade/services reshaping - not just physical goods (e.g., cloud sovereignty laws affecting tech industry location)

-No reference to labor market impacts of industrial relocation (e.g., Mexico's manufacturing boom from nearshoring)

Conclusion :-

Strong conclusion linking geopolitics to industrial determinants, but could be more forward-looking about future industrial landscape implications.

Q4.(b) "Functional specialization of towns promotes growth but limits sustainability." Discuss with reference to Indian urban settlements. 15m

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Functional specialization of urban settlement refers to the dominance of a particular economic function - driving growth & limiting sustainability simultaneously.

Driver of Urban growth in India

1. Promotes economic clustering and growth pole agglomeration.

eg ^{Shub79546} Surat diamond industry

2. Facilitates economies of scale.

eg IT park - cyberhub, Gurgaon.

3. Encourages investment and industrial growth - attracting domestic investors and FDI.

eg Bio-tech parks in Hyderabad.

4. Boosts employment and skilled migration - functional identity

Marks: 8.0

Positives :-

Your answer demonstrates excellent knowledge of India's urban landscape with city-specific examples. The structure clearly separates growth drivers from sustainability challenges, making your argument coherent despite word constraints.

Introduction :-

Good opening that directly addresses the question by defining functional specialization and its dual impact. Could be stronger with a brief mention of India's urban hierarchy!

Body :-

+ Excellent use of specific city examples for each point - makes your answer evidence-based!

Your 'Driver of Urban growth' section is well-structured but misses mentioning Christaller's Central Place Theory which explains functional hierarchy!

The Jamshedpur case study is brilliant but incomplete - add Myrdal's theory of cumulative causation you've mentioned to strengthen theoretical foundation!

+ Good inclusion of contemporary policy frameworks like Smart Cities and Gatishakti!

attracts specific skill set.

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eg pan India talent to Bengaluru for IT

5. Increase export potential and global integration of a region.

eg Nagpur as horticulture hub & food processing center.

6. Supports infrastructure development and core functions - eg GIFT City enabling finance led development.

Unsustainability & Over-specialization Risk

1. Vulnerability to economic shocks during sectoral downturns.

eg Pune Automobile sector during chip shortage.

2. Environmental degradation due to sector specific emissions and over use of specific raw materials.

eg Ganga pollution - Kanpur leather industry.

Environmental degradation point lacks mention of carrying capacity concept - crucial for sustainability analysis!

Your diagram is too simplistic - should show core-periphery relationship with resource flows!

3. Lack of employment diversification

limiting youth employability
eg Bhilai's steel industry driven economy.

4. Exclusionary urbanisation and migrant face crisis of basic amenities. eg Ghatliabad slum expansion.

5. Urban Rural Disconnect and Regional Imbalance.

Case Study | Jamshedpur.

- mining specialisation
- cumulative causation
↳ backwash effect.
- surrounding regions capital
↳ labour deprived



Way Forward | 1) Mixed land use planning

2) Urban diversification - smart cities mission.

3) Multimodal transport - Gati Shakti.
National Urban Policy Framework should use a multidisciplinary approach to ensure SDG-11

Improvements :-

No mention of Fainstein's 'Just City' concept or Harvey's spatial justice theories which are central to urban sustainability debates!

-Missing discussion on informal economy in specialized towns - crucial for Indian urban context (e.g., Dharavi's recycling specialization)!

-No reference to National Commission on Urbanization (1988) which first addressed functional classification of Indian cities!

Conclusion :-

Conclusion offers solutions but lacks a decisive statement on the balance between growth and sustainability. Add a one-liner on how India can achieve this balance!

Q4.(c) "What role does the National Interlinking of Rivers Authority (NIRA) play in fast-tracking India's inter-basin water transfer programmes? Critically evaluate its institutional strengths and gaps." 20m
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The Interlinking of Rivers program was conceived to tackle the spatial disparity of water availability in India

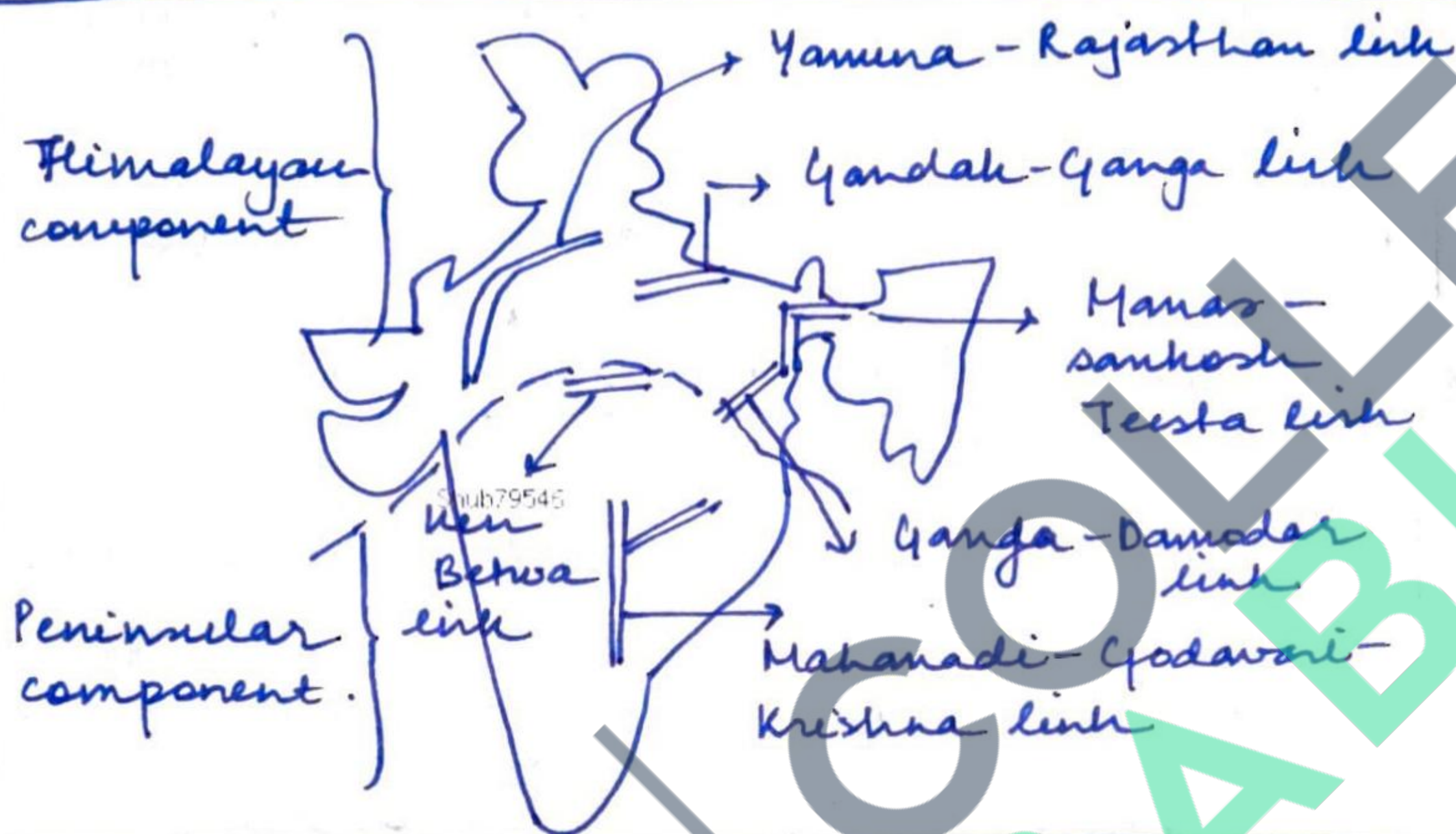


fig: some components of linking program

Role of NIRA in Advancing Interlinking Projects

1. Centralised policy formulation and coordination among centre, states and local bodies. Eg Clearing Ken-Betwa Phase I bottlenecks

Marks: 8.25

Positives :-

You've maintained excellent balance between roles, strengths and limitations. Good use of specific project examples throughout. The structure is logical and follows the directive keyword 'critically evaluate' effectively.

Introduction :-

Your introduction is too generic! Needed to specifically mention NIRA's establishment in 2021 as a dedicated authority under Ministry of Jal Shakti. Missing the urgency context - 40% water stress by 2030!

Body :-

+ Excellent diagram showing both Himalayan and Peninsular components - visually communicates the national scale!

Your 'Role of NIRA' section is well-structured with specific examples like Ken-Betwa linkage!

'Centralized policy formulation' point lacks mention of NIRA's statutory powers under River Boards Act, 1956!

'Single window clearance' - no mention of NIRA's coordination with Forest Advisory Committee and NGT! Critical omission!

2. Single window clearance for environmental, forest and investment related permissions

3. Promotes Institutional basin level integrated water resource management.

 Peninsular - Himalayan linkage

4. Enhance interstate coordination and MoUs.

 UP - MP mediation for Ken Betwa

5. Houses technical, legal and socio-environmental wings to oversee design, rehabilitation and monitoring

 Study of K-G linking

6. Can facilitate transboundary negotiations with Nepal, Bhutan and Bangladesh

 Karnali, Sapt Kosi linking with Nepal

Institutional Strengths of NIRA

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1. Legal mandate and authority provides insulation from political interference
2. Integration with National Water Developmental Agency avoids policy fragmentation
3. Composed of hydrologists, economists, ecologists etc - Technical expertise
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4. Mandates public hearing and compliance to environmental impact assessment eg scrutiny of Par-Japi - Narmada EIA before clearance
5. NIRA aligns with water sustainability missions like Jal Shakti Abhiyan

x 'Transboundary negotiations' point ignores the Teesta water sharing complications with Bangladesh! Add Ganges Water Treaty 1996 reference!

x 'Legal mandate' strength is vague - NIRA operates under executive order, not parliamentary legislation! Factual error!

Good point on 'constitutional ambiguity' but missed Article 262's relevance to inter-state water disputes!

x 'Techno-centrism' criticism needs specific mention of NIRA's neglect of traditional water conservation methods like johads and tanks!

Limitations of NIRA

1. Constitutional ambiguity - Water is a state subject, threat to federalism
2. Weak social and ecological safeguards: eg Ken Betwa threatens Panna Tiger Reserve.
3. Over reliance on Techno centrism
eg Neglect rainwater harvesting.
4. Transparency and grievance redressal gaps eg RTI - delay in EIA disclosures
5. Limited local participation - Panchayats underutilised.

Way Ahead

1. Strengthen ecological safeguard
 2. Stricter EIA oversight.
 3. Grass Panchayat participation
- NIRA's success depends less on technocentricity and more on participatory collaboration & sustainable governance.

Improvements :-

Add NIRA's funding mechanism through National Perspective Plan with ₹44,605 crore allocation for priority links!

-Include NIRA's conflict with existing bodies like Interstate River Water Disputes Tribunal and River Basin Organizations!

-Mention NIRA's role in climate adaptation - managing 1,869 BCM water resource against projected 1,137 BCM demand by 2050!

Conclusion :-

Conclusion lacks punch! Should have emphasized NIRA's transformative potential in addressing India's 80% seasonal rainfall dependency while balancing ecological concerns. Too vague!