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1. Answer the following in about 150 words:

a. On the outline map of India provided to you, mark the location of all of the following. Write in your QCA Booklet the significance of these locations, whether physical /commercial / economic / ecological /environmental /cultural, in not more than 30 words for each entry: (2 x 10 = 20 Marks)

(1) Chilika
   - Wetland under Ramsar
   - Odisha State
   - Global bird biodiversity hotspot
   - Tourism = important for local economy.

(2) Thane Creek (Maharashtra)
   - Important for bird biodiversity

(3) Prayagraj
   - erstwhile Allahabad
   - Confluence of 3 rivers at Prayag (Ganga, Yamuna, mythical Saraswati)
   - High relevance in cultural, pilgrimage and regional geographies of place.

(4) Rajaji Tiger Reserve
   - Pilibhit (Terai region)
   - Only Tiger Reserve of UP
   - Has Gomati river from Gomati tal
   - Important for biodiversity.
(6) **Vanmorita**
- In Andaman and Nicobar Island
- Important for defence and maritime security (geopolitical)
- Also has a class of submarine in its name.

(7) **Banaras river**
- Tributary of Chambal
- From Assam
- Sees high pollution

(8) **Tantia Tilly**
- Meghalaya
- In news due to rat hole mining
- Significant because of ecological fragility and low development of Moneypond tribal stock

(9) **Una**
- Was in news because of vigilantism (Gujarat) = important to study in cultural and human geography

(10) **Dahod**
- Has Petrochemical refinery (Gujarat)
- \( \text{Relevance} = \text{Employment} \)
- Must also be environmentally monitored
b. Examine the rational for Pradhan Mantri Jan Arogya Yojana (PMJAY).

**PM Jan Arogya Yojana is a health scheme with following components:**

1. National Health Protection Scheme (Insurance)
2. 1.5 L PHC -> Health and Wellness Center

**Rationale**

1. Health and Wellness center

   According to epidemiologist Abdel Omran, as a society demographically transitions:

   - Infectious, Communicable
   - Lifestyle diseases

   However currently most focus on 3rd and 2nd care

   Hence focus must shift

   ![Diagram showing the shift from 3rd care to 2nd care and new center introduction]
2. **NUPS**

- Current RSBY saw roughly 10% coverage and high exclusion errors.
- Users ICT (JAM triinity)

**Diagram:**
- Central Indian tribal belt
- Hills
- Islands
- Poorer zones with disease prevalence
  - Here financial burden can be minimised.

**Way Forward**
- Must take into account emergence of new diseases like ebola etc. and be part of a coordinated national strategy.
c. Assess the role of UDAN scheme in providing regional connectivity in India.

Airports serve as growth poles of development and facilitate higher economic mobility of labor and even regional connectivity.

UDAN
- Aims to provide VGF to flights on unvisted routes
- Covers 100 airports
- New phase extends to foreign neighbour countries.

Role in providing regional connectivity
Case Study of North East

Kohima
Mozah
Agartala
Guwahati
Kolkata

- New airports can link unerved areas but to determined by
Climatic determinism.

- Especially post deregulation, airlines worked on profit motive but with UDAN, focus again shifts to human welfare by minimizing regional differences by institutional support.

Challenges:

1. Slow take-off on bidding
2. Lesser institutional incentive
3. Not a panacea and must be complemented by other modes of transport e.g. metallic roads

Hence while UDAN has huge relevance for enhancing regional connectivity, must be complemented by other steps.
d. Analyse the problem of regionalism associated with Kashmir.


Problem of regionalism

1) Region seen as distinct from other Indian states

2) Sense of place seen as a key paradigm of regional geography here

3) Muddled by the role of international powers as Kashmir serves as the pivot area (Heartland/ Rimland Theories)

4) Unresolved border dispute as indicate artificially superimposed boundaries or natural frontiers.

5) Huge unemployment and youthful demography of the region coupled with
Unexploited resources especially create an explosive situation.


7. Distinct Islamic realm on border. Thus overall a mix of colonial forces and socio-political, cultural and economic factors can be seen which has a sound geographical basis.

Way Forward

Geographical phenomenon can be strengthened each other even if different with proper steps by all stakeholders involved such as promotion of economic opportunities, participatory governance and inclusive growth.
2. Answer the following in about 150 words:

a. "Linguistic diversity is a problem in India." Comment.

Linguistic diversity in India is a factor due to different migration streams of tribes, races (Guh), expansion and migration, and diffusion by different religions and hierarchical diffusion under kings and Britishness.

Why a Problem?

1. Promotes centrifugal tendencies, especially post creation of linguistic states.

2. Superimposed upon current demand for Nagraham Khalistan.

3. Creates divides (e.g., Gujarat violence against Eastern minorities)
However on closer examination, it may be seen that instead of being a problem, it is rather an enabler of Indian federalism.

E.g. Indian languages are not rigid = evolution of English, acceptance of Hindi even outside core zones shows strength of Indian languages.

Furthermore, all languages have been provided adequate space. E.g. Constitution allows States to choose languages for official work.

= Despite some divergence as in Southern, Central or other parts of India, largely a tool to create brotherhood in society.
b. Examine the role of Bharatnet in solving rural crisis.

Rural crisis is characterized by:

1. Low agricultural productivity.
2. Lack of industries.
3. Lower socio-economic development of the population.
4. Infrastructure backwardness.

Role of Bharatnet

- Concretely 1.5 L Pandayagat
- Internet as matter of right
- 50 Mbps to all citizens
- 1 GBPS to every Pandayagat

[Diagram of Farm-Market distance (Von Neuman model)]

Faster diffusion of innovation (e.g., advisories) e.g., extension centers

- Via e-Naxi distance may reduce intensity
- May increase

agriculture will get a

ship.
2. Industries

- May get more information
- MEMEs may shift to Internet 4.0 or 2.0 effect, 2.0 defect
- May lead to lesser information asymmetry → agglomeration

3. Social development

- Tele-education and medicine
- Diffusion of modern ideas

   Ability to Process Info
   ↓
   Info Quality and Quantity

   (May Shift from A to B)

Thus broadband has huge role to play in development of small areas.
c. "India's population policy aims to control population without empowering it." Comment.

India was the first nation to have population policy in 1951 and thereafter 1986 and 2000. The higher focus on controlling population than empowerment can be seen in Arocol sterilisation in 1970s.

Where can it be seen?

1. Male contraceptive usage is less than women while women bear all the burden of family planning even if it is treated as a taboo.

2. Hew Jones Model: Birth rate depends on:

- Exposure to intercourse
- Marriage age
- Abstinence
- City living
- Role of religion
- Education
- Social security
- Status of women
From the above, two important factors can be seen.

2. Further, lower doses of EC424, till now, which were in 2nd stage of demographic transition and saw higher growth. Now mission Parivar Vikas is in place.

However, empowerment done by:

1. Focusing on women education (BSP)
2. Behavioural change
3. Awareness generation.
4. Coercion → moral/voluntary

Thus, need is for a new population policy in line with upcoming challenges related to transition.
d. Examine the changing characteristics of rural houses in India.

Earlier characteristics of rural houses:

1. Climatic causes:
   - Courtyard to cool off in tropical country.
   - Roof according to climate e.g., slopy in snow areas.
   - Building material according to local conditions (e.g., bamboo in N-F).

2. Social causes
   - 2 courtyards in North India (separate for women).

3. Economic causes
   - Larger house for richer section.

4. Historical causes
   - Rectangular grand plan due to permanent settlement.
Changing characteristics:

1. Higher urban diffusion via RUE processes
   - leads to local material concentration

2. More homogenous houses
   - loss of culture seen

3. Courtyards still seen yet not a place of bonding anymore
   - more number of shophouses seen
   - Some changes over time can be seen
e. Assess the expected benefits of Pradhan Mantri JI-VAN Yojana.

India currently exports 80% of oil, yet air pollution due to smoke
65% non-renewable energy causes
loss of 12L lives/yr and 3% of GDP

(Lancet)

JI-VAN Yojana
Tribal Bio-Hydrogen Yojana

Benefits:

- Farmers: Additional income
  Get manure → agro ecological
  BNF

- Energy: Security for country
  Rural areas energy

- Livestock: Will increase
  Provide cover to farmers
  In difficult times.
Regional differences may reduce between small and urban areas, less outmigration.

More investment in agriculture and industry in rural areas as they serve as growth sites due to presence of advantage for leading industries and processing firms. This has huge potential.
3. Answer the following:
   a. Examine the major problems faced by the tribes of India. How will the ‘Go Tribal’ campaign help in solving the problems? (20 marks)

   India has following major tribal regions: (Gulia’s classification)

   ![Map of India with tribal regions]

   Major Tribal Regions of India
   - Andaman Nicobar (Negritos)
   - Proto-Australoid (Negritos)
   - Central Indian Proto-Australoid belt
   - Mongoloid

   Major Problems of Tribes

   (1) Social
   - High Exclusion
   - Prevalence of Orthodoxy
   - Emerging diseases (Sickle Cell Anaemia)
   - In South

   (2) Economic
   - Colonial forces changed ancient natural landscape to a more culturally exploitative one.
Tribals are the most excluded section.

- Face issues such as eviction (SC 2019 order)
- Land acquisition, etc.

3) Environmental
- At risk of anthropogenic overuse
- Have certain harmful practices such as jhum.

4) Emerging challenges
- Increasing contact may lead to exploitation (eg. Tarana traffickers) or mishaps (eg. Sentinelese killing Americans).
Eco Tribal Campaign

- Aims to revitalise tribal regions
- Aims at social inclusion and provision of economic opportunities
- Follows plan and approach

and not Chisholtz

- Inclusionary bottom up Gandhi then development

(a) Economic development

- Focus on processing of minor forest produce to serve as group
  (figure 1) points
- Inclusive as focuses on tribal

(b) Social development

- Hoots to reduce mainstream exclusion yet while preserving
Ethnic identity

Political environment

- Aims at upward flow of information via Ceilidh Society and preparation of new leaders.

Environmetal benefits

- Sustainable
- Long term approach

Way forward

- Active center-state cooperation
- Adequate finances
- Participatory, inclusive approach based on humanism while understanding historical geography (existentialism)

The above can help in complementing the role of Go Tribal Campaign among others.
"The number of inter-state water disputes is on the rise in India."

Comment. (15 Marks)

Inter-state water disputes serve as a centrifugal factor in Indian federalism according to Livingstone’s model of centrifugal and centripetal forces. The above are on a rise as can be seen in Tamil Nadu over Caubrey or Mehadatu issue or even Mahanadi dispute tribunal.

Reasons for the above

1. Deterministic/Environmental
   - Lower relevance
   - May be affected by few effects such as natural climatic variations like monsoon due to tropical easterly jet stream or El Nino.

2. Human existence/Posibilism
Overall rise of Cauvery dispute is human creation.

Similar issues are prevalent in dam construction in other areas and even in international arenas e.g. (Indo-Pak 1960)

especially when river courses in youth stage will change due to climatic change and glacial run
Effects of the above

1. Social tension exacerbated by political agents = limit national integration and promote centrifugal forces of federation.

2. Even affect population eg. migrant labor facing violence becomes more important as many Indian states enter last stage of demographic transition can’t afford miss.

Way Forward

- Pen Crop More Drop (PM Krishi Sinchayee Yojna)
- Agro ecological farming (chip irrigation)
- River Basin Management
- Integrated Watershed Management Plan
- Promoting behavioral change
- Changing institutions (eg. 2017 Tribunal Bill)

The above can help towards a long term solution to the problem.
C. “AMRUT aims to reorganize the urban hierarchy in India.” Comment
(15 Marks)

Urban hierarchy refers to the scientific arrangement of settlement system based on their sphere of influence.

- Usually a concept of city in an area.
- Four major basis:
  - Population
  - Functionality
  - Centrality
  - Threshold Population

Studied by Walter Christaller and August von Thoden among others.

Urban hierarchy in India:

1. Population: Class 1-10 Census Towns
2. Functionality: Not enough focus given.
3. RP Misra has said that even though India...
- Is agrarian
- Has lower social development
  - slower diffusion of innovation
  - hierarchy based more on population than centrality.

=> Need is for a **Growth Pole Model**

**Current Indian Situation:**

- Dual urbanisation
- 31% urban population
- Class 5, 6 depopulating
- 44% metropolitan

=> High primary

=> RUC and spread effects very slow.

**Role of AMRUT**

- Sees city as an area
- Works on morphology
- Provides urban amenities

=> Population treated as **Social Capital**
Forever on providing public open space
transport
Functional linkages have
4. Answer the following:
a. Give a reasoned account of the pattern of infant mortality rate in India. (20 Marks)

Infant Mortality refers to the number of deaths in the infant group per 1000 infants. NFHS-4 data shows prevalence of IMR at 40 which is in stark contrast of National Population Policy’s goal of reducing it to 1/1000 infants by 2015.

Pattern of IMR

1. Temporal Pattern
   - Continually decreasing over time
   - May be understood via demographic transition model
     - (1929 Thomson - Weststein model)
DO NOT WRITE IN THIS SPACE

Death rate decreases because of higher tech import

More about social development

Lowest IMR

Economic development

1901 1921 1981

Stage I Stage II Stage III Stage IV

India Today

Demographic Transition Model

1. In I stage, high death rate and especially higher infant mortality.

2. By III and IV stages, higher stages of Rostov's Model are also reached and show more diffusion of technology and social development.

3. Abdel Omran's epidemiological transition model also suggests that with a society with development move ar
However, the prominent role of men in southern states has led to the above role of women. From the above role of women, the sample size of women and climate can be determined. The reason for above is deterministic.
According to Otto Schleter, man changes landscape.

- Insurgency
- Majority

Lower development
- Higher IMR

In addition, reversal of vaccine growth and growing resistance etc. world over is a cause of concern.

Hence the pattern of IMR has been studied.

**Way Forward**

- In line with healthy population as social capital and to establish welfare geography as a key paradigm.

In a young India, focus must be on reducing IMR by faster diffusion of social development as per behavioural changes and government efforts, like Mission Indradhanush or SBM.
b. Formulate a suitable strategy for development of hill area.
(15 Marks)

Hills represent a unique geomorphological feature and show considerable effects on humans in form of environmental determinism.

In India, roughly 1/6 of the area is hilly, having 10% population and has lower HDI indicators.

Challenges of the hill area:

1. Geomorphological - slope instability and hazards
   - Isostatic disequilibrium and earthquakes

2. Climatic challenges - fragile ecosystem
   - Susceptible (e.g. 2013 Uttarakhand)

3. Biogeography - unique flora/fauna at risk
   - Easily degradable soil

4. Human related issues
   - Marxist view: high resource exploitation
   - Malthusian view: overpopulation
   - Often on borders

Tourism & Carrying capacity
In light of above a suitable strategy can be formulated for development of Hills:

1. Economic development (+ environmental security)
   - Agricultural: eco-ecological farming
     - e.g. saffron in Kashmir (JK)
     - e.g. kerajodi or horticulture in Uttarakhand
   - Remunerative and sustainable
   - Industrial: Can set up less polluting industries that require pollution free environment e.g. pharma, optics
     - e.g. Agglomeration in North-East (NE) hubs
       - has lots of water = bamboo paper can be made
   - Service based: Eco tourism can be promoted
     - e.g. Mahastra tribal women trained in biodiversifying knowledge
(2) Social Development

(i) Use of ICT

- Faster diffusion of innovation
  - eg. tele-med.
  - eg. education at CSC

(ii) Government efforts
  - eg. PM Gram Sadak Yojana

(iii) Founding more rural cities
  - e.g. Australian Utopia
  - Linear model of development

Way forward

The above presents a sustainable model and can be built upon by other approaches like coordination with neighboring countries. This can help in realizing the potential of 'little meers' and create new growth points as per R.P. Misra's model.
c. Examine the role of Tier II towns in solving the urban crisis of India.
(15 Marks)

India faces an urban crisis in following ways:

1. Heavily Unstepped Migration (Unlike Ravenstein's Law)
   - Urbanisation = 21%
   - Tier I and II = 70%
   - Metropolisation = 44%

2. Social challenges
   - Development of slums
   - Loss of cultural identity in fast moving anonymous cities
   - Rising crime and collapsing support structures

3. Environmental challenges
   - Malthusian View
   - Population vs. Carrying Capacity
   - E.g. Delhi Sugar, Chennai theatre crisis
Role of Tier II towns in solving above:

1. City in an area approach
   - Can serve as counter magnet to established centers.
   - E.g., Delhi
     - sandwiches
     - Munger (Bihar)
     - Ravankul's stepped migration

2. Economic development
   - Can serve as growth centers.
     - E.g., can have industrial and agri-processing facilities in fertile lands.
     - Gangetic Plain (Bihar is suitable as has flat land)

3. Social relevance
   - Are more culturally rooted in line with new regional geography or Kenneth Frampton's critique
Regionalism as allow room for distinct culture.

Have more room for heterogeneity and allow a political-cultural consciousness to grow as distinct with expansion diffusion of urban culture in Tier 2 cities => more national integration.

Environmental role

- Indicate use of resources such as groundwater at a more decentralised level.

Tier 2 cities have huge role in India.

Way forward

Smart cities aim to capitalise on presence of these growth centers and must be expedited to have a balanced regional growth and an integrated settlement system.
5. Answer the following:
   a. Examine the problem of water security in India. How will the recently launched Jal Shakti Abhiyan help in this regard? (20 Marks)

   The problem of water security (SDG-6) in India can be studied as follows:

   1. Surface Water
      (a) Natural Causes
         - Shifting course of rivers
         - Erosion of soil due to industrial
         - Runoff
         - Changing monsoon pattern
         - Coastal inundation
      (b) Human Causes
         - Agricultural/industrial runoff
         - High usage as growing population

   Impact can be seen in interstate relations (e.g., Karnataka-Tamil Nadu, international relations, India-Pakistan IWT or Indo-China).

   ⇒ By 2030, all 70 BCM may be used (Currently 450 BCM used)
(2) **Groundwater Problem**

(a) **Temporal Pattern**

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In fact, with climate change and increasing urban conurbation, expected to decline.

(b) **Spatial Pattern**

- Himalayan region
- Basaltic groundwater province
- Overexploited Ganges delta
- Show economic determination on extreme possibility

Natural causes:
- Leaching and chemical weakening
- Arsenic West Bengal
- Fluoride Rajasthan

Consolidated province = lower water level

Level of groundwater declining

Time →
The above has implications for social security (high dependence of women, urban areas and small areas on groundwater). In fact even economic development in terms of agriculture and industries depends on water security.

Tal Snakti Abhiyana
- Recently launched in Budget 2019
- No special financing for the scheme
- Has the following role:

1. Convergence of existing schemes under a Jal Sukhya Ministry

2) can bring about faster diffusion of innovations in form of rainwater harvesting or behavioral change by changing mental maps of the people in small areas (eg. resource efficient drip irrigation which also
Prevents salinisation - alkalisation in field (important as 80% groundwater use in agriculture)

2. Complements existing efforts

- Can converge financing of sewage treatment plants

3. Combined focus on groundwater and surface water and may lead to a institutional conference e.g. between Central Water Commission and groundwater board.

Thus the above has huge relevance and must be adequately staffed, strengthened and funded in future for a water-rich India by 2050.
b. Discuss the geopolitical importance of India’s Maritime Boundary.
(15 Marks)

India has a 7500 km long coastline serving as its maritime boundary and the key location in the Indian Ocean Realm.

Characteristics of Maritime Boundary:

1. Continuous and two sided.
2. Largely undisputed except few like Kosi Creek.
3. Present in the current global hotspot due to rise of China.
4. Imparts India a key location.

Geopolitical Importance of the above:

1. Affects regional relations
   - eg. dispute with Pakistan over Kosi Creek or with Sri Lanka over Ram Setu or fishermen issue.
(2) Affects international affairs
- India becomes a member of the New Great Game being played between US and China.
  - US: Pacific → Indo-Pacific (Free and Open)
  - China: Maritime Silk Route (String of Pearls)
  - India: Necklace of Diamonds

- However, positive impact also
  - Indo-Japanese
- Asia African Growth Corridor or India's key role as a net security provider via its Navy.

(3) Has potential for economic growth too.
  - FDI in the economy

(4) Cultural growth will affect geopolitical relations e.g. Project SAGAR.
Thus from the above huge role of India's maritime boundary on geopolitics across various dimension can be seen.

Upcoming issues

1. Climate change, shifting river courses and tougher delineation of boundary (e.g. with Bangladesh).
2. Must serve as frontiers and not cultural/economic hard borders.

⇒ Must aim to strengthen the defence architecture and pursue geopolitical goals at international forums.
c. Evaluate the socio-economic and environmental problems generated by the recent trends in growth and density of population of India. (15 Marks)

India added 180 mn people in 2011-11 compared to 181 mn in the past decade yet the density of population has increased from 324 to 380 (as land area is constant and death rate is reducing).

Problems with such a growth

1. Social problems
   1. Lack of opportunities at native place
   2. Economic survey: clean emergence of outmigrant states

   Lead to social/ethnic conflict, loss of support and leaving behind of a vulnerable demography.

2. Even lead to worsening sex ratio in urban areas (as according to Ravenstein, more men migrate)
(I) More sex related crimes

(III) Higher land fragmentation is also an effect of high growth of population.

2. Economic Problems

(I) Outmigration constantly
   - Malthusian cumulative causation
   - Persistent regional inequalities
     e.g., Bihar, hills

   (II) Lead to more stress on resources such as land, water, and even government finances, causing economic problems in long run.
     e.g., declining groundwater, poorer future agriculture.

3. Environmental problems

(I) Malthusian view
   - Urban areas of hilly Uttrakhand born see resource gap = hazards
(VI) Marxist view

- Poor labor keep accumulating hands to compensate for poor condition while rich and middle class keep exploiting the environment.

- Further complicated by much higher density rise only in some regions such as urban growth poles or coastal colonial poles.

Way forward

As India moves forward in the demographic transition, must look at eco developmental approach of UNEP (e.g. watershed management) while aiming for a balanced regional development (e.g. by areaaly differentiated special area approaches).