

NEXT IAS

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(To be filled by candidate)

Code : TC071

Name of Candidate : ANKIT AGRAWAL

Roll No. : 0602108

Registration Number : PTTP220280 Date of Examination : 09/07/23

Exam Centre : Old Rajinder Nagar ☐

Bhopal ☐

Online ☒

Time Taken: 4:30 PM - 8:00 PM (3hr. 30 minutes)

MTS IGP Batch 2023

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.

Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

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Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. :

(For filling by Examiners only)

Evaluator Code :

Q.No	Pg No.	Maximum Marks	Marks	Total
1	1			
2	3			
3	5			
4	7			
5	9			
6	11			
7	13			
8	15			
9	17			
10	19			
11	21			
12	24			
13	27			
14	30			
15	33			
16	36			
17	39			
18	42			
19	45			
20	48			
Grand Total				

Signature

MACRO COMMENTS



IMPORTANT INSTRUCTIONS

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1. Do not write your name or registration no. anywhere inside this Question-cum-Answer Booklet.
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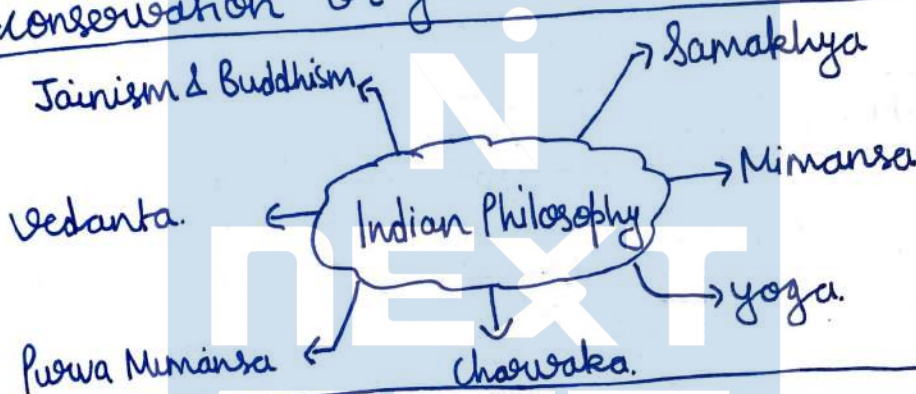
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1. Read the Instructions on the cover page and strictly follow them.
2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
3. Write legibly and neatly. Do not write in bad/illegible handwritings.
4. For rough notes or calculation, the last two blank pages of this booklet should be used. The rough notes should be crossed through afterwards.
5. If you wish to cancel any work, draw your pen through it or write "Cancelled" across it, otherwise it may be evaluated.
6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

Q.1 भारतीय दार्शनिक चिंतन का ताना-बाना उत्तरी भारत का उतना ही ऋणी है जितना दक्षिण भारत का। स्पष्ट कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

The fabric of Indian philosophical thought owes as much to Northern India as to Southern India. Elucidate.
(Answer in 150 words) 10 Marks

Indian philosophy developed during ancient times continues to guide our country in the present times in all aspects be it development, environmental conservation or governance.



Contribution of Northern India

① Jainism → originated in Magadh empire
↳ Right conduct, right action, right belief, no harm to others, chastity

② Buddhism → Lumbini
↳ middle path, golden mean, no desire, etc.

③ Vedanta → Brahmocharya, idea of soul as god

- ④ Charvaka → materialism, ultimate goal of life is pleasure, no re-birth
- ⑤ Bhakti movement → devotion to god through songs & intense praying
↳ e.g. Mirabai, Gurmukh, etc.

Contribution of Southern India

- ① Ramanujacharya → Duality, Prakrit & Soul
- ② Mimansa → Kanada
- ③ Bhakti movement → originated in Southern India (Nayanars)
↳ equality, no caste division, etc.
- ④ Purva Mimansa → Sage Kapila

The philosophy of ancient India acted as basis for development of modern Indian philosophy such as Aniyodaya, environmentalism, spirituality & Vasudev Kuthumbakam.

Q.2

सामाजिक परिवर्तन और सुधार के लिए भारतीय समाज का आवेग औपनिवेशिक शासन के प्रति इसके विरोध की एक प्रतिक्रिया थी। परीक्षण कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

The Indian society's impulse for social change and reform was a response to its opposition to colonial rule.
(Answer in 150 words) 10 Marks

Socio-religious reforms movement in early 19th century also known as Indian renaissance acted as bases for subsequent reforms which had characteristic of anti-colonialism.

Response to opposition of colonial Rule

① Revival of past glory → to build self confidence & self respect against colonialism

beg. Arya Samaj, Shiv Narayan Agnihotri's
~~Sree Dev Samaj~~

② Reform in religious orthodoxy → to fight the idea of religious backwardness forwarded by British

beg. Raja Ram Mohan Roy advocated monotheism, removal priestly domination

③ Education of all Indians → to further advocate propaganda & mass mobilisation against British rule.

↳ eg. J.C. Vidyasagar opened girl school in semi-urban areas, Jyotiba Phule opened Savitri Bai college in Pune.

④ Unification of all Indians → against colonialism by advocating for removal of caste atrocities
↳ eg. INSC pledge against casteism, Brahmo Samaj under K.C. Sen

⑤ Revolutionary movements → eg. Wahabi movement, Deoband movement advocated for jihad against Britishers

Apart from opposition to colonial rule reform movements were also based on ideas of humanism, nationalism & emphasis on knowledge to ensure moral progress of Indian society.

- Q.3 रूसी क्रांति को प्रभावित करने वाले कारक कौन-कौन से हैं तथा इस क्रांति के क्या-क्या परिणाम हैं ? भारतीय राष्ट्रीय आंदोलन पर इसके प्रभाव की विवेचना कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

What are the factors that led to the Russian revolution and what are the consequences of this revolution?
Discuss its influence on the Indian national movement.
(Answer in 150 words) 10 Marks

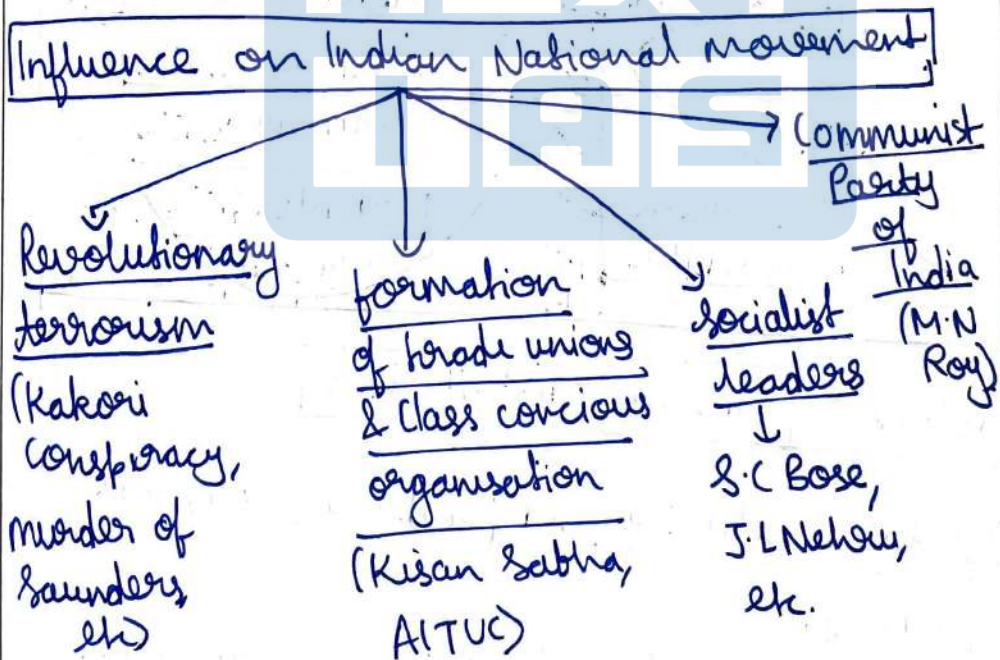
Russian Revolution occurred in 1917 during the ongoing World War 1 with overthrow of Czar rule by masses.

Factors of Russian Revolution

- ① Anti-war sentiment due to mishandling
↳ food supply & huge causality of men
- ② Economic hardship in form of Inflation, debt burden & lack of food supply
- ③ Social & Intellectual awakening (rise of communist & socialist ideas).
- ④ Rise of leaders like Stalin
- ⑤ Rise of Bolshevik party to establish the Soviet and rule of people.
- ⑥ Anti imperialism sentiment among the masses.

Consequences of the Revolution

- ① Establishment of Soviet form of Government
- ② Rise of communism as ideology
- ③ Inspired revolution in other countries like china & Cuba.
- ④ Started the process of decolonisation
- ⑤ Fear of communism led to rise of Nazism & Fascism which ultimately led to World War II
- ⑥ Nationalisation of private land, Industries etc and emergence of centrally planned economy in Russia.

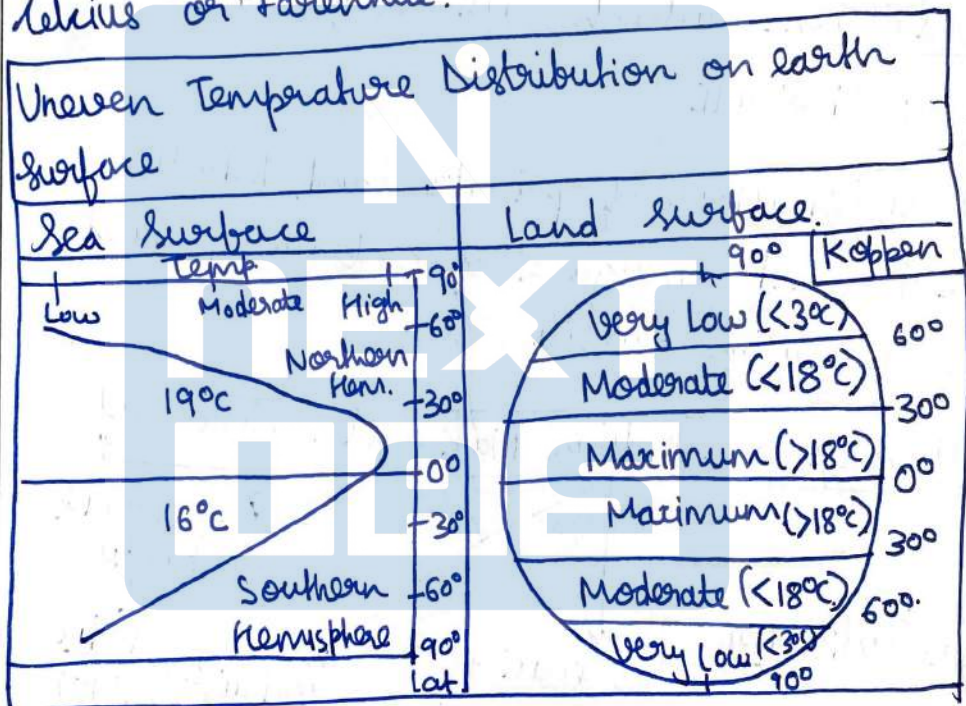


Russian revolution provided the world alternate ideology which became basis of cold war post world War II

- Q.4 पृथ्वी की सतह पर तापमान के असमान वितरण के लिए उत्तरदायी विभिन्न कारकों की चर्चा कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss the various factors responsible for the uneven temperature distribution on Earth's surface.
(Answer in 150 words) 10 Marks

Temperature is defined as kinetic energy of particles in environment which depends on several factors and has uneven distribution. It is measured in degree Celsius or Fahrenheit.



Factors of uneven distribution

① Solar Insolation → depends on several factors.

- ↳ a) Angle of Inclination of Sun rays
- ↳ b) Rotation of earth
- ↳ c) cloud cover
- ↳ d) Duration of day light
- ↳ e) land-water differential

② Ocean currents $\rightarrow$ cold current moderate the temperature of coast (eg. Oyashio, Canary current, etc).

↳ warm current increases the temperature (eg. Gulf Stream increases the temperature of North East coast of US).

③ Altitude $\rightarrow$ temperature decrease with increase in altitude (eg. Darjeeling has temperature range of 5°C - 20°C whereas Delhi has 6°C - 45°C being in same latitude).

④ Local winds $\rightarrow$ eg. Loo increases temperature of region by 3°C - 5°C in summers in UP, Punjab, Rajasthan & Delhi.

⑤ Other factors $\rightarrow$ Urban Heat Island effect, Marine Heat waves, South west monsoon, etc.

Climate change due to greenhouse gas emission is altering the heat budget which is proven by the recent reports of record breaking temperatures in July. Thus there is need for preparing of Net zero targets to ensure balanced heat budget.

Q.5

जलवायु परिवर्तन के कारण हिमनदों के पिघलने का पारिस्थितिकी तंत्र और मानव समाज पर गंभीर प्रभाव पड़ता है। हिमनदों के पिघलने के कारण पर्यावरण पर पड़ने वाले प्रभावों और इस मुद्दे के समाधान के लिए किए जा सकने वाले उपायों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

The melting of glaciers due to climate change has serious implications for the ecosystem and human society. Discuss the effects of melting glaciers on the environment and the measures that can be taken to address this issue. (Answer in 150 words) 10 Marks

According to UNGP report, the Hindukush glaciers are melting rapidly which can threaten the 3 billion population living in these regions.

Effect of Melting Glaciers on environment

- ① Sea level rise → due to increased runoff
beg. rise of 1.2 cm in waters of Gulf of Mexico
- ② Coastal erosions → According to INCOIS, more than 3521 km of Indian coastline vulnerable.
- ③ Change in river regime → overflow of Ganges during summer leading to flooding in upstream
- ④ Deforestation & Disasters → forest submergence & landslides in Himalayan region
↳ 2013 → breaching of moraine dam in Kedarnath due to glacial lake outburst

flood.

⑤ reduced Albedo → positive feedback in climate change mechanism.

⑥ release of toxin & microorganism → from glacier which can cause COVID like pandemic.

⑦ Other Impact → change in microclimate leading to biodiversity loss mainly in case of stenothermal organisms, flooding, water stores, etc.

Measures to Address the Issue.

climate change studies to understand it better.

Technocentric solutions like space mirrors

Sustainable tourism in Himalayas



Glacier Atlas for management (eg. ISRO Atlas)

Glacier melting can have

cascading effect on whole ecosystem thus urgent actions are required by all stakeholders including the community through better environmental awareness, tech solutions, mitigation & adaptation.

Q.6

श्वेत क्रांति भारत के पश्चिमी भाग में सर्वाधिक सफल रही। श्वेत क्रांति की इस क्षेत्रीय सफलता के कारकों की विवेचना (150 शब्दों में उत्तर दीजिए) 10 अंक कीजिए।

The White Revolution was most successful in the Western part of India. Discuss the factors for this regional success of the White Revolution.
(Answer in 150 words) 10 Marks

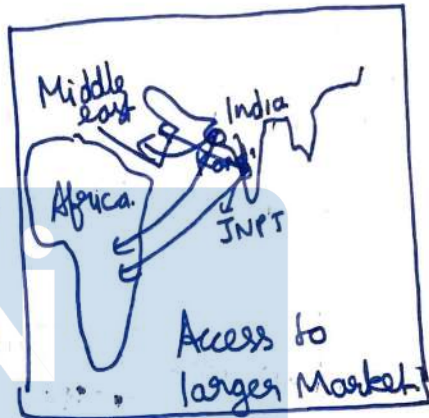
White revolution is related to increasing milk production & productivity in the country which was successful as India became largest producer of milk in the world.

Factors for Regional Success

- ① Geographical conditions → Moderate temperature due to nearness to sea
↳ less diseases in Bovines
- ② Dryland farming → in Maharashtra & Madhya Pradesh, livestock acted as Insurance in these rainfed regions.
- ③ Cooperative culture → Success of AMUL in Gujarat due to economies of scale.
- ④ Use of Hybrid breeds → Instead of indigenous breed as prevalent in Northern India

⑤ Presence of food Processing Industries → like paneer, cheese, etc incentivised farmers further.

⑥ Port accessibility → large export market in Middle East through ports of Kandla & JNPT



⑦ Provision of veterinary care by State Government

↳ Increased productivity & shelf life of milk producing Bovine

⑧ Other factors

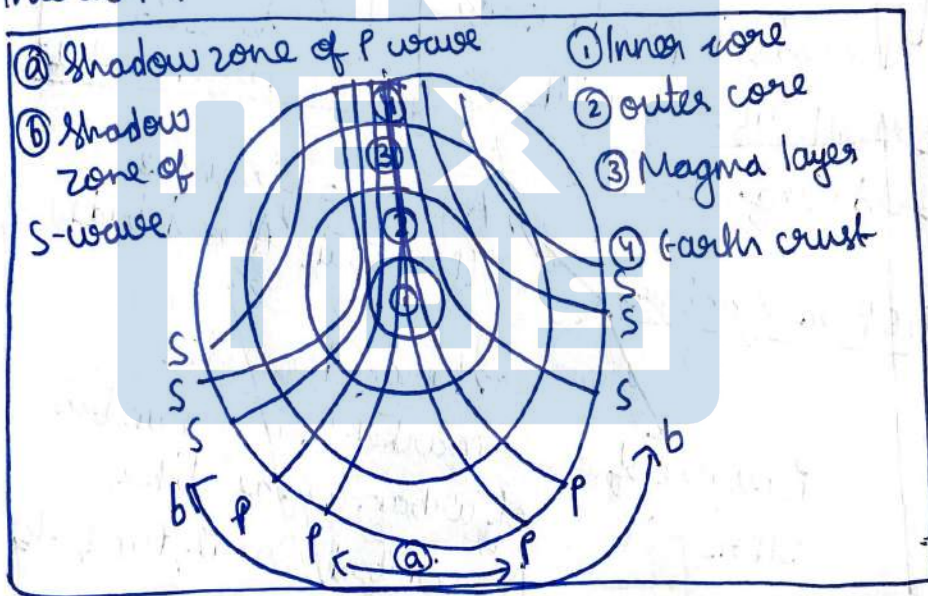
- Access to finances (Mumbai, Ahmedabad)
- large domestic market (large number of urban areas like Ahmedabad, Surat, Pune, etc)
- ↳ Presence of SHGs

With the call of make agriculture climate resilient & doubling farmer income by Salwa Committee has recommended mixed farming thus White Revolution 2.0 should focus on addressing regional disparity.

Q.7 पृथ्वी की आंतरिक संरचना की हमारी समझ में भूकंपीय अनुसंधान किस हद तक योगदान करता है? इसके महत्व का विस्तार से विश्लेषण कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

To what extent does seismic investigation contribute to our understanding of the Earth's interior structure? Analyze its significance in detail. (Answer in 150 words) 10 Marks

Physical condition of earth Interior can be studied through direct or indirect approaches where seismic investigation is considered most practical & accurate way to determine the properties of earth's Interior.



Significance of seismic investigation to determine earth's Interior

- ① P-wave → primary waves, similar to light waves.
- ② S-wave → secondary waves, similar to sound waves.

- ③ light waves has higher velocity whereas sound wave has lower velocity
- ④ light waves can travel through solid, liquid & gaseous medium whereas sound wave cannot travel through solid medium.
- ⑤ These properties of P wave & S wave helps determine the composition of inner layers
- ⑥ It also helps to determine the density of different layers which can help in determining pressure & temperature conditions of different layers

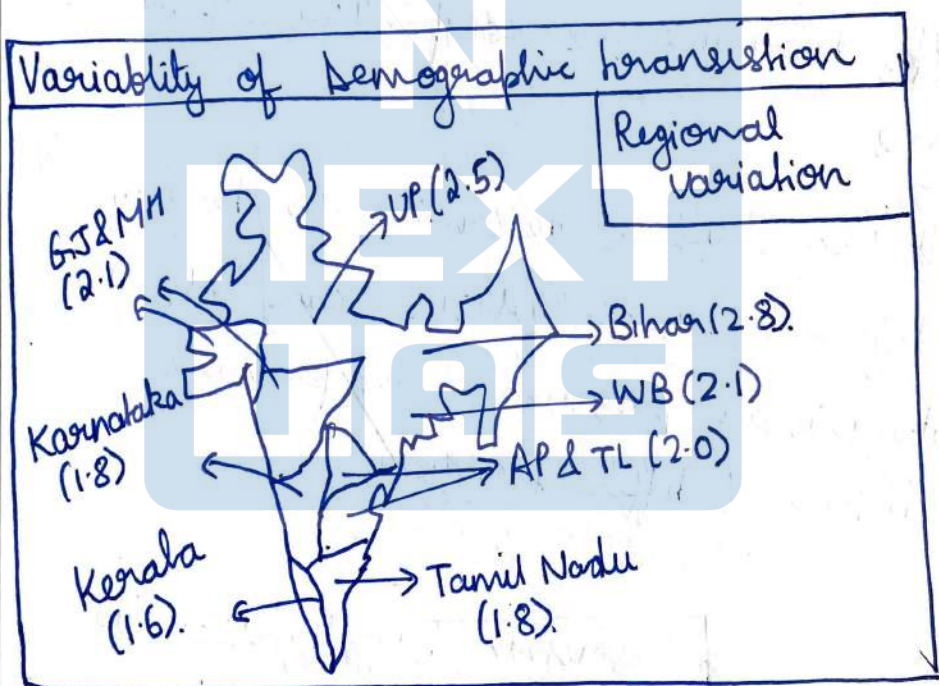
Seismic Investigation is preferred over other methods like volcanic studies or direct mining which are non-practical beyond a point & economically & technological unviable.

Q.8

जनसांख्यिकीय संक्रमण की गति भारत के विभिन्न राज्यों में भिन्न-भिन्न है, जिससे जनसंख्या वृद्धि दोघाती तलवार बन जाती है। टिप्पणी कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

The pace of demographic transition varies across different states of India making population growth a double-edged sword. (Comment.)
(Answer in 150 words) 10 Marks

According to UN world population report 2023, India is set to overtake China to become largest country in terms of population despite TFR declining to 2.0 according to NFHS5.



Reasons for Regional variation

- ① Education levels (literacy rate)
- ② Health Indicators (IMR, MMR)
- ③ Women empowerment (FLFPR, gender role)
- ④ Access to family planning & contraceptive
- ⑤ level of urbanisation
- ⑥ economic development.

Population Growth as double-edged sword

Significance	Challenges
① Demographic dividend till 2048 (working age population 54%) ② large domestic market ③ Attractive FDI destination ④ low dependency ratio (48%) ⑤ Rapid economic growth ⑥ Geopolitical centrality	① lack of skill development & unemployment (7.1%) ② Population-resource imbalance (29% BPL according to Rangraj committee) ③ Unsustainable urbanisation ④ Representation in Parliament can be an issue in next delimitation ⑤ Issues of fiscal federalism

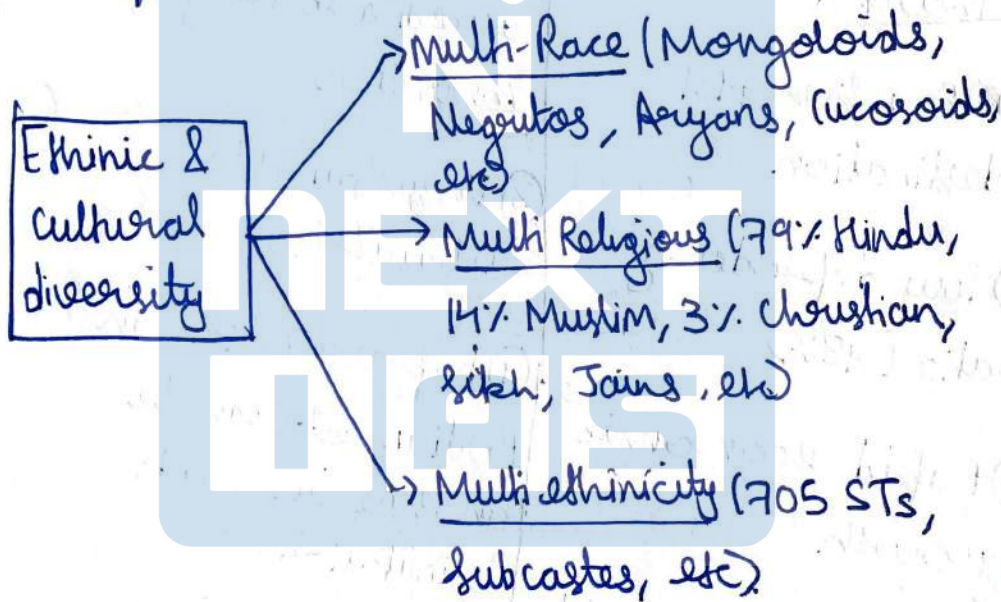
To reap the demographic dividend India needs double digit growth in next decade through increased Private Investment, Capital expenditure by Government & focus on exports.

Q.9

भारत में नृजातीय और सांस्कृतिक विविधता हमेशा से एकता के सूत्र में बँधी रही है। भारत की सांस्कृतिक एकता में योगदान करने वाले प्रमुख कारकों की चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

The ethnic and cultural diversity in India has always been bound by the thread of unity. Discuss the major factors that have contributed to the cultural unity of India. (Answer in 150 words) 10 Marks

According to Dorothy Simpson, to ensure unity in diverse country like India there is need for creating mindset which promote loyalty, collective identity & love for nation.



Factors of Unity in Diversity

① Geography → Monsoon define culture of the country. eg. Agrarian festivals like Nuakhai, Agrarian economy, etc.

② Common Past & History → Ideals of freedom struggle, Ancient & medieval history.

eg. Preservation of cultural heritage like Taj Mahal, Ajanta & Ellora, Hampi, etc.

③ Constitution → Article 25-28 provide for secularism, Article 16 & 17 provide for social justice

④ Cultural factors → common pilgrimage centers, like Ajmer, collective celebration of festivals like Vaisakhi, Khushbu, Diwali, Eid, etc.

⑤ Spirit of tolerance & love → eg. Indo-Islamic architectures, Ashoka Dhamma, etc.

⑥ Other factors

↳ federalism

↳ emotional unity (cricket & Bollywood).

Mahatma Gandhi said the greatness of our civilisation will be defined by love for beauty of unity in diversity.

Q.10

भारतीय समाज में विद्यमान सार्वजनिक और निजी जीवन में द्विभाजन जाति के उन्मूलन के लिए एक प्रमुख बाधा के रूप में कार्य करता है। औचित्यपूर्ण उत्तर लिखिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The dichotomy in public and private life in Indian society acts as a major barrier to the annihilation of caste. Justify.

(Answer in 150 words) 10 Marks

Caste system is the ancient Indian cultural practice based on idea of occupational segregation, purity & pollution, endogamy, etc.

Dichotomy Act as major barrier in Annihilation

- ① Inter-caste marriages → still not acceptable which is a private sphere
- ② Lack of social intercourse → among different caste in private sphere.
- ③ Sanskritisation → lower caste adopting the practices of upper caste in private sphere.
- ④ Occupation → lower caste mainly comprises as domestic servant, drivers, etc

Public sphere

- ① Inter-caste dining → In urban areas

- ② Political empowerment → representation in Panchayati Raj
- ③ Mandalisation of caste → Reservation under Article 16
- ④ Regional parties based on caste → vote bank politics
- ⑤ Solid capitalism → eg. Dalit, etc.
- ⑥ Emergence of dominant caste → eg. Marathas, Yadavs, Jats.

The dichotomy in Public & Private life is responsible for lack of complete elimination of caste from psyche of people which can be tackled through attitudinal changes & education.

- Q.11 स्वतंत्रता के बाद भारत को कई युद्ध लड़ने के लिए विवश किया गया था। हमारे द्विपक्षीय संबंधों पर भारत-पाक और भारत-चीन युद्धों के कारणों और प्रभावों पर प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

India was forced into numerous wars post Independence. Highlight the causes and impact of the Indo-Pak and Indo-China wars on our bilateral relationships. (Answer in 250 words) 15 Marks

India is surrounded by hostile neighbours which has become a constant threat to both our border security & internal security particularly in recent times due to threat of 2-front war.

Causes of Indo-Pak & Indo-China War

① Indo-Pak wars

a) Historical factors → Policy of divide & rule by British on basis of religion

b) Partition of 1947 → Done in haste due to deadline set by Mountbatten

c) Integration of Princely States → tussle between two nation in case of Junagadh & Kashmir.

- d) opportunism by Pakistan → during 1962 Indo-China war, Death of J.L Nehru & food scarcity in the country
- e) Refugee crises in North East → due to political persecution of Pakistan in East Pakistan (Bangladesh war of 1971).
- f) Violation of Shimla & Lahore Agreement → Kargil war and nuclear built up tension.
- g) Proxy wars → militancy in J&K, Attack of Indian Parliament in 2002, 26/11 Mumbai Attacks, etc.

(II) Indo-China War

- a) Tibet Issue → India's support to Dalai Lama
- b) Violation of Panchsheel Agreement
- c) claim of China on Tawang & Aksai chin
- d) Expansionism → Policy of communist party
- e) Undemarcated border → Himalayan frontier

Impact on bilateral Relationship

① Indo-Pak

- ↳ a) Lack of trade & economic integration
- ↳ b) Defence build-up at borders
- ↳ c) Violation of ceasefire
- ↳ d) No people to people contact (eg. No cricket matches, no free visa).
- ↳ e) No diplomatic missions
- ↳ f) Defunct SAARC.

② Indo-China

- ↳ a) Transactional relationship (economic)
- ↳ b) Distrust in UN (China blocking India's permanent membership)
- ↳ c) Constant skirmishes in borders (eg. Doklam, Galwan, Tawang, etc).
- ↳ d) Bilateral relation driven by outside influence (QUAD)
- ↳ e) Impact on sovereignty (eg. BRI, CPEC)

India need to focus on building Atma-Nirbharita to tackle the hostile neighbour along with partnership with like minded nations like USA, Japan, UK, etc.

Q.12

बंगाल के समेकन की प्रक्रिया, जो प्लासी के युद्ध के बाद शुरू हुई तथा बक्सर के युद्ध में समाप्त हुई। क्या आपको लगता है कि अंग्रेजों के लिए प्लासी की तुलना में बक्सर का युद्ध अधिक महत्वपूर्ण था?

(250 शब्दों में उत्तर दीजिए), 15 अंक

The process of consolidation of Bengal, which started after the Battle of Plassey culminated in the Battle of Buxar. Do you think the Battle of Buxar was more important for the British than Plassey?

(Answer in 250 words) 15 Marks

British came as East India company for commercial objective but it later transformed into territorial objective strengthened by Battle of Plassey & Buxar in 18th century.

Battle of Buxar more Important than Plassey

I
Consolidation of Bengal

↳ Battle of Plassey established British as dominant power in Bengal region

↳ It got diwani rights for Bengal, Bihar & Odisha

↳ It helped EIC to become self sustaining in terms of revenue.

↳ This further consolidated its hold in Bengal region due to strengthening of military power of British.

II

Commercial Entity to Administrative Entity

- ↳ Battle of Palley helped it to gain financial control over Bengal but EIC still lack significant administrative Power.
- ↳ Lack of Administrative power impacted EIC revenue & commercial interest in the region due to interference by local Nawabs.
- ↳ Battle of Buxar & Treaty of Allahabad paved the way for EIC to gain Administrative control over Bengal
- ↳ a) Dual Government
- ↳ b) Power but no responsibility
- ↳ c) Nawab lost sovereignty & autonomy
- ↳ d) Paved the way for British to influence land revenue policies
- ↳ eg. Revenue farming or *ijdadari* system.

Battle of Buxar & Treaty of Allahabad acted as precursor to subsidiary alliance, subordination of Bombay & Madras & spread of British influence all over India.



Q.13

संस्कृत साहित्य सामान्य रूप से और विशेषतः गुप्त काल में प्राचीन भारत के साहित्यिक इतिहास के लिए एक उच्च मानक स्थापित करता है। विवेचना कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

Sanskrit literature in general and particularly in the Gupta age set a high watermark for the literary history of ancient India (Discuss.)
(Answer in 250 words) 15 Marks

India has such literature heritage with diversity in language, religion & region. Sanskrit literature provide the crucial information about Indian Art & culture along with society & Polity of the times.

High Watermark in the literary history

In General

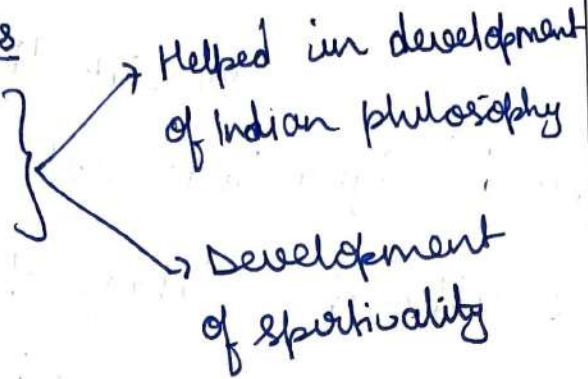
① Vedic times

- ↳ Rig veda
- ↳ Atharvaveda
- ↳ Sam veda
- ↳ Yajur veda.

- a) Brahmanical chants
- b) knowledge about medicines
- c) knowledge of rituals & sacrifices
- d) role of hymns & music in devotion toward god

② Later Vedic times

- ↳ Upanishads
- ↳ Vedanta



③ Gupta

Gupta Age

① Religious epics

- ↳ a) Mahabharata
 - ↳ b) Ramayana
- } still influences Indian society

② Bhagwat Purana

③ Mirchkatika

Inspiration for other literature

① Development of Sangam literature in South India

② Jain Agamas

③ Buddhacharitra by Asvagosha

Sanskrit literature played significant role in enriching the cultural heritage of India which still influences the society in form of religious practices & source of wisdom.

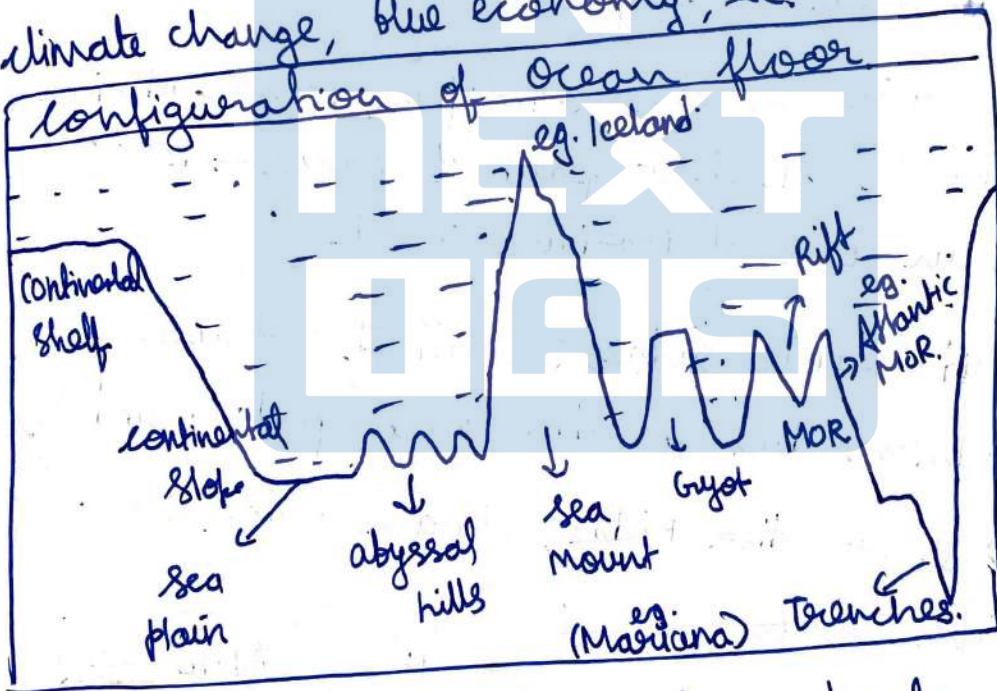


Q.14

महासागरीय नितल का विन्यास उन भूगर्भीय प्रक्रियाओं के बारे में आवश्यक जानकारी प्रदान करता है जिन्होंने पृथ्वी की सतह को आकार दिया है। महासागरीय नितल की प्रमुख विशेषताओं और समुद्र विज्ञान के अध्ययन में उनके महत्व की चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

The configuration of the ocean floor provides essential information about the geological processes that have shaped the Earth's surface. Discuss the major features of the ocean floor and their significance in the study of oceanography. (Answer in 250 words) 15 Marks

Recently Japan launched sea bed mapping project led by GEBCO which aims to understand the configuration of ocean floor to derive informations related to ocean biology, paleoclimatic evidence, climate change, the economy, etc.



Provides essential information about geological process such as:-

- ↳ ① Sea floor spreading (Atlantic ocean)
- ↳ ② Hydrothermal vent (source of methane hydrates & Poly-metallic nodule).

- ↳ ③ Tectonic movements (eg. trenches zone of ocean plate subduction).
 - ↳ ④ Accretionary wedges (eg. Japan, Philippine etc).
 - ↳ ⑤ submarine canyons (eg. Indus canyon)
- explain diastrophic process under ocean.

Major Features of ocean floor.

- ① Continental shelf, continental slope & continental fans part of continental margin
- ② Oceanic trenches (eg. Japan, Tonga & Mariana Trench) → Deepest part of earth → 13000 m in case of Mariana Trench
- ③ Mid oceanic ridges (result of volcanic eruption due to divergent plate boundaries)
 - ↳ eg. Laccadive Ridge, chagos ridge, east Pacific ridge
- ④ Sea Mounts → Mountain range which emerge out of sea → eg. Andaman Island, Nicobar, etc.
- ⑤ Others → Abyssal hills, guyot, ocean basin



Significance in study of Oceanography

- ① Marine resource mapping (eg. oil & gas, fisheries, Pharmacological like crab, cod liver oil, Polymetallic nodules, wave, tidal & OTEC energy).
- ② Sea floor spreading & origin of continent & oceans (age of rock increases away from ridge).
- ③ Study of ocean deposits (eg. Foraminifera, Globigerina, Red clay etc).
- ④ Understanding of coral reef formation
- ⑤ Current, tide & wave formation
eg. current follow bottom contours of sea floor, get deflected by MOR, wave height increases in continental shelf.
- ⑥ Salinity & temperature → presence of saline & cold water • in ocean floor due to higher density.

Ocean studies are significant in context of blue economy, climate change & biodiversity loss.

- Q.15 दुर्लभ पृथ्वी तत्त्वों (दुर्लभ मृदा धातुएँ) की बढ़ती माँग के साथ, उनका वितरण वैश्विक अर्थव्यवस्था का एक महत्वपूर्ण पहलू बन गया है। वैश्विक स्तर पर दुर्लभ पृथ्वी तत्त्वों के वितरण, उनके उपयोग और उनके निष्कर्षण के पर्यावरणीय प्रभावों पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

With the growing demand for rare earth elements, their distribution has become a critical aspect of the global economy. Discuss the distribution of rare earth elements across the world, their uses, and the environmental impact of their extraction. (Answer in 250 words) 15 Marks

Rare earth element is defined by US geological survey as the critical minerals which have application in range of modern day technology but are found in specific locations whose monopoly can lead to supply chain disruptions.

Distribution of Rare earth elements



Uses of Rare Earth element

- ① Electronic Industry → Mobile, LED, Optical fibre manufacturing
- ② Industry 4.0 → Chip making which is used in IoT devices, sensors, etc.
- ③ Defence Industry → Jet engines, Aircrafts, submarine, etc.
- ④ Automobile Industry → display systems, electric vehicles, etc.
- ⑤ Other uses → nuclear power plants, civil aviation aircraft, space crafts, etc.

Environmental Impact of their extraction

- ① Deep sea minerals → huge sedimentation
- ② Specific locations → survey requires forest clearance thus deforestation.
- ③ Energy Intensive mining & refining → Green house gas emissions

- ④ Water Intensive → extraction process involve billions of gallons of water
- ⑤ Radiation & Toxin → biomagnification & Impact animals & plants.
- ⑥ Soil pollution → acidification of soil due to H^+ ions.
- ⑦ Air pollution → due to release of toxins
- ⑧ Minor shocks → human induced earthquakes due to blast mining.

Rare-earth elements are future of development as we transition toward Industry 4.0 thus India need to become Atmanirbhar through forming alliances in critical minerals & technologies

Q.16

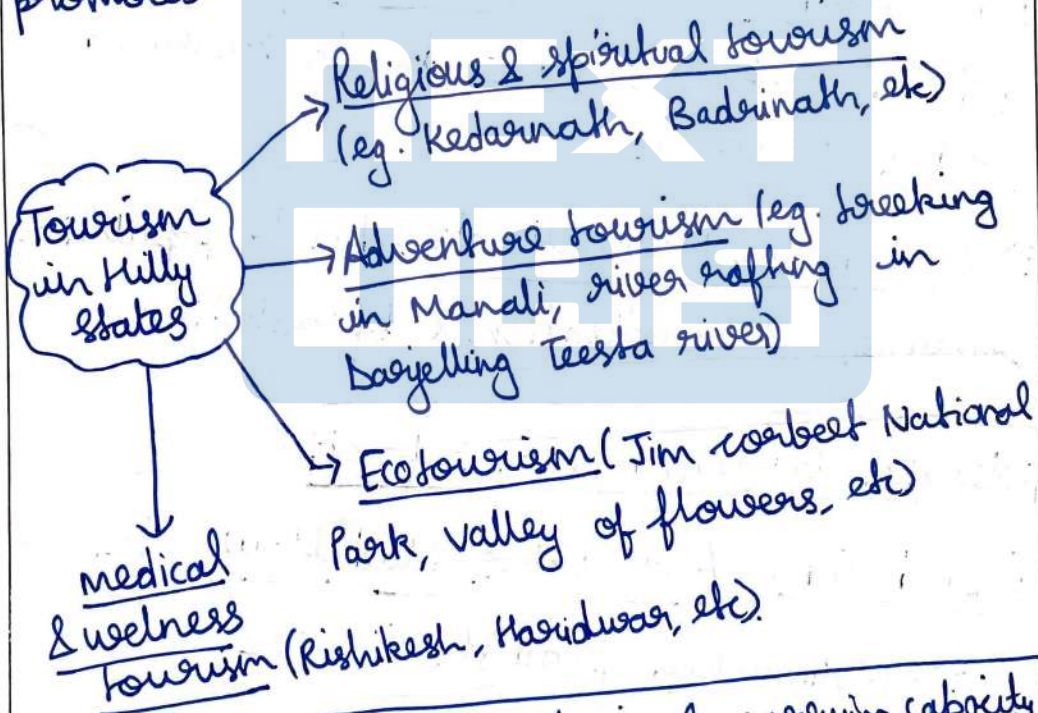
पहाड़ी राज्यों में पर्यटन, इस क्षेत्र की पारिस्थितिक वहन क्षमता से अधिक हो जाने का खतरा है। इस प्रवृत्ति के लिए योगदान करने वाले कारकों का विश्लेषण कीजिए और इस घटना के संभावित पर्यावरणीय प्रभावों का मूल्यांकन कीजिए। इन राज्यों में धारणीय पर्यटन को सुनिश्चित करने के लिए क्या उपाय किए जा सकते हैं?

(250 शब्दों में उत्तर दीजिए) 15 अंक

Tourism in the hilly states is threatening to exceed the ecological carrying capacity of the region. Analyze the factors contributing to this trend and evaluate the potential Environmental impacts of this phenomenon. What measures can be taken to ensure sustainable tourism in these states?

(Answer in 250 words) 15 Marks

Hilly states due to their natural advantage like mountain ranges, waterfalls, river streams, etc has tourism as its main economic potential which is also promoted in hill area development programs.



Factors threatening ecological carrying capacity

① Land Use changes → eg. Chardham road project, change in slope of Joshimath, encroachment of flood plains in Kedarnath.

② Deforestation → for construction of hotels, restaurants, homestays, etc.

↳ eg. Munnar in Idukki district of Kerala.

③ Increase in vehicular density → cab services, private cars, trucks & buses leading to pollution

↳ eg. temperature inversion even at night in Kasol of Himachal Pradesh.

④ Increased solid waste pollution → plastic, paper & electronic waste due to increased number of tourists

⑤ change in Microclimate → due to population pressure, concretisation & deforestation.

Potential Environmental Impact

① Land slides, Avalanches, Mud flow, etc.

↳ eg. Himachal Pradesh in 2022

② Soil erosion & Agriculture loss due to land slides

③ Glacial lake outburst floods & cloud burst (eg. Rishiganga river in 2022 & Kedarnath in 2013)

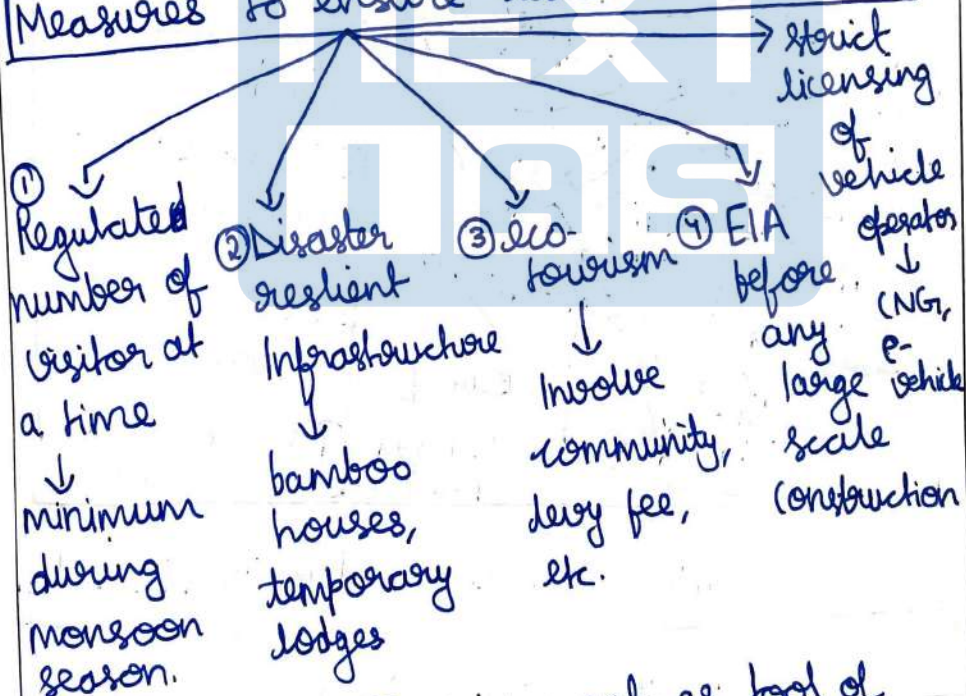
④ Drainage changes & pollution of rivers
 e.g. Periyar river & Idduki floods of 2018 due to sedimentation.

⑤ Subsidence of land (e.g. Joshimath in 2023) → situated on unstable slope.

⑥ Biodiversity loss (shifting tree lines, threat to snow leopards, etc)

⑦ Glacier melting (UNEP report → Hindukush melting rapidly).

Measures to ensure sustainable tourism



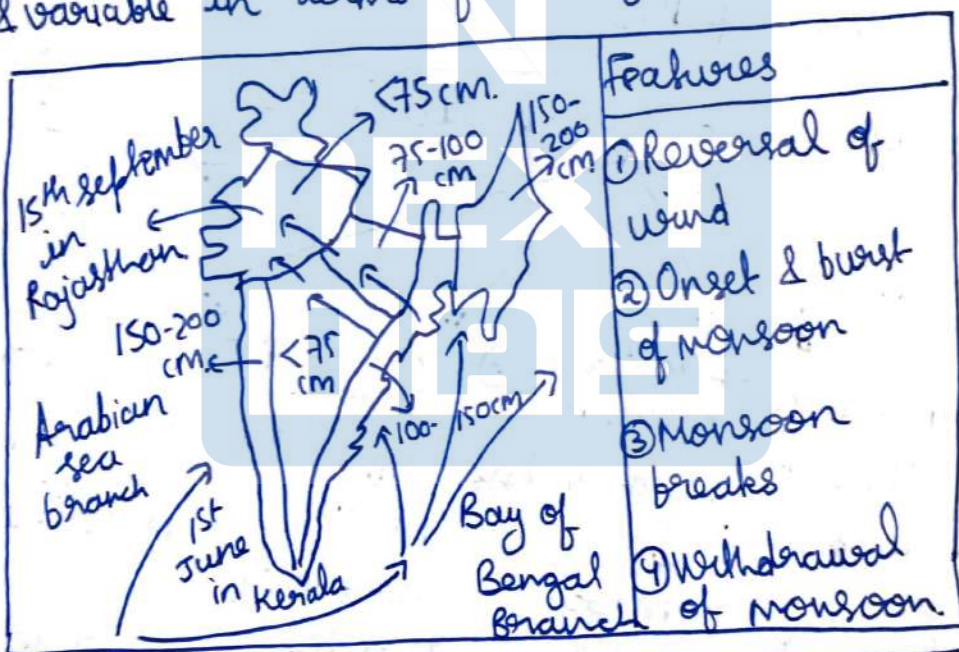
Tourism act as tool of regional development in backward hilly states thus it need to be more sustainable in form of green tourism & ecotourism.

Q.17

भारतीय मानसून विभिन्न जलवायविक कारकों से प्रभावित एक जटिल परिघटना है। भारत में मानसूनी वर्षा की तीव्रता और वितरण के निर्धारण में महासागरीय और वायुमंडलीय कारकों की भूमिका का आलोचनात्मक परीक्षण कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

The Indian monsoon is a complex phenomenon influenced by various climatic factors. Critically examine the role of oceanic and atmospheric factors in determining the intensity and distribution of monsoon rainfall in India.
(Answer in 250 words) 15 Marks

Indian monsoon that is south west monsoon & North east monsoon is superimposition of micro, meso & macro level phenomena which make it complex & variable in terms of intensity & distribution.



Role of Oceanic factors in Intensity & Distribution

① Sea-land differential → in terms of temperature & pressure forces monsoon wind to flow landward

↳ e.g. deflection of Bay of Bengal Branch

toward Odisha & West Bengal coast.

- ② Indian Ocean Dipole → Warming of Arabian Sea create positive IOD leading to intense rainfall in Konkan & Malabar coast.
- ③ El-Nino & La-Nina → El-Nino leads to depressed rainfall all over India except in Tamil Nadu coast where there is intense rainfall due to North East Monsoon.
- ④ Cyclonic formation → cyclonic genesis further north in Indian Ocean lead to excess rainfall. In case of southward formation it leads to less rainfall.
↳ cyclone Vayu & Biparjoy → delayed onset & monsoon break in Western India.

Role of Atmospheric factors in Intensity & Distribution

- ① Positioning of ITCZ → attract monsoon wind in the region
- ② Position of sub tropical westerly jetstream → northward movement help in onset

- ③ Tropical easterly jet stream → strengthen southwest monsoon winds coming from Mascarene high.
- ④ Movement of wind → Gradual decline in moisture of Bay of Bengal branch leads to low rainfall in western Indo-Gangetic plain.
- ⑤ Localised Heating → Urban Heat Island effect leads to cloudburst & Intense rainfall
e.g. 2005 Mumbai floods or 2021 Pune flooding.
- ⑥ Withdrawal of monsoon → early in North west India & late in Eastern & Western India impact distribution of rainfall.
- ⑦ Orographic uplift → high rainfall in windward slope & low in leeward slope.

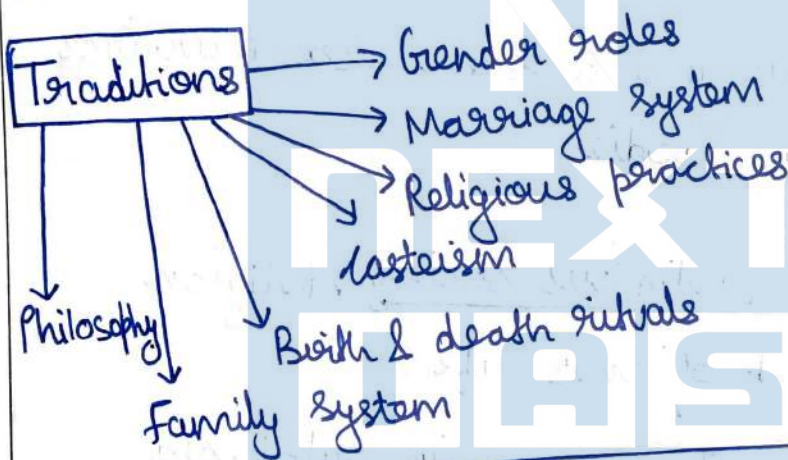
As India receive 70% of its rainfall from South west monsoon, It is very important for agrarian economy, drinking water purpose & HEP energy.

Q.18

हमारे समाज में परंपराएँ परिवर्तन को क्यों बाधित करती हैं? प्राचीन रीति-रिवाजों पर आधारित मूल्य-मान्यताओं के विरुद्ध सामाजिक विधान किस सीमा तक सहायक हो सकते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक

Why do traditions in our society impede change? To what extent can social legislation be instrumental against old customary practices? (Answer in 250 words) 15 Marks

Indian society is characterised as multi-religious, multi-ethnic, multi-linguistic, etc with diversity of traditions, customs & rituals thus maintaining balance between traditions & modernity.



Reasons for Traditions Impeding changes.

① Long History → eg. Caste system exist since Ancient times of Aryan age, Gupta age, etc

② Patriarchy → our society is male dominated where gender roles are defined

↳ eg. Resistance to women's entry in

Army

③ Importance of Family → According to A.M Shah (Sociologist), Family system in form of Jointness still desired in modern India.

↳ leads to Impediment of Inter-faith & Inter-caste marriages.

④ Cultural Preservation → against threat of globalisation.

↳ eg. resistance to same-sex marriage by religious bodies.

⑤ Spiritual & Religious Society → Religion active part of one's life

↳ eg. ban of women in Sabarimala temple.

⑥ Other reasons

↳ lack of education
(belief in superstition
↳ eg. ASI mining for gold as Baba or Astrologer predicted it)

↓
Diversity

↳ Any reform may be seen as threat to diversity (eg. Min. of Law & Justice said UCC is seen as religious issue)

Social legislation against Customary Practices

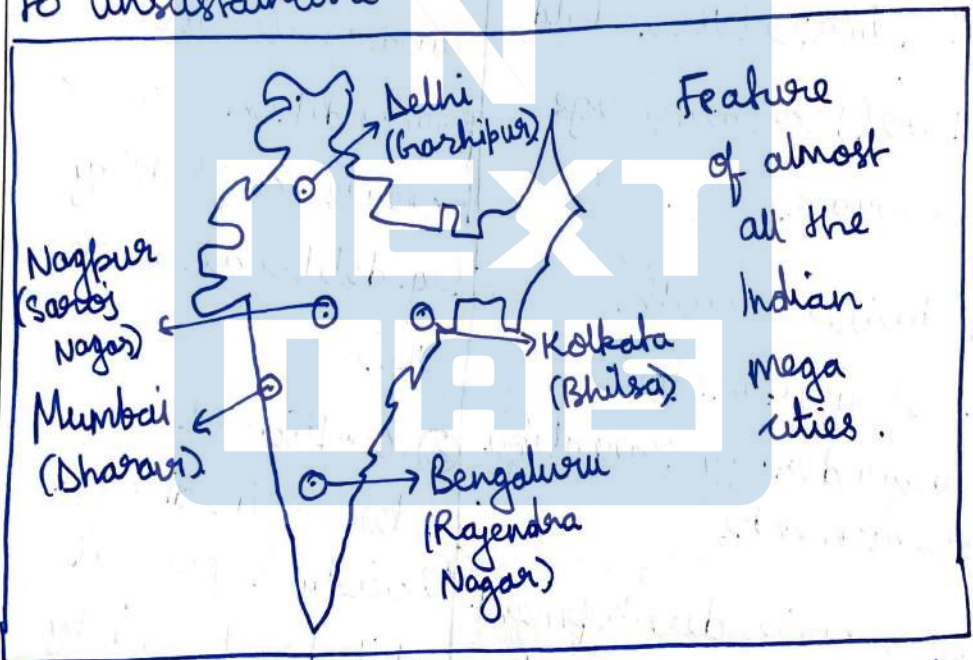
Argument for	Argument against
① Indian Secularism provides for removing evil practices from society/religion ② Several DPSPs & fundamental rights provide for gender justice (UCC), child welfare (Increasing age of marriage), etc. ③ Inclusive growth (eg. reservation to transgender by Karnataka Government) ④ Economic development (eg. IMF stated that India's GDP growth can increase by 2-3% in FLFR increases by 50%.	① Resistance from society (eg. Talukadu ban lifted after protest through state legislation) ② Education & awareness in precondition to increase acceptability (eg. deliberation on UCC) ③ Conflict of interest in diverse society & moral attitude of society (eg. Same sex marriage, abortion, etc.)

Any social legislation should come after deliberation & discussion with all the stakeholders as there is need to understand & respect difference of opinion to uphold the beauty of unity in diversity.

- Q.19 मलिन बस्तियाँ ऐसी 'समस्याएँ' नहीं हैं जिनका 'समाधान' किया जाना है - बल्कि वास्तव में, ये बुनियादी ढाँचे के प्रावधान और सामाजिक-आर्थिक मुद्दों को शामिल करने वाली असंतुलित और स्वार्थपरक नगरीय नीतियों का एक परिणाम हैं। विश्लेषण कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

Slums are not 'problems' that have to be 'solved' - but are indeed a result of lopsided and vested urban policies covering infrastructure provision and socio-economic issues. Analyse.
(Answer in 250 words) 15 Marks

According to census 2011, around 63 million people were residing in slums due to haphazard urbanisation & neglect of rural development leading to unsustainable rural-urban migration.



Slums not problems that have to be solved

- ① Circular economy → largest hubs of recycling of waste (eg. Dharavi & Gandhinagar)
- ② Community living → social cohesion & social capital

- ③ low carbon Intensive → culture of walking & minimalistic lifestyle
- ④ low land use changes → high density houses, efficient land utilisation
- ⑤ Self sufficient systems → less dependence on other regions.

Result of Lopsided & vested urban Policies

- ① Lack of affordable housing
 ↳ eg. Real estate in Gurgaon & Noida affordable for IT workers but not for semi skilled or unskilled workers.
- ② Non-Implementation of Tenancy laws
 ↳ High rent & securities charged by land lords in cities like Delhi & Bengaluru.
- ③ High price of land
 ↳ eg. Jubili hills & Banjara hills in Hyderabad, South Bombay & South Delhi, etc can be afforded by only by millionaires.
- ④ Lack of social security
 ↳ 90% of urban workforce in Informal sector. making vulnerable to shocks like COVID

⑤ Ghettoisation → urban segregation based on caste & religion

↳ eg. Sindhi colony in Ahmedabad, Howrah in Kolkata, etc.

⑥ Urban apathy of migrant voters → no provision of remote voting keep them away from urban imagination of policy makers

⑦ Other socio-economic issues → casteism, gated societies, lack of data on migrants, son of soil concept, etc.

Slums should be provided with better facilities like pucca houses, 24/7 electricity, drainage, waste management along with development of rural areas to solve the issue comprehensively and achieve SDG11 that is sustainable urbanisation.

Q.20

साम्प्रदायिकता आर्थिक अभाव से बल प्राप्त करती है, और सामाजिक बहिष्कार के वातावरण में फलती-फूलती है, जिससे असंतोष और विभाजन के लिए उर्वर भूमि तैयार होती है। टिप्पणी कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

Communalism gains strength from economic deprivation, and thrives in environments of social exclusion, creating fertile ground for discontent and division. Comment.

(Answer in 250 words) 15 Marks

Communalism is defined as deep affinity to one's own culture be it religion or caste which has political basis rather than religiousity. It act as threat to concept of unity in diversity.

Result of economic Deprivation

① Competition for scarce resources

↳ eg. British divide & rule policy through employment of majority Hindus in Administration

② Occupational segregation.

↳ eg. Muslims employed mainly in primary sector & Tribal Christians engaged in forestry.

③ Landlessness

↳ eg. 80% of small & marginal farmers belong to SCs, STs & OBCs (Agricultural census).

④ Unemployment of youths (7.1% PLFS)

- ↳ breeding ground for radicalisation
- ↳ vote bank politics based on fear & anxiety.

⑤ Regional disparity

- ↳ Hilly & forested region economically backward (eg. J&K, Western Odisha, Southern Chhattisgarh, etc).

Thrives in environment of social exclusion

① Ghetto formation → In large urban areas.

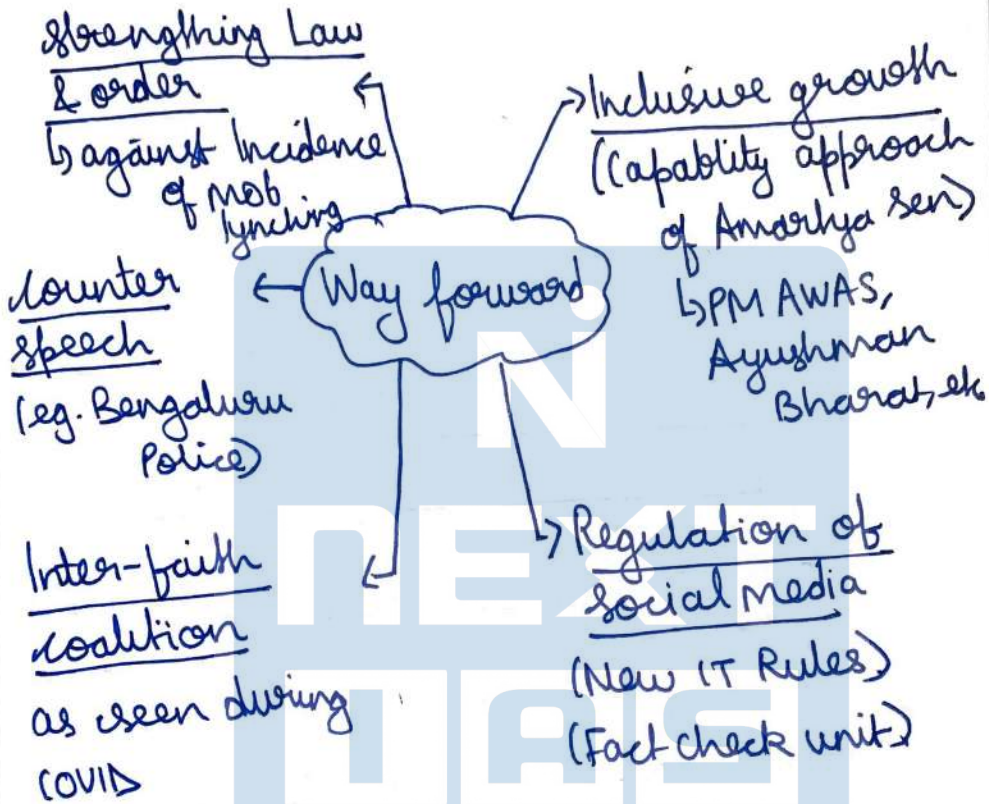
② Mob lynching → eg. Bihar case recently where driver lynched as he was carrying bones of animal.

③ Communal riots → create distrust & fear & further lead to radicalisation.

④ Illiteracy → Sachar Committee report mentioned poor education status of muslim youth that is big factor of

radicalisation

⑤ Social media → Hate speech, Hate content further ~~create~~ create division in society



India's identity is its secularism. It is in our ethos, Psyche. India cannot be but secular as said ex-President Pranab Mukherjee, thus there is need to promote inter-faith harmony.

Space for Rough Work

