

Time Allowed : Three Hours
समय : तीन घंटे



Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate
परीक्षार्थी का नाम *Kritika*

Roll No./अनुक्रमांक

Medium/माध्यम

English हिंदी

Center Code/परीक्षा केंद्र

Date/दिनांक

15/6/2025

*Center Code : For Online - 1900 / Delhi - Kailash - 1901 / Patna - 1902 / Melkharji Nagar - 1903 / Patna Boring Rd. - 2001 / Hyderabad : Jawahar Nagar - 2101

INDEX TABLE / अनुक्रमिका

Q. No. प्र.सं.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्त अंक
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Total/कुल अंक	250	

INSTRUCTION / अनुदेश

- Please do furnish Name, Email, Roll No and Mobile in the answer booklet.
कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।
- There are **TWENTY** questions printed in ENGLISH & HINDI, all questions are compulsory.
उत्तर-पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।
- Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided.
उत्तर अवैश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में उत्तर-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।
- Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off.
प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। उत्तर-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।

For Student Only / केवल परीक्षार्थी प्रयोग हेतु

Examiner's Discretion/मूल्यांकन कर्ता का विवेक : Start Time/आरंभ करने का समय : **4:00** End Time/समाप्त करने का समय : **8:40**
4:40 hrs

Total Marks/कुल अंक : Mode Of Examination/परीक्षा की विधि : Online/ऑनलाइन Offline/ऑफलाइन

For Office Use Only / केवल कार्यालय प्रयोग हेतु

*Examiner's Discretion is the mark awarded to the candidate by the examiner based on your overall impression on the basis of (but not limited to) your handwriting, presentation, neatness, clarity, coherence, facts and figures or absolute accuracy.
मूल्यांकन कर्ता का विवेक अंक आपकी निष्पक्ष परीक्षा प्रक्रिया में उपयोग, प्लेननेस, तथ्या और अंकन या सटीकता, स्पष्टता, प्रसंगिकता, वस्तु, जो मूल्यांकन कर्ता को अवसर मिलेगा, पर निर्भर करता है (लेकिन इन्हीं तक सीमित नहीं) पर विवेक पर निर्भर करता है।

Office Code : (1) (2) (3) (4) (5) Evaluation Date/मूल्यांकन तिथि :

विकास पर
परिचय

(Don't Write anything
in this Area / इस स्थान
पर कुछ न लिखें)

354968 811528 1910141559 (2025-06-15 20:02:04)

AS

Q.1) Gangetic Plains are rich in alluvial & minerals transported from the Great Himalayas. Terai region is most fertile for agriculture & contributes to 48% agricultural productivity (Ministry of Agriculture).

Underdevelopment in Gangetic Plains

1) Ecological problems

↳ Due to fragile ecology, any transgression in these plains lead to disasters

↳ Eg → cloud bursts & landslides experienced often

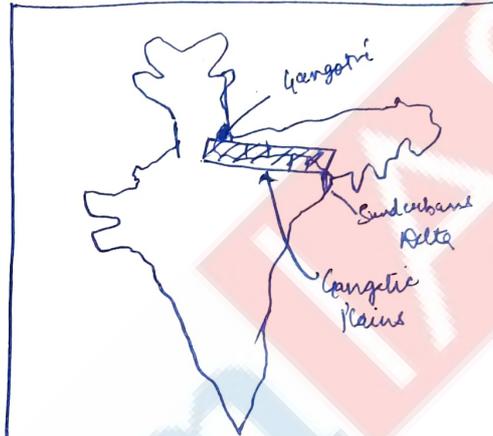


Fig: → Gangetic Plains

2) Demographic pressure

↳ Due to abundant water, fertile soil, this area hosts a large population & settlement patterns

↳ High population pressure affects the ^{limited} land resource, leading to unaided overpopulation. Eg → UP & Bihar have total fertility rate of 4.1. → highest in India.

3) Unskilled manpower

↳ High illiteracy rate in UP & adjoining Bihar & Jharkhand states leads to the utilization of demography in unskilled tasks, while

rapid development requires high technology manpower

4) Limited Industrial Growth due to "Industrial Inertia" & low ease of Doing Business

↳ (Eg) Textile industry exists with less scope for automobile & iron-steel industries due to instability caused by communalism & riots
 ↳ (Eg) Muzaffarnagar riots; Kanpur riots

5) Agrarian pressure & lack of shift towards secondary-tertiary sector

↳ Due to fertile land, agriculture booms esp. sugarcane, wheat, milk production.
 ↳ There is less a shift towards secondary-tertiary sector as the Economic Survey attributed less than 1/4th workforce in these sectors to entire Ganga belt.

Way forward

- Government policies to boost internal security in region to attract industries
- Upskilling through saturation of schemes like PM Kaulshal Vikas Yojana etc.
- Removing stereotypes & taboos related to women employment to increase their participation in labour force.

While resource abundance is desirable, if not properly managed, it easily becomes "a resource curse".
 Therefore, there is urgent need for geopolitical & economic policy intensification to effectively utilize Gangetic plain to make India 3rd largest economy soon.

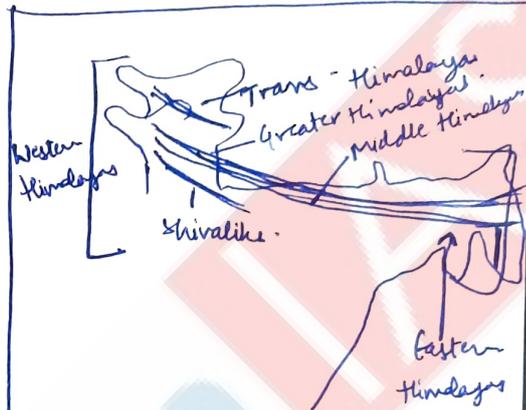
Feedback

(For OFFICE use only)

#	C	A	P
AWIS			
CD & VA			
S & F			
P & R			
Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

2.) Himalayas were formed as a result of tectonic activity. According to Plate Tectonic theory by Weber (1912), the Indo-Australian Plate has a convergent boundary with Eurasian Plate giving rise to one of the highest Young Fold Mountains → The Mighty Himalayas.

Himalayas are divided into various ranges & it is interesting to note that Eastern & Western Himalayas have certain differences →



Differences between Eastern & Western Himalayas

Fig: → Eastern & Western Himalayas.

1. Presence of Trans-Himalayan ranges

- ↳ Western Himalayas consist of Trans-Himalayas which appear near the Ladakh cold desert & Akshai-Chin - Siachen Glacier area.
- ↳ Eastern Himalayas don't show the presence of Trans-Himalayas.

2. Height of mountains

- ↳ Western Himalayas are higher in altitude thus exhibiting Tundra - Taiga climate.
- ↳ Eastern Himalayas (eg) - Nanda Devi is completely in Alpine zone.

Feedback

(For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			
Please put tick marks in the above table.			
Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

↳ Eastern Himalayas are relatively shorter in height as can be seen in Abor, Japla, Mishmi hills.

3. Shivaliks

- ↳ Western Himalayas have lowest ranges of Shivaliks which occur in Punjab, Kangra, Himachal etc.
- ↳ Eastern Himalayas don't have Shivalik hills.

4. Flora & Fauna

- ↳ Western Himalayas show "Karewa → saffron plantations" & is home to Snow Leopard (↳ Dachigam National Park)
- ↳ Eastern Himalayas show presence of orchard plantations in Assam - Arunachal & is home to one-horned Rhinoceros, lion, elephants etc (↳ Manas National Park in Assam)

5. Bending of ranges

- ↳ Western Himalayas bend at K₂ in North-west
- ↳ Eastern Himalayas bend at Namche-Barwa in North-east

6. Rivers & drainage patterns

- ↳ Western Himalayas have extensive glaciers like Siachen, Baltoro, Karashingri, Milam etc giving rise to number of rivers like Ganga, Yamuna, Satluj, Indus etc.
- ↳ Eastern Himalayas see the presence of just 1 major river - Brahmaputra & don't have extensive glaciers.

Despite differences, the Himalayas have major role to play in biodiversity conservation & sustenance of human & economic progress in the region.

3) Local winds refer to the aerodynamic processes which are influential in a particular region. When two places in a region have high pressure & low pressure, winds move from areas from high pressure to low pressure. \rightarrow Loo in summer (North India)



Fig:- Prevalence of local winds

IMPACTS ON LOCAL ^{REGIONS} WEATHER

① Dry & Dusty winds

- Increase heat leading to "heat domes"
- Health impacts \rightarrow Eg Loo caused dehydration related hospitalization
- Brings relief to areas with high humidity \rightarrow Eg Dr winds Doctor winds in Africa
- Wild fires \rightarrow Eg Santa - Ana winds in California

Feedback

(For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
-------------	--

2. Cold winds

- ↳ Reduces the temperature of an area
- ↳ may lead to frost build-up
- ↳ Impacts biodiversity adversely by making winters severe (e.g. Boreal winds)
- ↳ loss of human productivity due to extremes of temperature

3. Warm & humid winds

- ↳ Brings rainfall to dry areas = Relief to population
- ↳ may cause blood rain when mixed with Sahara Sand (e.g. Ghibli, Poehn, mistral)
- ↳ Boosts agricultural productivity of an area
- ↳ favourable climate leads to phytoplankton growth & ecological boom

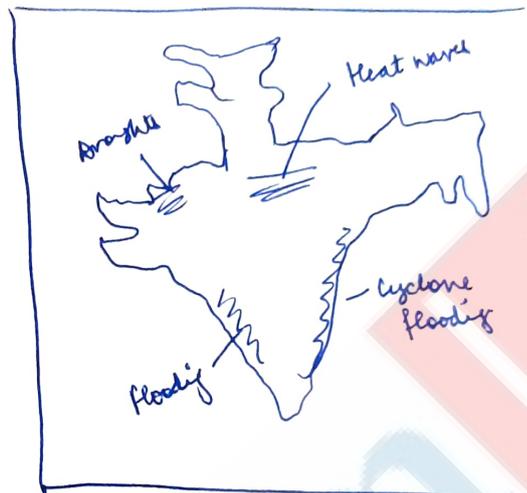
While local winds impact the weather of a region, it also impacts landform creations through creation of ~~erosion~~ stacks by erosion, impacts biodiversity of region along with cultural-social impacts.

Write ans in this area / इस स्थान पर कुछ न लिखें

354968-811528-1910141559 (2025-06-15 20:02:04)

4) Indian Geological Survey in collaboration with Indian Meteorological Department's statement reflects the variability in Indian monsoon, which will ~~go~~ increase by about 5% annually, if climate change persists at similar scale.

Factors causing variability of monsoon



Fig! -> Extreme weather events associated with Monsoons.

1. Climate Change & Global Warming

- > Climate tipping points close
- > Increase of carbon-dioxide, methane & Sulphur-dioxide due to agriculture & industrial activities

2. El-Nino further Oscillations & La-Nina

- > Differences in warming of Pacific ocean due to winds of counter-equatorial current
- > El-Nino causes drought
- > La-Nina causes flooding
- > recently, triple-dip La-Nina

F
(For C
AW
CD
S
P
P
n
t
i
i

4. continued

③ Increased Urbanization

- ↳ Leads to "heat domes" by disrupting precipitation patterns
- ↳ Contributes to increased temperature in metropolitan
- ↳ Inability to absorb water leads to "Urban floods"

④ Geophysical phenomena in Indian Ocean

- ↳ Madden Julian Oscillation may have inhibitory or improving effects on monsoons
- ↳ location & strength of Easterly Jets influences monsoon arrival
- ↳ Positive Indian Ocean Dipole brings better monsoons

⑤ Environmental degradation

- ↳ The constant ~~but~~ mining activities in Himalayas
- ↳ Deforestation rising & waste accumulation
- ↳ Impacts onset of monsoons.

NITI Aayog's India at 75 Vision Document highlights role of monsoons on India's growth where agriculture contributes around 1/3rd GDP.

Thus, efforts to be taken to control climate change & prevent extreme events through following "National Action Plan on Climate Change"

Q.5) 'Green tourism' is an emerging concept related to 'ecological tourism' which refers to the boost of tourism to green places & engaging in sustainable activities.

Relevance to Green Tourism on Mountain Ecosystems

① Sustainable development of Mountains

- ↳ Prevents unecological harmful practices
- ↳ Localities engage in preserving the mountain habitats
- ↳ Eg People of Uttarakhand engage in waste recycling of Himalayas.

② Boosts economic potential

- ↳ Leverage the service sector to increase state GDP.
- ↳ Eg Increase in GDP of Kerala due to Green tourism in Anaimudi hills

③ Preserves culture & traditions

- ↳ Tribal indigenous culture is preserved
- ↳ Eg Toda tribes handicrafts as a livelihood are promoted in green tourism of Eastern Ghats.

4. Prevents / Mitigates Disasters

↳ due to proper maintenance of ecosystem without degrading it
↳ Eg cloud bursts will reduce by a quarter if green tourism persists

5. Ethical preservation

↳ Ethics towards nature are preserved through trusteeship principles
↳ Eg Corporate social responsibility activities of Tata in North-East India promotes nature-tourism

6. International Reputation

↳ India will become a hub of "international tourism" by proving its commitment to sustainable tourism

Green tourism has potential to boost India's balance of payments by increasing international tourism. It balances "ecology with economy" & established India as a pro-environmental & responsible nation

Feedback

(For OFFICE use only)

#	⊖	Ⓐ	Ⓟ
AWIS			
CD & VA			
S & F			
P & R			
Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

354968_811528_1910141559_(2025-06-15 20:02:04)

Q.6) Rare earth elements are the "upcoming Gold" of the world. With the rise of technological researches, the demand of rare earth elements will rise multifold. "Industry 4.0" & "Neural Artificial Networks" are the modern industries for which rare earths are the Vitamins.

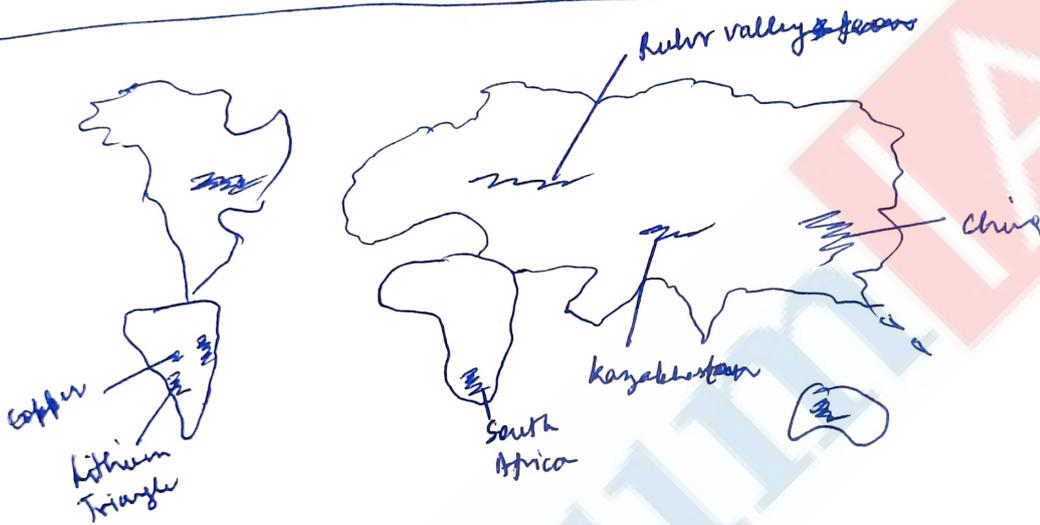


Fig:- Uneven distribution of rare-earth minerals

Implications of uneven distribution of rare earth minerals

1. Geographical concentration of prosperity leading to inequity
 - ↳ China ^{alone} accounts for more than 70% rare earth minerals
 - ↳ feelings of injustice & inequity in other countries

354968 811528 1910141559 (2025-06-15 20:02:04)

② High trade dependency
 ↳ will lead to trade monopolisation
 ↳ Trade Increasing threats of trade tariffs & sanctions may revive the era of "economic colonialism"

③ Uneven technology development
 ↳ while areas with ~~rare~~ ^{rare} earth minerals will take technology leap, others suffer
 ↳ Eg Australia's increased investments in technology

④ Climate change action
 ↳ slow action on climate change if rare earths not available
 ↳ Electronic vehicles require lithium batteries

⑤ Resource Curse
 ↳ However, negative impact for countries having abundant rare earth minerals
 ↳ Eg Resource curse in Argentina, Bolivia, Chile → Lithium & Copper.

India's 2% GDP is invested in ~~extra~~ mineral imports, due to its "geographic disadvantage" of less rare earth minerals. But, if properly utilized, rare earths will bring "technology revolution" making India 3rd largest economy.

Feedback
 (For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.
 Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
-------------	--

364968_811528_1910141559_(2025-06-15 20:02:04)

Q.7)

Alfred Wigner in 1912 proposed the continental drift theory, which is a pioneer to other theories of sea floor spreading (Hess), Convectional Current Theory (Holmes) or Plate Tectonics Theory.

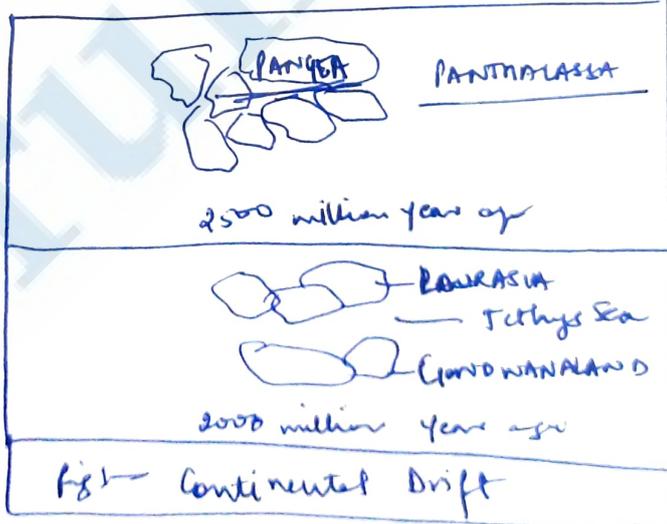
Continental Drift Theory

- ↳ Refers to constant slow movement of continents over hundreds of years
- ↳ Earlier all the continents were together → Pangea surrounded by ocean → Panthalassa
- ↳ Continents drifted to form 'Laurasia' & 'Gondwana land' separated by Tethys Sea

Evidences

① Jig-saw fit

↳ The coast of Mexico fits well in the western coast of Africa.



② Sedimentary deposits of animal bones fossils

↳ fossils of odon & lemuria are found in earth while Laurasian countries.
↳ Despite similar time of origination

354968_811528_1910141559 (2025-06-15 20:02:04)

↳ Gondwanan deposits are found from India, Australia & Antarctica

③ Placer Deposits

↳ Glacial deposits occur at 6 landmasses forming Gondwanaland.

④ Gold coast

↳ Mexican gold is supposedly connected to Gold coast of Africa
 ↳ Similar gold properties of Mexico has no gold sources.

forces responsible

① Pole-fling force → Continents drifted to avoid the polar regions, leading to their movement.

② Tidal force → Alfred Wegener believed the gravitation pull of sun & moon are so strong to create continental drifting.

Continental Drift Theory has certain limitations as the forces responsible seem to lack empirical evidence. But this theory led to 'Plate Tectonics Theory' by Parker, Morgan & McKenzie which is instrumental in explaining volcanic eruptions & tectonic shifts.

Q.8) Intercaste marriages have increased in recent past with homogeneous caste marriages still amounting to 11% (Census, 2011). The increase in intercaste marriages is not accompanied by an increase of interreligious marriages which are seen as taboos.

Causes | Increase in intercaste marriages

- ① Modernization & Urbanisation
 - ↳ Loss of traditional values
 - ↳ Urban living & requirement of food ↳ cannot caste canteens in urban hostels
- ② Migration trends
 - ↳ Increased in-migration & out-migration & reduces "caste homogenisation"
- ③ Improved educational outcomes
 - ↳ Higher educational studies in youth leads to wider perceptions
- ④ Secular workspaces & Inclusivity
 - ↳ (Eg) Google's inclusivity & diversity & culture towards its employees.
- ⑤ Govt Policies
 - ↳ Stringent laws like "Atrocities Towards Scheduled Tribes Act" has loosened concept of untouchability, High or Low caste.

354968/811528_1910141559_12025-06-15 20:02:04

Why inter-religious marriages are uncommon

① Intersectionality of religion, gender & caste

- ↳ Eg Females from minority religion & backward caste will face the brunt
- ↳ Eg Majoritarianism & internal colonialistic tendencies of dominant religion

② Cultural Norms

- ↳ Eg Khap Panchayats in Haryana
- ↳ Eg Endogamy in tribal communities

③ Legal Processes

- ↳ Complexity & time-consuming
- ↳ Eg Stringent Anti-conversion laws created in U.P. recently

④ Negative outcomes = Punishment as a deterrent

- ↳ Social ostracization & ghettoization as a punishment

⑤ Stereotypes & Prejudices

- ↳ Sachar committee report mentions increased stereotypes & discriminatory attitude towards Muslims

Ram Chandra Guha in the book "Caste Hegemony in Post-Diverse Society" mentions that historical forces have shaped a mild liberal view towards caste but a stringent negative perceptions of religion.

Feedback

(For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

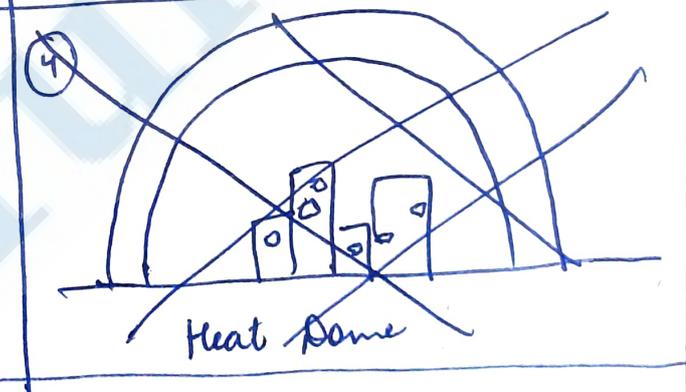
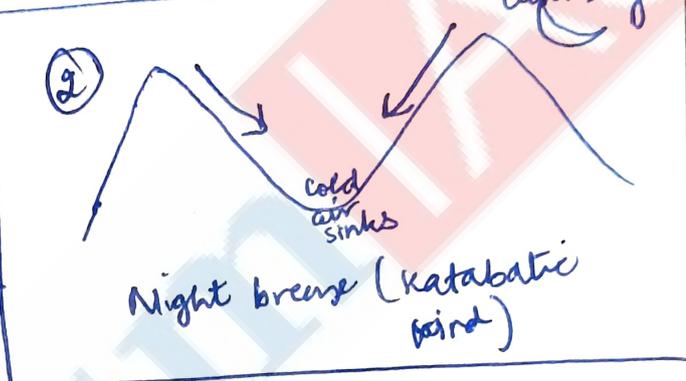
TOTAL MARKS

354968 811528 1910141559 (2025-06-15 20:02:04)

Q.9) Temperature inversion refers to phenomena where the temperature near the earth's surface is cooler comparative to the temperature at their height from earth's surface.

Normative lapse rate is not followed in such situations.

CONDITIONS OF TEMPERATURE INVERSION



Impact on weather

- ↳ Promotes cool weather near the surface of earth
- ↳ stimulates fog formation
- ↳ valleys at night freezes as cold air sinks

- ↳ dry weather due to sinking cold air
- ↳ Delays precipitation

Impact on human settlements

- Agriculture may be adversely affected
 eg) morning frost formation of katabatic wind in valleys freezing crops
- Productivity may be affected
- Settlement patterns of construction of houses depends on temperatures
- Relief from heat of sun may promote wellbeing
- Visibility affected by fog so impacts roads & transportation.

Temperature inversion is becoming more common due to the increasing primary and secondary pollutants in the atmosphere, thus heating the upper layers due to greenhouse gas effect of positive climate forcings.

Q.10) Globalization has become a reality due to increased ~~into~~ interrelatedness of supply chains which impact socio-cultural trends. Mahatma Gandhi ~~initiated~~ ^{criticized} on globalization said "I want culture ^{winds} of any society to flow through my house but I refuse to be blown off my feet by it".

Globalization = Globalization + Localization

Globalization impacted consumer behaviour

1) Trends of fast fashion

↳ Eg Zara's every Friday trend leading to consumer materialism & fast buying.

2) Westernization of dresses & "Jeans Culture"

↳ Eg Jeans & caps by Blackberry & Nike are liked by youth than Sheti-Kurta-Ganche.

3) Mall culture

↳ Replaces "local entrepreneurs" or local vendors

↳ Eg The North Country Mall in Mohali owned by Multi-National Corporation

4) Sustainable fashion

↳ Eg brands like "Mc Claire" bring about sustainable watches &

354968_811528_1910141559 (2025-06-15 20:02:04)

accessories leading to heavy trend of "sustainable fashion".

↳ Technology driven products

↳ [eg] Apple watches, apple health trackers, apple i-pads.

But, in some areas, globalisation still does not impact consumer behaviours

1. Revival of religious rituals & traditions

[eg] use of banana tree & local flowers when performing Chath Puja in Bihar or in U.S.A.

2. Vocal for local

[eg] Willingness to buy Indian GI Tag Ladang Turmeric than Western Haldi.

3. Indian startups & support for indigenization

[eg] Preferring "Natural Beauty Products" by ~~mother~~ Mame Earth

[eg] using natural gur from "Be Good" (jaggery)

Globalization has changed the world into one global village, truly realizing the Vedic vision of "Vasudava Kutumbakam".

357068_811528_1010141559_(2025-06-15 20:02:04)

Q.11) Alfred Wegener, the geologist proposed "Plate Continental Drift Tectonic Theory" in the year 1912. It was the pioneer to understand the shifting & movement of continents, which further gave impetus to new research like Hess sea floor spreading, convectional current theory ~~Proposed by~~ ^{Proposed by} Morgan, Parker's "~~Continental Drift Theory~~" "Tectonic Plate Theory" in 1960's.

Morgan, Parker, McKenzie's Plate Tectonic Theory

↳ In 1960's, they proposed that it was not continents that moved, but continents were part of larger plates that moved.



Fig: → Change in location of continents due to Plate tectonics

↳ Plates moved due to the underlying convectional currents forced by molten magma in the asthenosphere.

↳ Plates consisted of continents & water bodies
 [Eg] Indian Plate consists of Australia, India & Indian Ocean.

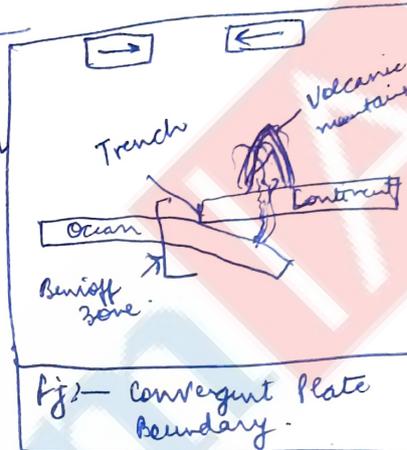
↳ There are 7 major plates and a number of minor plates.

[Eg] Eurasian plate, Pacific plate → Major plates
 Nazca, Cocos, Philippines plate → Minor plates

DIFFERENT TYPES OF PLATE BOUNDARIES

1. Convergent plate boundary

When two plates collide with each other, the thicker denser plate sinks below the lighter plate.



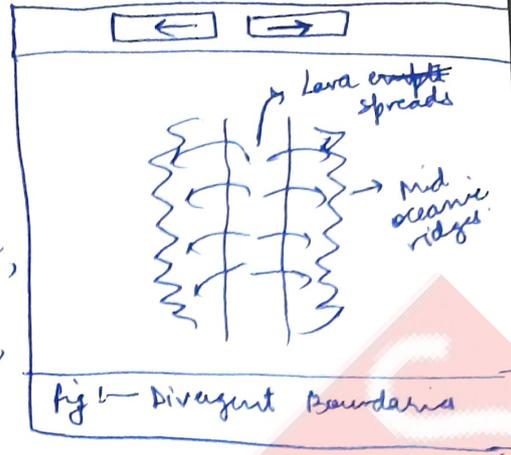
(a) when continent-ocean plate converge, ocean plate submerges below continental plate, gets melted & the molten magma erupts as lava on land, leading to formation of volcanic mountains [Eg] ~~Alps~~ Andes, Rockies etc.

(b) when continent-continent plate converges, trenches & volcanoes are not formed. Instead sediments fold up to form non-volcanic young mountains [Eg] Himalayas.

(c) when ocean-ocean plate converges, extensive volcanic mountains are generally not formed because the plates are dense & don't cause much folding as they don't sink much.

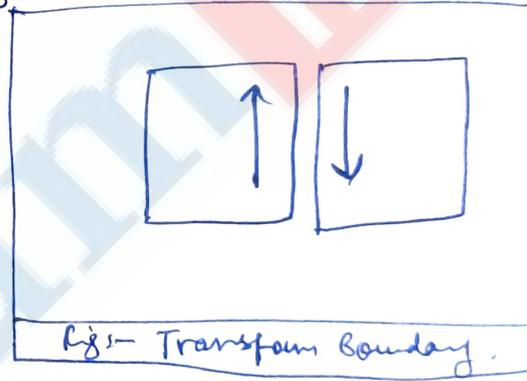
2. Divergent plate boundary

- ↳ It forms when the two plates move apart from each other.
- ↳ Lava doesn't erupt viciously, rather basaltic plains (abyssal plains) & mid-ocean ridges are formed.
- ↳ Eg Mid-Ocean Ridges of the Atlantic Ocean.



3. Transform Plate Boundary

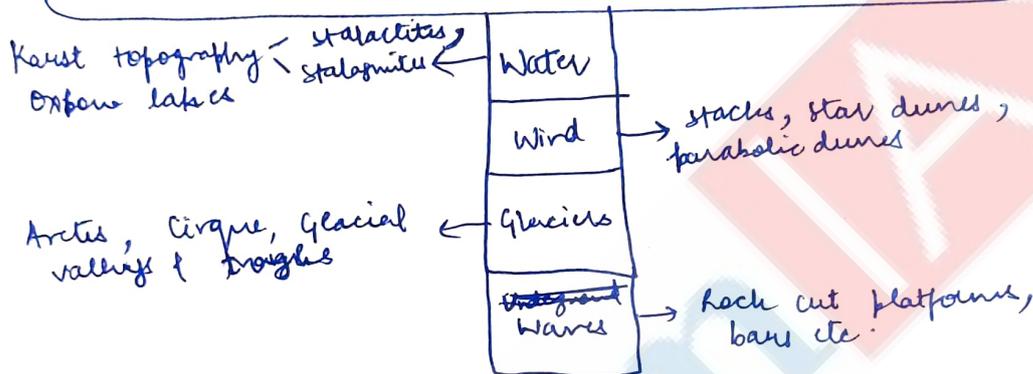
- ↳ When plates slide past each other.
- ↳ Don't cause the formation of young fold mountains or volcanic eruptions, but are areas of instability, so earthquakes are observed.
- ↳ Eg Carolina plate boundaries at right angles causing tectonic activity.



Understanding of plate boundaries, help in hazard mapping of earthquakes & volcanoes, to provide for early mitigation of disasters as per Sendai framework.

Q.12) Geomorphic agents cause denudational activities or depositional ones, leading to the formation of landmasses. While certain geomorphic agents cause diastrophic shifts, others may lead to swift orographic lifts.

Geomorphic agents & their imprints on landforms



Landforms formed by glacial action

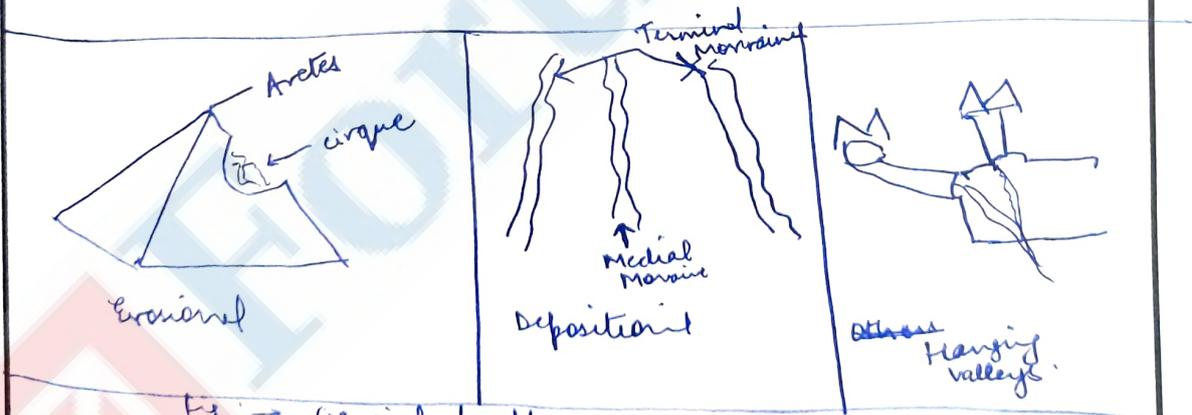


Fig. → Glacial Landforms

EROSIONAL LANDFORMS

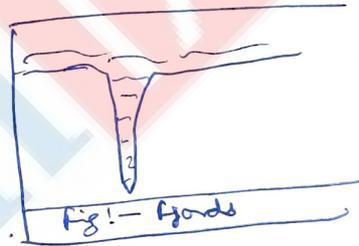
1. Glacial Troughs → Erosion of the glacier through massive movement of ice created

depressions on its ways which are called
glacial troughs.

(2) Arctes → It is the peak of mountains caused
by glacial erosion on three or some sides.
It occurs in the form of stiff peaks.

(3) Cirque → High abrasion & plucking by a
glacier causes depressive cirques, which get
filled with water over time, forming cirque or
tarn lakes.

(4) Fjords → fjords are created
by glacier & water erosion &
form one of the most scenic
landscapes. (eg) Norway, Sweden.



(5) Hanging valleys → are the V-shaped valleys
formed on the hills due to glacial erosion.
They seem to be hanging over the valleys.

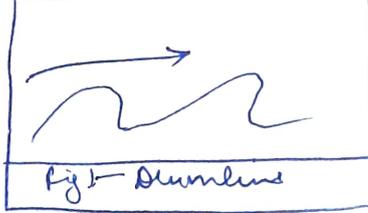
DEPOSITIONAL LANDFORMS

(1) Moraines → are the depositional material
carried by glaciers.

* Terminal moraine - are present on the
two ends

* Medial moraine - are formed on the
middle of glacier movement.

② Drumlines → are small hills formed due to deposition of coarse material. Their bent helps to understand the direction of glacial movement.



③ Eskers
↳ These are ridges formed by sediments brought by glaciers.

Significance of glacial Landforms

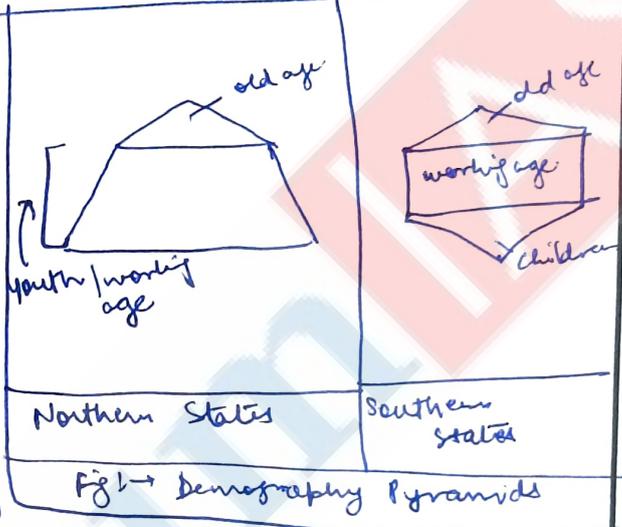
- Picturesque landscape leading to "Ecological Tourism"
- Fjords provides places for best harbours → aiding in navigation
- Mineral resources → minerals through processes of plucking & abrasion, bring minerals to lowland areas.
- Cirque lakes / Tarn lakes → provide survival to species in the cold climate.

Due to climate change, "glaciers" are experiencing widespread melting, acting as "positive climate forcing", having adverse effects on life of small-island developing nations.

354968_811528_1910141559_2025-06-15_20:02:04
 Q.13) White Paper - China in its demographic rise as per UN, becoming the most populated nation. However, recent statements by Chief Ministers of Kerala & Tamil Nadu, show uneasiness in southern states on their "controlled population growth".

Issues of demographic transition in southern states

1. Decline in working age population
 ↳ leads to lack of sufficient labour force leading to slow economic growth & reluctance of MNC's like Apple to establish their manufacturing & assembly units.



2. Huge burden of old age & social security & pension

↳ States will face fiscal deficit due to increase of revenue expenditure on social security policies -> Old age pension, Vay Vandana Yojana ; Vayoshree Yojana.

3. Capital decline due to productivity decline

↳ Decline in productivity due to increase of old population leads to decline in organizational growth leading to falling capital investments.

④ Entrepreneurship spirit will suffer

- ↳ Since young population are risk-taking & enthusiastic for new startups, southern states shall suffer.
- ↳ India, being the 5th largest startup hub in world will face backlash.

⑤ Impact on social policies

- ↳ Political participation from southern states in Parliament will decline.
- ↳ Southern state policies will take a backseat due to lack of representation at national level.
- ↳ Policies will be made to help & elderly in their sustenance.
- ↳ Upskilling initiative policies will take a backseat.

Positive role of low fertility & ageing population

① Low population pressure & rise in per-capita income

- ↳ Due to declining population pressure on resources (eg agriculture), the per-capita income shall increase.

② Better livelihood & employment opportunities

- ↳ Due to less competition for resources, more livelihood opportunities.
- ↳ This will lead to decreased perception of inequality thus promoting communal harmony.

③ Concentration & implementation of Govt. policies →

- ↳ Reaching the last man possible.
- ↳ Better implementation of policies can occur.

354968_811528_1910141559 (2025-06-15 20:02:04)

leading to their Saturation & realizing Gandhian vision of "Sarvodaya" & "Antyodaya".

4) Rise in standard of living

↳ Due to better economic prospects & penetration of social security → better health, water, infrastructure can be made available.

5) Reaping silver economy & ageing dividend through "active ageing"

↳ Old age when productive can engage in mentoring through experience-based jobs leading to economic boost through their contribution.

6) Impact on social welfare policies

- ↳ Southern states of ~~India~~ will emerge as "Global Practice cases" boosting tourism (e.g. Kerala Model) thus policies to streamline tourism hubs.
- ↳ Antyodaya scheme for above 65 years & Vayoshri Yojana can be technologically implemented promoting e-Governance.
- ↳ Incentives for birth control can leverage social mobility through inclusive social policies.

India's huge potential in form of its demographic dividend shall be reaped through policies to build human social capital through quality education & skills training. As President Mamoi said "India is moving to an era of its highest climb through reaping the demographic dividend & taking measures to eliminate causations of any demographic crisis".

Feedback
(For OFFICE use only)

#	C	A	P
AWIS			
CD & VA			
S & F			
P & R			
Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

354968_811528_1910041559_2025-06-15_20:02:04)
 Q.14) - Ocean salinity is defined as the amount of dissolved salts in grams found in ~~1000~~ 1kg of water. It usually is range from 33 - 37 grams per kg in major oceans of the world.

Recent report of IPCC - 6th report → reflects on the rise in salinity of Red sea in recent past.

FACTORS RESPONSIBLE FOR VARIATIONS IN OCEAN SALINITY

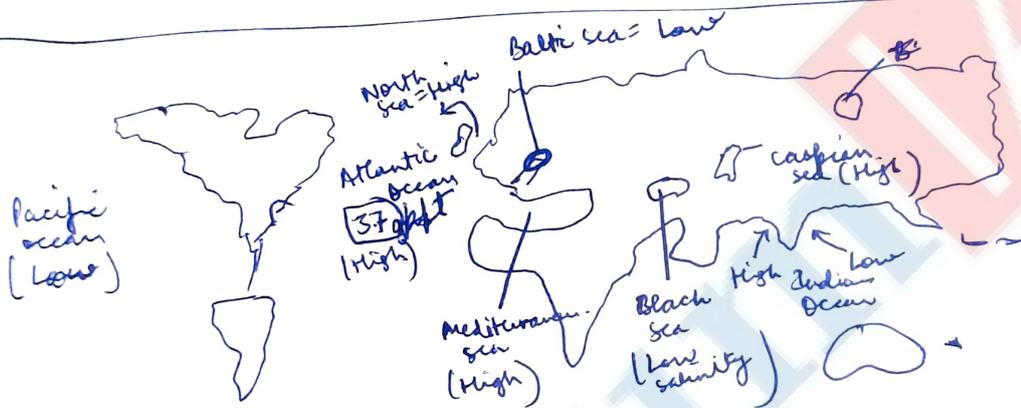


Fig 1 → Salinity variations in global water bodies

① Precipitation

↳ High rainfall causes dilution of salts & thus salinity falls.

② Evaporation regime

↳ High evaporation leads to more salinity as water evaporates to leave behind salts

↳ (eg) Red sea & Dead sea salinity high due to high evaporation

③ Ocean
 ↳ Eg North Atlantic drifts brings saline water to North Sea increasing its salinity.

④ Influx of freshwater rivers

↳ Eg Bay of Bengal less saline due to various rivers like Ganga-Brahmaputra draining into it while Arabian sea has high salinity less to limited influx of fresh water.

⑤ Surrounding landforms → Enclosed by continents

↳ Eg Caspian sea & Mediterranean sea enclosed by continents experience greater salinity.

⑥ Adiabatic Dynamics

↳ Impacts upwelling & downwelling of oceanic water, thus impacting its salinity.

⑦ Expanse of ocean / length / Area covered by ocean

↳ Eg Pacific ocean is vast & thus salinity differs. On an average, salinity is close to 34 parts per ~~1000~~ thousand in Pacific.

Impacts of salinity



While ocean salinity impacts multitude of factors like technology & infrastructure development & impacts global trade. It thus determined economy as Napoleon Bonaparte rightly mentioned "Geography determines economy".

354968 811528 1910141559 (2025-06-15 20:02:04)

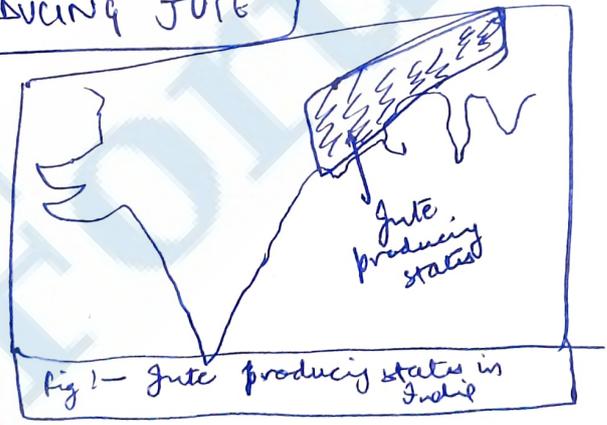
Q.15)

Jute, being a water intensive crop, requiring rainfall > 200cm & hot-humid climate continues to drive India's interests. India is 2nd largest producer of this "Golden Fibre", which is instrumental in textile industry.

JUTE - A GOLDEN FIBRE

- ↳ Jute is called a golden fibre due to its immense economic potential
- ↳ It is highly valuable for any country's economy & its usage in textiles, packaging is immense
- ↳ The flowers/stems of the plant bloom in golden colour, hence earning a golden hue in its farm.

STATES PRODUCING JUTE



After partition, 2/3rd of India's Jute area was transmitted to Bangladesh, leaving 1/3rd to India.
West Bengal produces more than 70% of India's Jute.

354968_811528_1910141559 (2025-06-15 20:02:04)
 & intensive water lands as a result of marshy
 Gangetic Delta. Also, its hot-humid climate
 is suitable for jute cultivation -

→ Some parts of Odisha & Assam also produce
 jute due to "topographical advantages" &
 "suitable climatic conditions".

→ jute industry is also seen to be concentrated
 in areas near West-Bengal due to
 availability of raw material in line with
 Weber's Industrial Location Theory.

However, jute mill industry is declining
 in India

This can be attributed to: →

1) Loss of productivity of raw material

↳ Due to climate change, the per hectare
 productivity of jute has declined in
 recent past.

2) Labour & Capital

↳ Labour migration to other industries
 conglomerated in the area like iron-steel
 caused their shortfall in jute industry.

→ Adequate capital investments in jute
 industry are missing.

Feedback

(For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick
 marks in the above
 table.
 Here G is Good, A
 is Average and P is
 Poor.

TOTAL MARKS	
----------------	--

3) Technological backwardness in jute industry
 ↳ New technology like Machine Learning & Artificial Intelligence hasn't been integrated in jute industry.

4) Govt Policies

- ↳ Trade incentives on jute are minimal
- ↳ Production Linked Incentives to other industries & not jute.
- ↳ For demand in textile has reduced, thus Govt didn't include it in Production-Linked Incentive Scheme.

5) Competitors from Bangladeshi Jute

- ↳ Bangladeshi jute is of better quality & thus Indian jute faces high trade barriers in International Market.
- ↳ In March, European Union applied sanitary & phytosanitary measures standards on Indian jute.

While jute industry is declining, it is imperative to understand that Govt is supporting jute farmers through its Ministry of Cooperatives by incentivising (tax cuts) this industry. Jute, being a golden fibre, can aid India in being "Atmanirbhar Bharat by 2047".

354068_811528_1910141559 (2025-06-15 20:02:04)

Q.2)

Tides are geophysical phenomena observed in water bodies, with the rise & fall of water due to the gravitational pull of sun & moon.

High tides are low tides are normal phenomena, & generally not a disastrous.

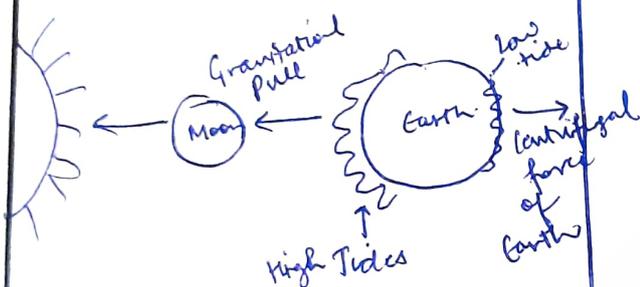


Fig 1 - Tides formation

Fig 2 - Waves

PROCESS OF TIDE FORMATION

Competing forces of gravitation & centrifugal force causes the occurrence of tides.

Gravitational pull of sun & moon attract water towards themselves while centrifugal force of the earth repels these forces.

Due to this force, either tides are formed twice a day → Semi-Diurnal Tides or once a day → Diurnal Tides

Both high tides occur when the earth faces the sun & moon while low tides occurs when earth's ~~down~~ opposite side is exposed to gravitational pull of sun & moon.

Spring tides are formed when earth, moon, sun are in straight line.
→ high tides are higher & low tides are lower

Neap tides occur when earth, moon, sun are perpendicular at an angle of 90°, very high tides are not observed.

Differentiate between Tides & waves

Basis	Tides	Waves
Occurrence	Tides occur due to the effects of gravitational & centrifugal forces balancing each other.	Waves occur due to the energy that is transmitted to water. (Eg) wind energy or tectonic energy transmitted to water.

Feedback
(For OFFICE use only)

#	C	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.
Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
-------------	--



354968_811528_1910141559 (2025-06-15 20:02:04)

Q20

Tides

Waves

Timing / Duration

Occurs once or twice daily

May occur every after or at a delay → no fixed timing.

Effect of shore

Tides are not directly related to the effect of shore.

Waves are high near shore, but lose energy on crossing shore, so deplete.

Movement

Includes the vertical rise & fall of water

Involves the horizontal movement of water propelled in a circular path from underneath.

While both tides & waves are mainly the geographic phenomena, they differ in their impacts. However, they help in bringing nutrients to surface, thus aiding in "marine ecology" & ~~feeding birds~~

354968 811528 1910141559 (2025-06-15 20:02:04) "Composite Water Index"
 According to NITI Aayog, water scarcity has affected 22 states of India & is projected to grow at a rate of 7% annually.

Water crisis is caused by certain factors: →

① Mismanagement of Monsoons / Erratic Monsoons
 ↳ 70% Indian agriculture is dependent on monsoons which are erratic due to influences of El-Nino, La-Nino etc.

② Mismanagement of water resources
 ↳ water pollution is widespread causing ^{increase} depletion of biological oxygen demand & ^{thus} making available water unsuitable for use.

③ Concretization & Urbanization led disruption in evaporational processes →
 ↳ Increased concretization in land-use planning provides less green spaces & thus water is not re-plenished through evaporation process.

④ Climate Tipping Points & Climate forcings
 ↳ Climate change has caused floods in some areas while severe heatwaves & droughts in others.
 ↳ [Eg] Climate change driven droughts in Maharashtra, heat waves in Florida (U.S.A.).

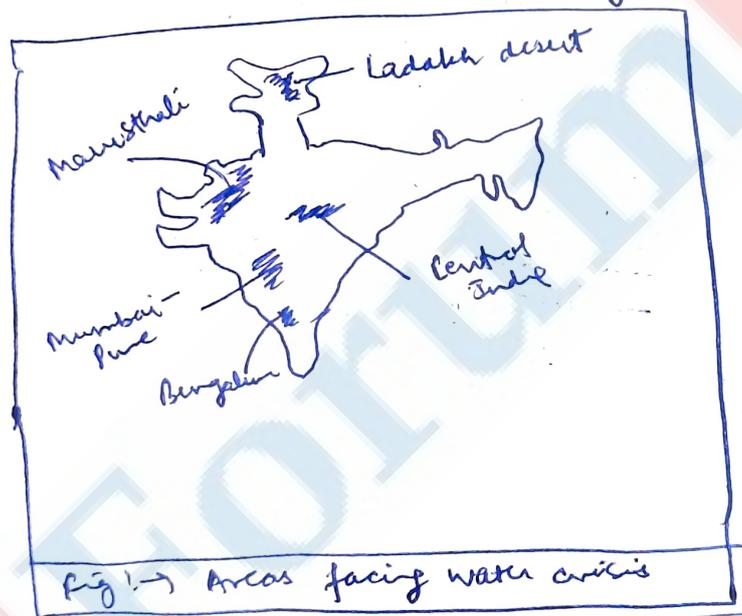
⑤ Headwaters of Drought

⑤. Cropping patterns are unsustainable

↳ Eg Punjab - Haryana over-irrigation led soil acidification & salination increase.

⑥. Thwarting traditional practices & embracing materialistic modernisation (social causes)

Traditional practices of rainwater harvesting through johads, Tankas have depleted, causing less inclination towards harvesting water.



Socio-economic impacts of water scarcity

① It affects the agricultural productivity of high water dependent crops (Eg Rice, cotton, jute, sugarcane, tea, coffee).

② This will impact India's trade potential. Eg India being 2nd largest producer & exporter of Rice will suffer export losses.

- 3. Impact on industrial dependent on water
(eg) Iron-steel; paper industry suffer losses.
- 4. Conflicts & social disharmony due to limited availability of water, leading to feelings of perceived injustice & competition among groups [eg] Koli tribe's water wars.
- 5. Impact on family structures due to less availability of water. (eg) India may move from "water-based society" to "paper-based societies" (Economic Survey 2024) emulating the west.
- 6. Inequalities in water distribution will lead to more prevalence of poverty & the ^{near} poor moving below the poverty line.
- 7. It will halt technological progress which is water-intensive. New research will be thwarted.

But practices like China's 'sponge cities' & Africa's seawalls & USA land absorption intensification through the use of green spaces can be used in cities like Bangalore to preserve water through groundwater recharge & also prevent urban floods.

Please do not write anything except the question number in this space.
कृपया इस स्थान में प्रश्न संख्या के अतिरिक्त कुछ न लिखें।

इस हाथी में नहीं लिखना चाहिए।
Candidates must not write on this margin

354968_811528_1910141559 (2025-06-15 20:02:04)
Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.
(Specimen Answer Booklet - For Practice Purpose Only)

18.) El-Nino Southern Oscillations is a phenomena observed in Pacific Ocean, near the Peruvian coast, due to the abnormal warming of the Pacific.

El-Nino - FORMATION

↳ Due to counter-equatorial currents, propelled by change in direction of trade winds, warm winds reach Australia, causing heavy rainfall & flooding

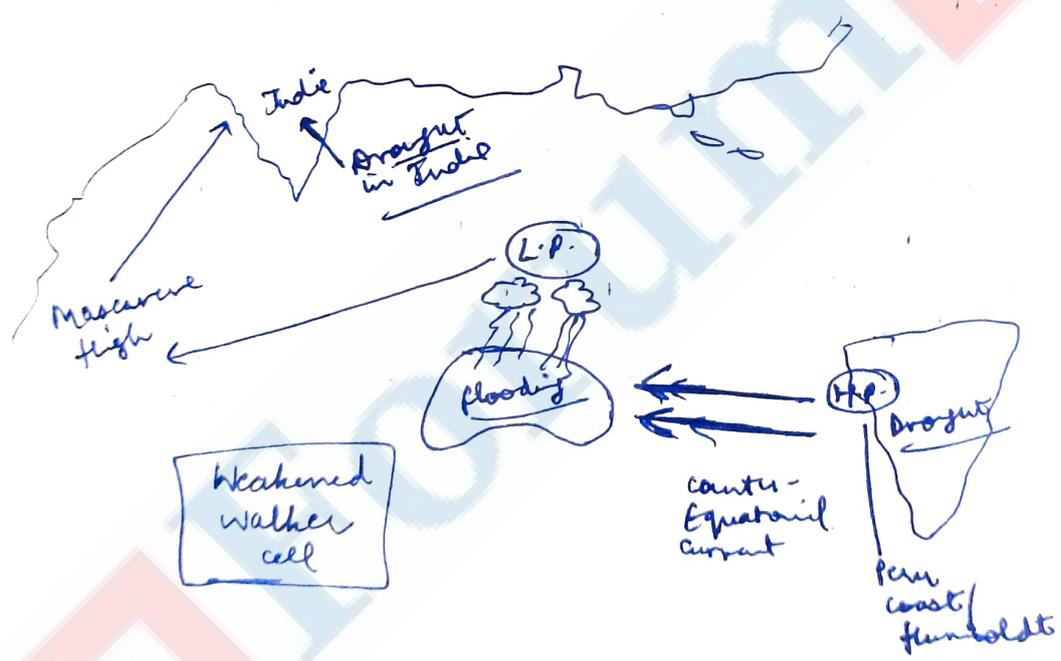


Fig: - El-Nino southern Oscillation

↳ Contrarily, Peruvian coast & India face drought like conditions.



Impact on climate

- ↳ It changes the climate of Peruvian coast & causes drought like conditions
- ↳ Similarly, India & China also experience drought-like conditions due to low moisture capacity & less relative humidity.
- ↳ Weakening of Walker cell due to El-Niño is the main reason for droughts in India.
- ↳ However, hot & moist waters causes a creation of low pressure over Australia leading to heavy showers & thunderstorms. Thus, it causes flooding in Australia.
- ↳ They bring thunderstorms in the Atlantic Ocean & thus impacting the climate of USA & Canada.

Societal Impact

- ↳ It disrupts the fishing occupation in South America & thus fishermen suffer loss & anxiety about their livelihoods.

(Please do not
write anything
except the
question number
in this space)
कृपया इस स्थान
में प्रश्न संख्या के
अतिरिक्त कुछ
न लिखें।

354968_811528_1910141559_(2025-06-15 20:02:04)

UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.
(Specimen Answer Booklet - For Practice Purpose Only)

उम्मीदवार
इस प्रश्न
नहीं लिखने
चाहिए
Candidate
must not
write on the
margin

- ↳ It causes disruption in celebration of festivals in India on the arrival of monsoons & impacts agricultural yield.
- As India is primarily monsoon dependent, a bad monsoon causes large-scale farmer suicides.
- The shift of ~~sea~~ causes migration (inward & outward migration) in India.
- It brings policy changes in Australia & implementation of Disaster Management Act due to intense flooding.

El-Nino Southern Oscillations are found to impact around 27% of world's population & World Meteorological Organization has started a campaign "Weather forcings" to contain the effects of Climate Change on Oceanic Phenomena.