



IAS Edge

GS Mentoring (Mains) - Test 04

Topic: Physical Geography + Contemporary Issues

Name:-		Email ID:-	
Contact No.:-		Date:-	

Important Instructions

Candidates should read the under mentioned instructions carefully. Violation of any of the instructions may lead to penalty.

DO'S :

1. Read the instructions on the cover page and the specific instructions to this Question Paper mentioned on the next page of this Booklet carefully and strictly follow them.
2. Write your Name and other particulars, in the space provided on the cover page of the Question-Cum-Answer-Booklet.
3. Write legibly and neatly in ink. Pencil may be used for drawing diagrams, sketches, etc.
4. For rough work, blank pages provided at the end of this booklet should be used. The rough work 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 valued.
6. Hand over your Question-Cum-Answer-Booklet personally to the supervisor/invigilator.

DONT'S:

1. Do not write your Name or Name of the subject of Question-Cum-Answer-Booklet anywhere inside this Booklet.
2. Do not write anything other than the actual answers to the questions anywhere inside your Question-Cum-Answer-Booklet.
3. Do not tear off any leaves from your Question-Cum-Answer-Booklet. If you find any page missing, do not fail to notify the Supervisor/invigilator.
4. Do not write anything on the Question Paper available in detachable form. Write answers at the specified space only.

(To be filled by Examiners only)

Questions No.	Starting Page No.	Marks	Section Total	Signature of Examiner
1	2			
2	5			
3	8			
4	11			
5	14			
6	17			
7	20			
8	23			
9	26			
10	29			
11	32			
12	35			
13	38			
14	41			
15	44			
Grand Total				

Instructions: Answer questions in NOT MORE than 200 words each. Content of the answer is more important than its length. All questions carry equal marks (12.5marks)

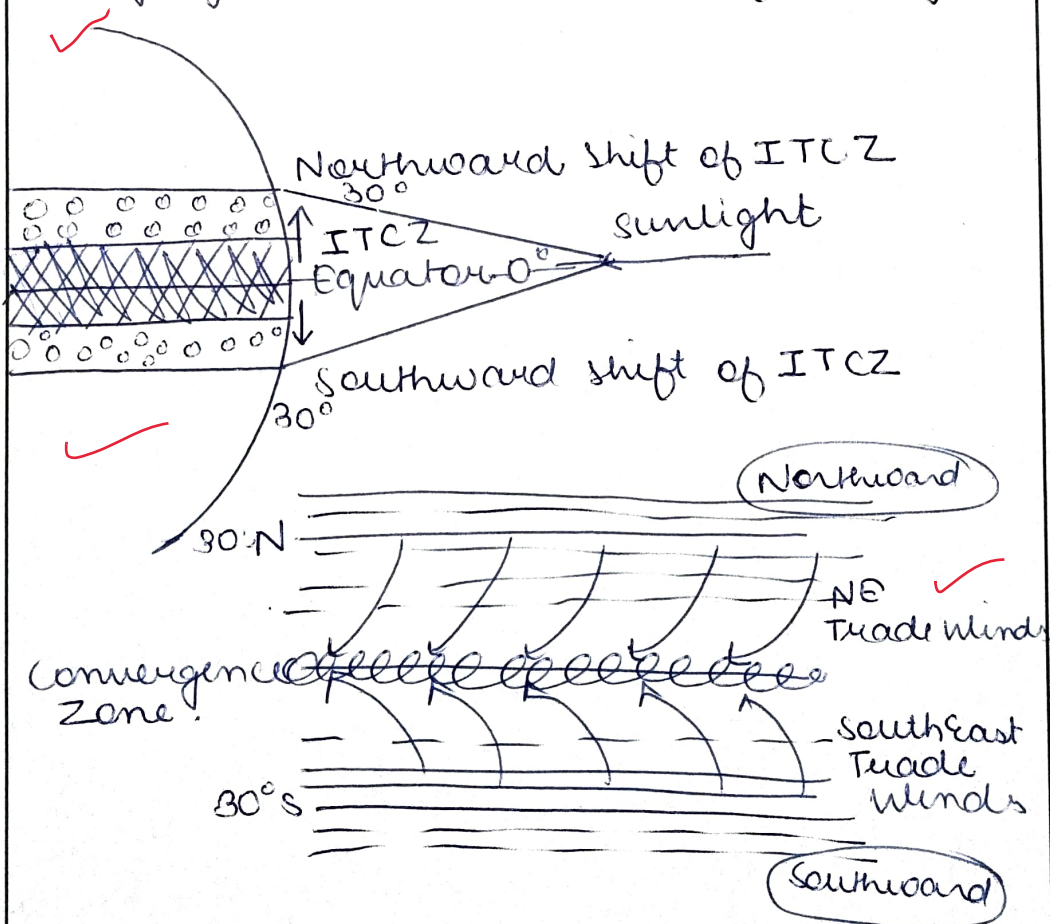
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1. What is inter-tropical convergence zone? How does it influence the Indian monsoon?

ITCZ or Inter Tropical convergence Zone is a broad Trough of low pressure existing in Tropical areas as a result of the intense insolation received from the sun throughout the ~~the~~ year.

They are the point of convergence of the North East and South East Trade Winds and are also known as Doldrums where wind remains largely stable and static flowing

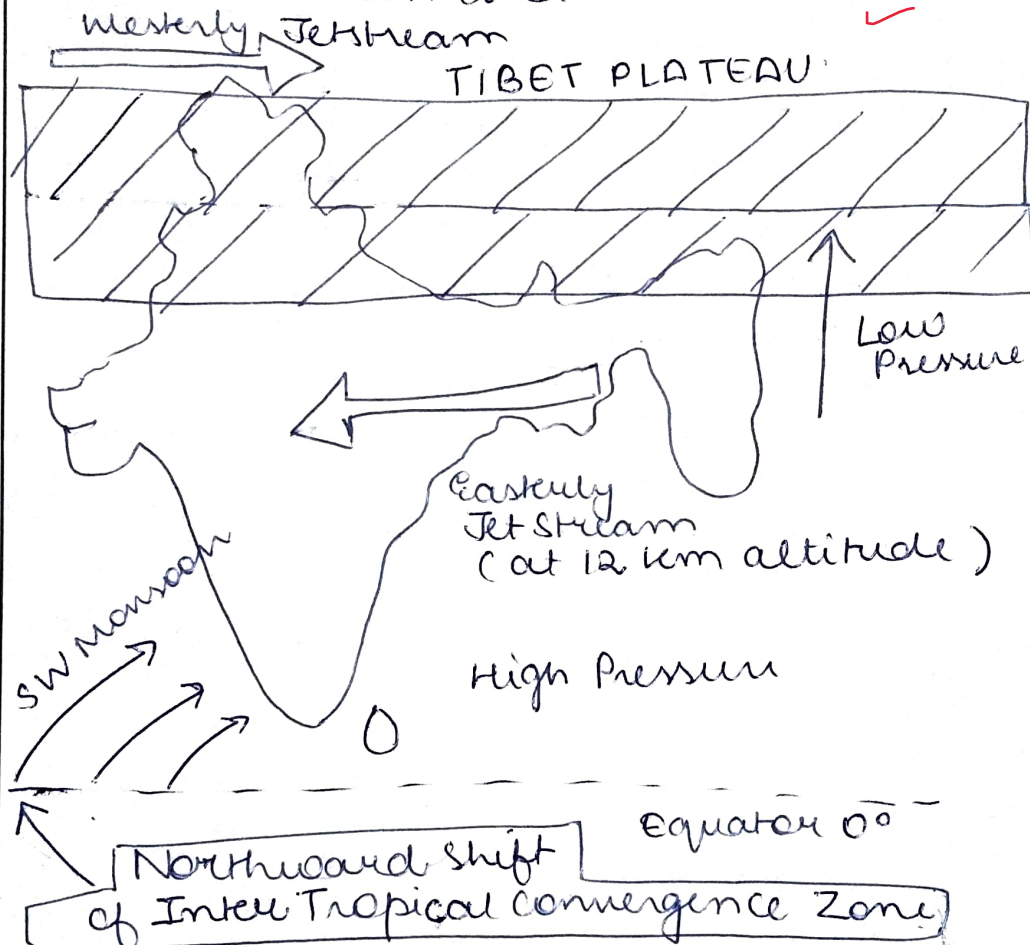


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Role of Inter Tropical Convergence Zone in Indian Monsoon

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Monsoons are the seasonal reversal of winds across the equator that cause torrential rain and thunder storm.



① Northward shift of ITCZ causes intense heating of Northern plains and Tibet plateau allow formation of a low pressure in the region. Thus, it attracts High Pressure (moisture laden south western Trade winds) to low pressure according to the Thermal Theory of Monsoon.

② South East trade winds once after

Draw Two Diagrams showing
reversal of wind

Flohn's
theory.

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passing Equator get deflected to the Right by Coriolis force.

③ The shifting of ITCZ (which is the boundary for North East and South East Trade winds) facilitates the passing of Tropical Easterly Jetstream over India and while Tropical Westerly passes over the Tibet region. These help in attracting Moisture laden monsoon winds from zone of Madagascar and Mascarene Islands.

Thus, the Inter-tropical convergence zone helps facilitate a successful entry of monsoon into the Indian subcontinent which is very crucial for the socio-economic existence of the people of South Asia.

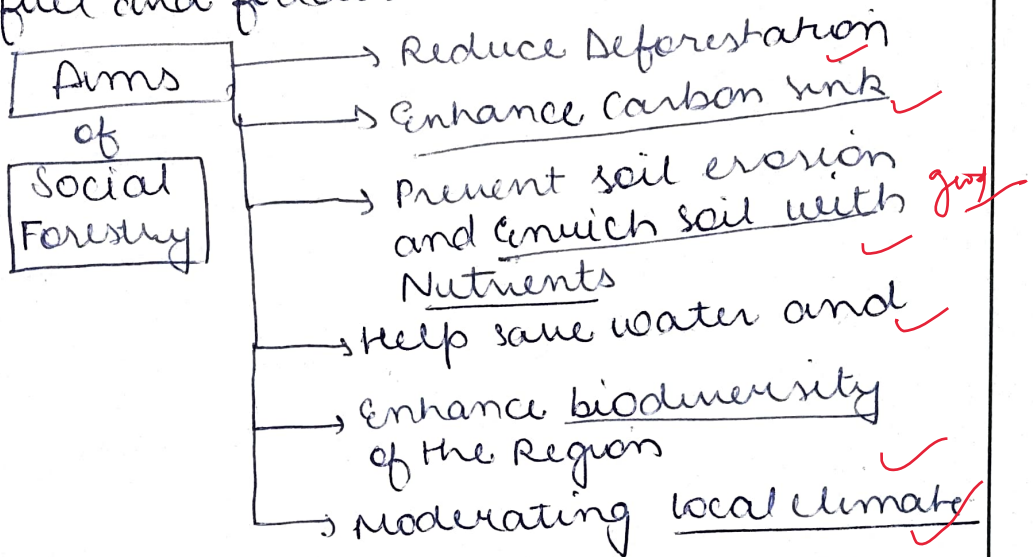
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2. What do you understand by social forestry? Highlight its socio-economic significance for country.

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Social forestry is the use of fallow/uncultivated land to protect deeper and more valuable forests from deforestation and exploitation. It includes growing of fast-growing trees to meet the day to day needs of the people of food, fuel and fodder.



Socio-economic significance of Social Forestry

- ① Economic and saves additional cost of firewood, grazing pastures etc. ✓
 - ② Conservation of Energy.
For eg- in Budget 2020, under KUSUM scheme, farmers would install mini solar power projects in off-~~season~~ season or non agricultural season. ✓
- Day to day needs of energy can be met from here. ✓

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- Forests also moderate the climate locally and cause a 'cooling effect', thus reducing need for fans, coolers.
- ③ MEDICINAL value and Health Benefits
 - Through collaboration with National Ayush Mission - a number of places can be earmarked to grow medicinal plants and trees like Neem, Turmeric, Amla.
- ④ Alternative livelihood practices ✓
 - eg- silk rearing (sericulture), (Apiculture) bee rearing.
 - A number of fruit processing industries can be opened up.
- ⑤ Providing Raw Material (like wood) for various industries (furniture, construction, tourism) and generating employment ✓
- ⑥ Shelter and lay pasture for grazing animals. Dairy cooperatives can be started using the National Gokul Mission ✓
- ⑦ Agro forestry :
 - eg- in Kerala → in Kuttanad wetlands, saline variety of paddy is grown. Along the border of lands, coconut trees are grown. Fish is also reared in the wetland. After fishing, the land is used for cultural activities like On Race.

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Above all, social forestry would provide relief to the rapidly declining forest cover of India. According to India State of Forest Report, 2019 only 24.56% of our land is under forest cover when the ideal should be around 33% of our land. Thus, social forestry will be of immense social and economic significance to the country.

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3. Highlight the importance of location as a factor of desert formation.

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Desert is a biome with extreme temperatures and little to no precipitation (25 cm or less). They cover 30% of Earth's landmass. Although, the process of weathering and breakdown of rock play a great role in formation of these arid landscapes, it is LOCATION that emerges as a single largest factor for formation of deserts.



→ cold currents

① Subtropical Latitudes

Subtropical regions between 25°-40° are zones of High pressure with very little atmospheric disturbances.

- North East Trade Winds and South East Trade Winds carrying the least moisture are deprived of any remaining water content by the time they reach the Western Margins of the continents.
- This is why it is said that most of

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World's deserts are found in Western Margins of the continents.

(eg - Australian Desert; Thar Desert Californian Desert) ✓

② Cold Ocean currents → desiccation of Moisture

✓ Benguela current (Namib Desert)

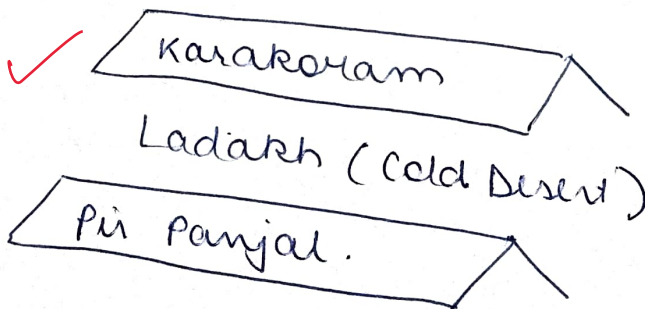
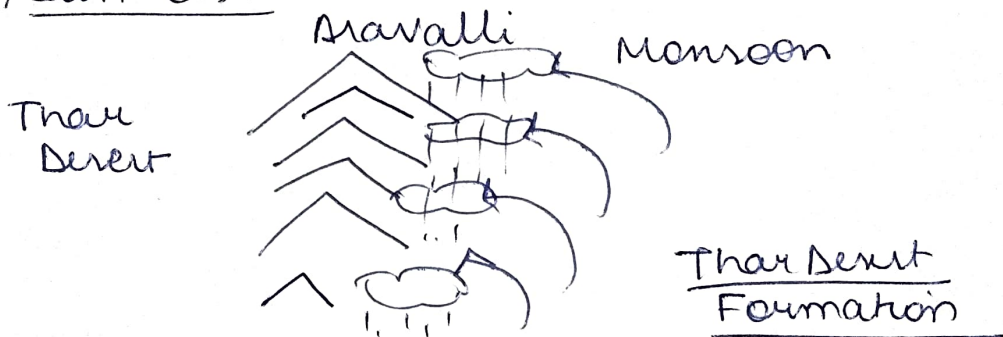
Humboldt current (Atacama Desert)

Californian current (Californian Desert)

Canary current (Sahara Desert)

③ Rain shadow effect ✓

✓ When Mountain Ranges block moisture and due to orographic rainfall on one side, the shadow side remains rain-less



④ Altitude

Temperature drops with altitude. Thus, cold deserts are likely to occur here.

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eg - Ladakh, Tibet

⑤ Continentality Effect

eg - Gobi Desert, Dshht-e-ut (Ghan) (Mongolia)

Due to their distance from sea and land-lockedness, these deserts are in no. position to receive large amounts of rainfall.

Thus, location is a major factor in the presence or absence of deserts in a region. Topography and relief intensify the effects of aridness and lack of precipitation.

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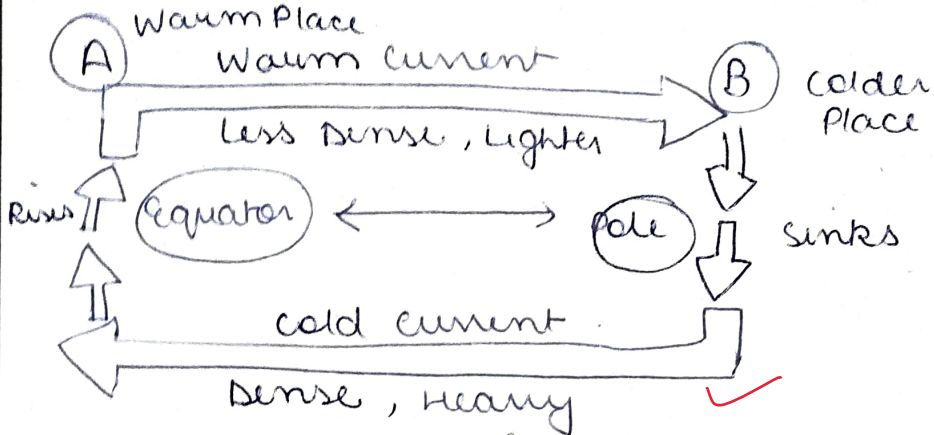
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4. What do you mean by Ocean Currents? Discuss the forces responsible for their movement.

Ocean currents are general horizontal movement of ocean water in a definite direction. Depending on the temperature of water that is carried → Ocean currents can be cold or warm. Water moves from one area to another, in order to balance the HORIZONTAL HEAT BUDGET across the ocean.



Factors responsible for Movement of Ocean water

① Sun and Insolation ✓

Sun is the ultimate source of energy and causes molecules to expand and rise by heating. Thus colder molecules keep replacing the displaced part resulting in circular motion of water.

② Rotation of Earth and Resultant Coriolis force that deflects currents in Northern Hemisphere to the Right and in Southern Hemisphere to the left.

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③ Gravitational pull of the Moon resulting in Spring Tide (when sun - moon and earth are in the same line) and Neap Tide (when sun, moon and earth are perpendicular to each other).

④ Salinity, Density and Pressure

- Cold current is generated from cold water, which is heavier, more dense and more saline. It flows from Polar regions (High Pressure) areas to the equator.

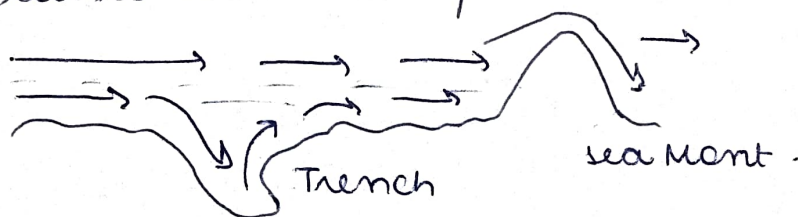
- Warm current is generated in warm waters of the Tropical Equator region. It is lighter, less dense and less saline.

- Salinity also varies based on precipitation, location within continents.

⑤ Topography and Relief

Presence of landmass → weak currents
Absence of landmass → strong currents
 (eg - in Southern Ocean).

Bottom Relief result in Thrusting and Plunging effect within the ocean that causes water displacement.



⑥ wind

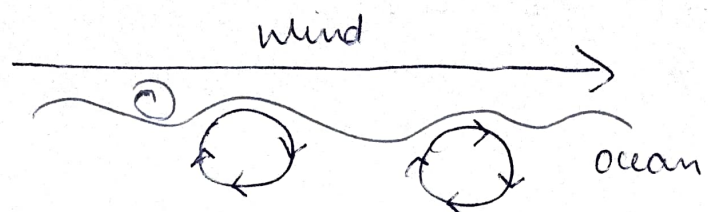
Flow of wind above surface of water displaces water by friction, thus producing surface currents.

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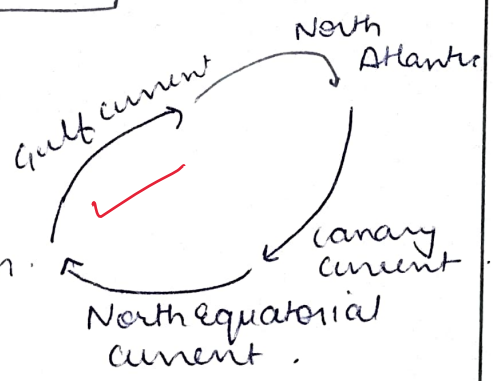
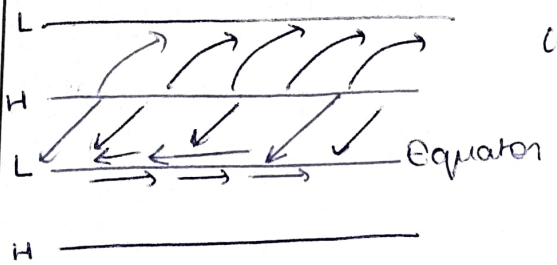
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Ocean currents by and large follow the global wind circulation pattern in the atmosphere.

For eg



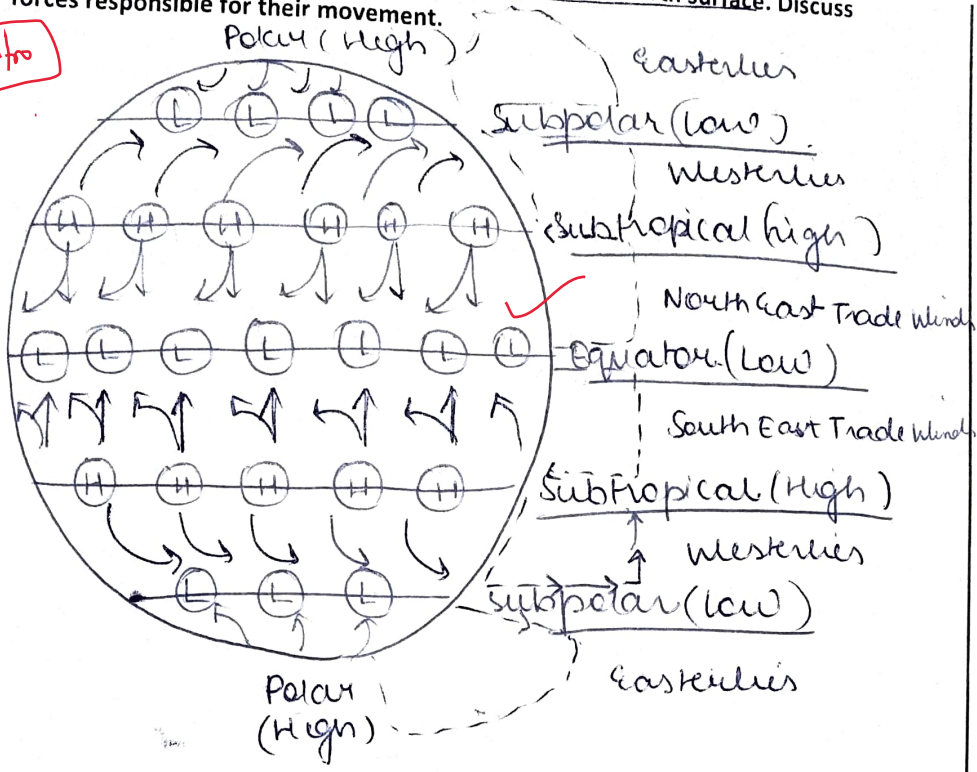
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5. Draw a diagram showing global wind circulation on the earth surface. Discuss forces responsible for their movement.

Intro



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West to East → Westerlies
 East to West → Easterlies

The winds that consistently flow over a region throughout the year are known as PLANETARY or Permanent winds

They are influenced by the following factors -

① Rotation of the Earth and Resultant Coriolis Force

It is the pseudo force that deflects the wind from its original direction. The direction of deflection is given by the Ferrel's Law - In Northern Hemisphere wind deflects to the Right while, in the southern Hemisphere

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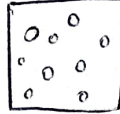
wind deflects from the right to the left

② Insolation

The amount of sunlight received creates difference in temperature and subsequently a different Relative pressure
 eg - Tibet Plateau heating in summer creates a low pressure



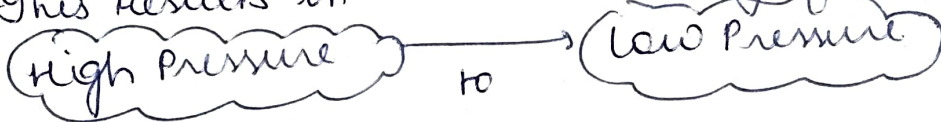
Cold Air
Molecules
(High Pressure)
(High Density)



Warm Air
Molecules
(Relatively low pressure)
(Low Density)

③ Pressure Gradient Force

It is the difference between pressure divided by the distance between them.
 This results in winds moving from



④ Frictional Force

It is the force produced when moving object comes in contact with another material surface eg - topography, vegetation or another building.
 these produce orographic rainfall and local wind variations

⑤ Distance from Oceans

Near Oceans → Maritime effect where temperature range is moderated
Middle of continent → High temperature variations.

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Thus, multiple forces are at work that give rise to the global wind circulation structure.

winds may be permanent or seasonal (eg - Monsoon) or diurnal (eg - Anabatic and catabatic winds)



guy

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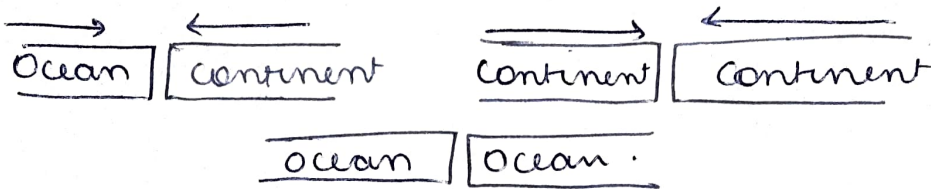
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6. Explain mechanism behind formation of Fold Mountains. Why are they mostly found along the margin of continents?

Fold Mountains are a result of CONVERGENT PLATE MOVEMENT.

When two plates move towards each other, than the heavier denser plate subducts under the lighter plate and the subducted rocks melt / or metamorphise.

The entire region is called SUBDUCTION ZONE or BENIOFF ZONE.



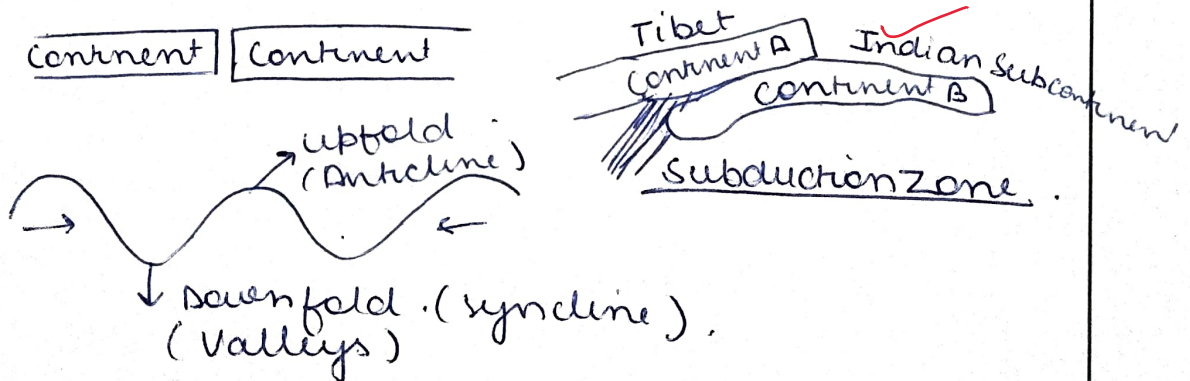
Interactions that Result in Fold Mountains

① Continent-Continent interaction ✓

eg - Himalayas, Alps.

② Ocean-continent interaction

Andes, Rockies, Ouakensburg et c.



Continent-Continent Earthquakes are shallow whereas Ocean-Continent Convergent Earthquakes are deep seated. ✓

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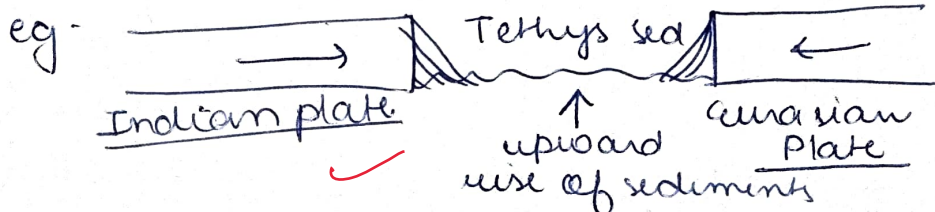
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The reason why most Fold mountains are found along the Margins of the continents are -

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Fold mountains are formed by folding of the crust and the accumulated sediments at the margins of the continents brought by Reversal or rise above by accumulation along the plate boundary.



All these Tectonic processes create a sedimentary basin since material can neither sink or be destroyed.

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7. Bring out the significant features of Mediterranean and British type of climates.

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A combination of factors such as latitude, topography, insolation and distance from the ocean determine the climatic features of a region

MEDITERRANEAN Type of climate

Found in 30-45° latitude in coastal regions.

• dry summer, wet mild winters
This is due to the shifting of sub-tropical High pressure belt between land and sea.

• Regions - Mediterranean coast in Europe, West Asia, North Africa, California coast, Chilean coast, Cape Town (South Africa).

• Precipitation Range - 100 cm/yr.

• Vegetation → shrubs (eg - CHAPARRAL of California), xerophytes, vine cultivation (eg - grapevine) → used for viticulture



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British Type of climate

- 45-60° Latitude ✓
- Average Annual temperature range is 15-20°C.
- Rainfall - 100 cm / yr.
- Very cold winters, maximum precipitation
- wet summer. ✓
- Orographic rainfall, Temperate cyclones occur due to westerlies.
- Due to presence of seas and oceans they experience 'Maritime Effect' where temperature is moderated by seas.
- Regions → North west parts of continents example - Washington (in USA), Argentina, Tasmania, New Zealand and Australia.
- These Regions due to dry winter are suitable for cultivation of wheat, corn and cereals.
- These regions are known as 'GRANARIES' of the world. ✓
- Large scale mechanised livestock farming and cultivation practices on grasslands.
- Occurrence of Tornadoes (in USA) are frequent.
- Soil is rich in humus and black in colour. Ideal for growing sugar in summer season. ✓

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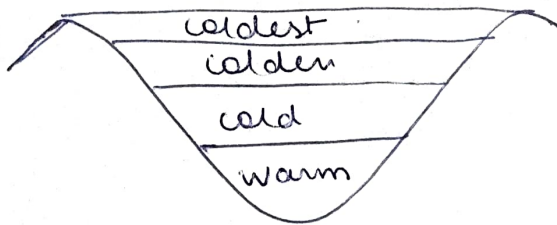
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8. What is temperature inversion? Explain with examples.

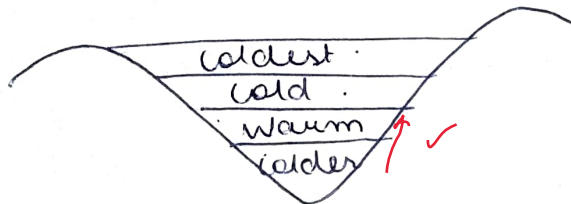
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Under normal circumstances, temperature decreases with height. So, the above air is colder than the air below. But

Thermal Inversion or Temperature Inversion is the reversal of Normal behaviour of temperature in which a layer of cool air at the surface is below a layer of warm air.



Normal Situation



Temperature Inversion

conditions that lead to Thermal Inversion

It occurs in most Regions: subtropical, Temperate, Polar regions especially in winter seasons.

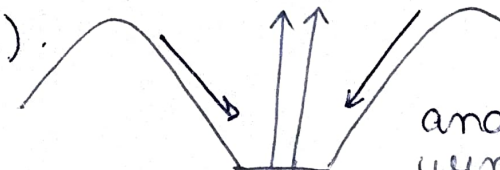
- Long winter Nights with clear sky that elongate Terrestrial Radiation
- Unobstructed Radiation. (No clouds)
- calm and stable air

• Inversions have an important role to play in precipitation, cloud formation and visibility.

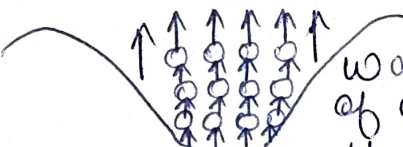
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3 Types through which Temperature Inversion occurs:


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a) Air Drainage  when longwave terrestrial radiation occurs prolonged and cold catabatic winds replace the valley bottom.

b) conduction Method

 Warming of upper levels of air by conduction and the bottom is left cold.

c) Low Farming
Clouds in between

 Clouds prevent the cold air from escaping out making it very cold and humid. Eg in Kashmir this cold and humid condition is ideal for the cultivation of Zaffran (Saffron) in the Karewa soil.

Temperature Inversion does have socio-economic implications X not required

- ↳ good for high altitude/winter crops
- ↳ less tolerant varieties destroyed by frost bites
- ↳ Dust particles and smoke settle at bottom (causing Air pollution)
- ↳ Fog reducing visibility
- ↳ smog (eg - in Delhi due to smoke)

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particles from burning of stubble.
↳ Temperature inversion also sometimes delays rainfall (eg- in winters, the layer of clouds delay the much needed rainfall from western disturbance).

Atmospheric temperature inversion thus, have a wide variety of implications on the climate and human economy.

4.5
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9. What is Urban Climate? Explain wind circulation in urban areas.

Urban climate is the prevailing wind patterns and temperature and other set of atmospheric conditions that are modified by urban landscape. They are most prominent in big metropolitan areas like Mumbai, Delhi, New York, Las Vegas which have tall multi-rise sky high building.

Forms of Urban Climate

① Temperature

a) Create an URBAN HEAT ISLAND where temperature is 2 to 4°C higher than other areas due to heat absorbent properties of concrete, asbestos (on road), metals

b) Wind once entering the lower areas on the street is trapped and unable to escape.

② SMO₂, FO₂

a) When dust, smoke do not disperse due to absent of wind from lower areas, roads, ground floor of buildings.

b) Ground level smog or photochemical smog makes ground level visibility near zero.

③ Orographic effect

Orographic Rainfall results in heavy rainfall on one side of the city and deficient in other.



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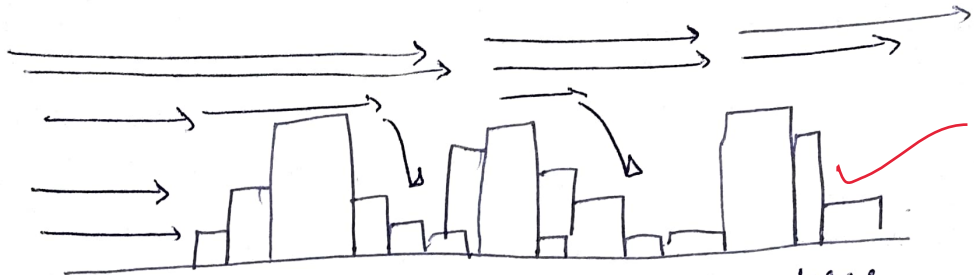
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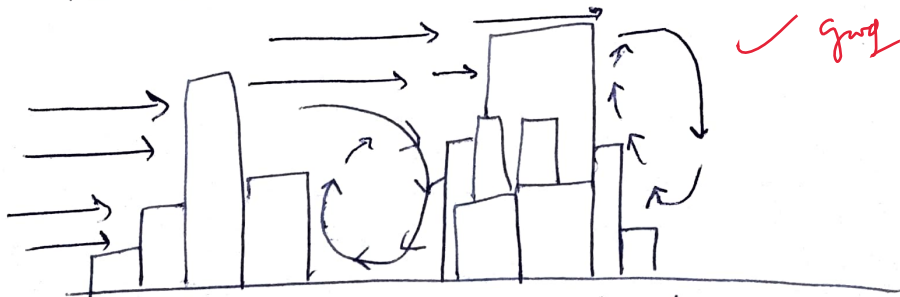
such rainfall causes flash flooding and over-flooding if drainages are not well equipped.

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WIND CIRCULATION IN URBAN AREAS



plunge pool effect where wind rushes from top of the building to the bottom.



circulation effect

Very dangerous as it contributes to poor quality of air, deflects satellite and radio signals. Play a significant role in Industrial and Photochemical SMOG. They also cause more damage during seasonal dust storms.

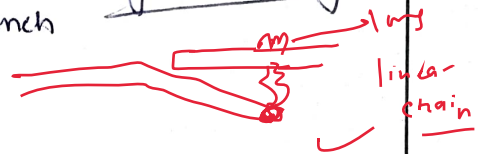
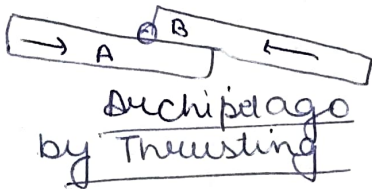
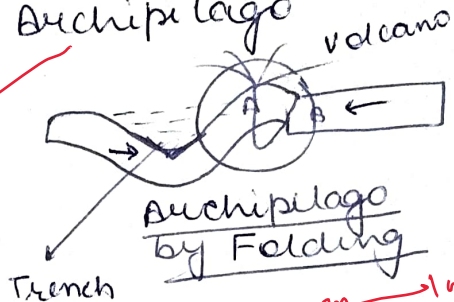
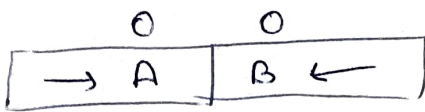
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10. What is Archipelago? Explain formation of thousands of Islands across Indonesia and Philippines.

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The interaction of 2 Oceanic convergent Plates with each other leads to the formation of a group of islands, usually in an arc like fashion. These island arcs are known as Archipelago



Process Denser plate gets subducted and the less denser plate either folds or is thrust up wards or both. Usually a Trench is formed at the boundary of convergence.

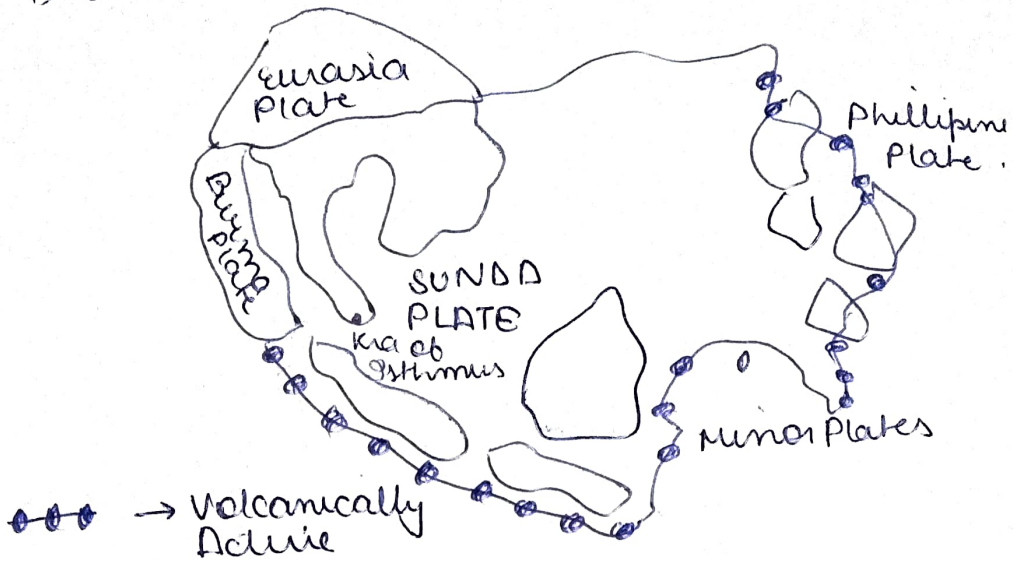
The subducted plate becomes metamorphosed by the intense heat and pressure found in the Asthenosphere, while the Magma released out of displacement comes in the form of volcanic release. (eg - Anak Krakatau in Indonesia.)

Formation of Indonesia

The Indonesian Archipelago is formed by the subduction of the Indo-Australian plate below Sunda plate (which is part of Eurasian plate).

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Trench → Sunda or Java Trench .

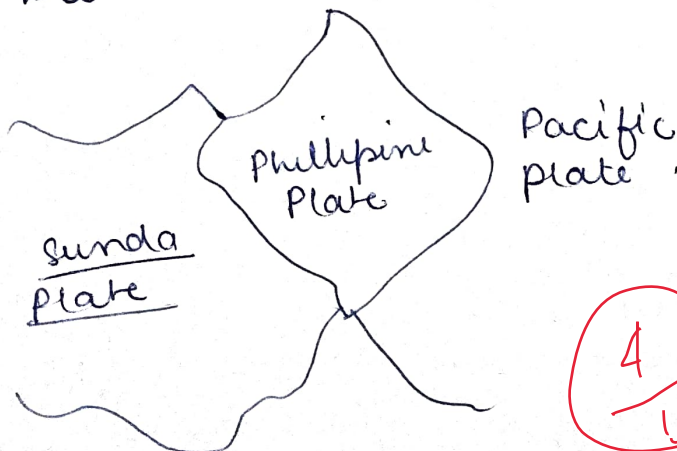


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Formation of Phillipines

The Phillipine Archipelago is formed by the Phillipine Oceanic plate subducting under the Sunda Plate. The Sunda Plate area being under shallow water forms the South China Sea (and is very rich in petroleum, Natural Gas reserves), as well as rich in coastal biodiversity.

Trench → Manina Trench (10.8 km deep)



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Archipelagos are highly unstable and are geologically very Active. They face multiple volcanic explosions within a year and also frequent earthquakes and Tsunami. The Orogenesis (continent building process) is constant and dynamic.

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11. Highlight the issues associated with power discoms in India, discuss whether privatising discoms can help in this regard.

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The government owned Power Distribution Companies (DISCOMS) have faced a massive financial setback due to the steep fall in demand for electricity during the Pandemic. But, they continue to be plagued by multiple structural issues as well.

Issues with DISCOMS

- Heavy Dependence on Fossil Fuel basis for electricity Generation (like coal, diesel - over 80% of generated electricity) ✓
- Huge Financial burden on India's current Account leading to current Account Deficit ✓
- High cost of fuel and Imports ✓
- Difficult Environment for Land Acquisition, Mineral extraction and Mining (making exports cheaper than Domestic extraction) ✓
- Poor Technological Investment (despite abundant coal reserves. (To tackle this Captive Mining in Private sector was allowed in 2019 and 100% FDI in coal sector introduced).)
- Transmission and Distribution losses (state owned losses as high as ~~40%~~ 22% ✓)

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- a) Technical losses → due to poor transmission infrastructure
- b) Commercial losses → eg- leakages and theft.

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→ Populism and subsidising electricity for Political gains. There is lack of political will to improve the state of DISCOMS

→ Inefficiencies in Metering and Billing. Tanh

PRIVATISATION OF DISCOMS AS A SOLUTION

Arguments in Favour

- ① Improve efficiency, management
- ② Rectify source of losses and minimising losses
- ③ Latest Technology and incentive to adopt smart Metering
- ④ will also adopt Renewable energy as per RPO obligations

Arguments against

- ① Electricity is a Concurrent subject. Need State Government consultation
- ② Exorbitant bills. (eg- in 2020 - Ahmedabad Mumbai - Bills for normal middle class homes rocketed to 30,000-60,000 rupees)
- ③ Liquidity Infusion and Revival of DISCOMS needed (eg- through Ujwal Discom Assurance Yojana)
- ⑤ Integrate structural reforms with schemes like Smart Metering, Deen Dayal Upadhyay - Gram Jyoti Yojana (for Rural electrification)

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⑥ Atma Nirbhar Bharat provided ₹90,000 crore liquidity to debt ridden DISCOM sector.

⑦ other steps like - eliminating revenue gaps, regular tariff setting, advance payment of electricity subsidies (through Direct Benefit transfer) will go a long way.

In order to achieve the dream of 'Power for All' by 2022, a set of realistic reforms will need to be brought in. Allowing consumers to choose their ~~own~~ customised packages and tariff rationalisation along with sustainable finance would help improve the condition of DISCOMS.

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Example
Delhi

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12. Harnessing Smart Agriculture can potentially be a game – changer for farm productivity in India. Discuss

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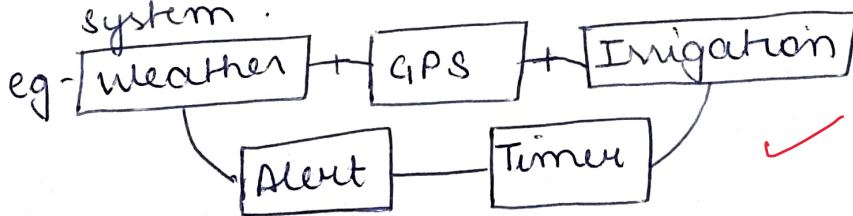
SMART AGRICULTURE or Climate Smart Agriculture is the use of various outcomes of the 4th Industrial Revolution (4.0) into enhancing productivity and livelihoods of farmers in Agriculture.

Need

- 20% of land used for agriculture, only 40% of food produced
- Inefficient use of land and water.
- Indian Agriculture's dependence on Monsoon
- low Marginal productivity of labour in Agriculture.

The following are the Fields of use in Smart Agriculture

① Internet of Things → data and devices can be connected and integrated to one system.



② Artificial Intelligence

AI can be used with Internet of Things and fed with data on soil conditions, available water to predict possible solutions, crops to be sown etc.

③ Sensor Management

Heat, Moisture, level of water, presence of chemicals and subsequent Alert when there is further need.

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④ GPS

- For land mapping and studying Agriculture crop patterns
- Help increase biodiversity
- Better management of land records (eg - SNAMITVA scheme for computerisation of land records)

- ⑤ Drones → for surveying productivity, pest attacks and damage. eg - Gujarat helped farmers use Drones to assess damage caused by Locust attacks.
- spraying pesticides

⑥ Water use efficiency

India utilises almost 37% of its Ground Water in Agriculture (according to central Ground Water Authority).

- Smart agriculture can be used in
- Micro irrigation
 - Drip Irrigation (90% efficiency)
- Help save water for other uses

⑦ Blockchain Technology

- Blockchain - can be used for Food - Processing industries and supply chain Management.
- They can be synergised with Fast - Transport schemes like KRISHI - UDAN and KISAN RAIL.

Challenges

- ① Technology can replace and threaten a labour-surplus agriculture sector

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like India.

- ② Economies of Scale and Fragmentation of land holdings
 - ③ High cost of Technology and would not work unless subsidised
 - ④ Increase inequalities between Rich and poor farmers.
 - ⑤ Pest and Microbial resistance.
 - ⑥ Opposition by Farmers' unions
- Technology and SMART AGRICULTURE has the potential to transform the lives of farmers and 'Double Farmers Income' They can bring about the 'Next' 'Green Technological Revolution' through various means of crop monitoring, soil assessment, crop protection, drainage planning. These require long term collaborations between Agriculture Institutes, NITI Aayog and political will over populism.

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13. Bring out the role played by Financial Action Task Force in tackling the menace of money laundering.

Money laundering is the illegal way of concealing or disguising the source of generated income. It is usually part of much serious crimes such as drug trafficking, organised crime or extortion.

FINANCIAL ACTION TASK FORCE is an Intergovernmental body established in 1989 by G7 countries to bring in effective LEGAL, REGULATORY and operational measures to combat Money laundering and Terrorist Financing.

Role played by FATF

- ① Conducting speedy Investigation in Money laundering, special Terror Financing cells and subsequent Prosecution
- ② Increasing Awareness around the challenges and threats possibly that could be faced by Global Financial systems
- ③ Formation of Research and Study groups to analyse Risks, Trends, methods and give Recommendations to Global Institutions and Governments
- ④ Recommendations on Global policies, standards, best practices
- ⑤ Evaluating performance of FATF member countries and listing them
 - a) List of countries with Strategic Anti-Money laundering and Counter Terror Financing (AML/CTF) deficiencies →

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Pakistan failed to complete FATF plan and was suitably 'Grey listed'

- b) North Korea, Iran both fall in Grey list.
- c) Once a country goes from Grey list to Black list → international financial assistance, investments become very difficult.

⑥ Regular Review of shell companies registered in overseas Tax haven countries like Mauritius, Singapore.

⑦ Collaboration with International stakeholders to identify vulnerabilities in the National-level systems with the help of UNSC (United Nations Security Council) Resolutions.

⑧ FATF has been immensely helpful to India's efforts at raising issue of cross-border terrorism from Pakistan and its funding from Karacala Route. Preventive Measures have resulted in freezing of Assets, using of funds and even partial relief arrests of Internationally wanted (Red Notice by INTERPOL) terrorists like Tajsh-e-Mohammad chief 'Hafiz Saeed'.

Thus, FATF (Financial Action Task Force) has played a key role in putting pressure on the funding of illegal money and its use in drug trafficking, terrorist financing. It has actually acted

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as a pressure group to help combat the menace of money laundering.

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14. Discuss the recent reforms that have been undertaken in national security architecture of India.

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Given its unique geo-strategic location, India faces complex threats and security challenges in a variety of spheres ranging from conventional military warfare to biological warfare and even parallel military warfare. The recent skirmish in Galwan valley between India and China have amplified voices to ramp up the National security Architecture in India.

Recent Reforms

① Indigenisation of Defence sector

- a) Prohibiting imports of non-essential weapons (NEGATIVE IMPORTS)
- b) Preference to local players for tenders upto ₹ 200 crore.
- c) Indigenisation of Imported spare parts
- d) Separate Project Management unit
- e) Budget Rationalisation

② Office of the Chief of Defence Staff :

- a) Constitution of a New Department of military affairs under Ministry of Defence headed by CDS
- b) Synergise the functioning of Indian Army, Navy and Air Force.

③ Atma Nirbhar Bharat and Cooperatisation of Defence

- a) Increasing FDI in defence from 49 to 74%.
- b) allowing Joint ventures in Research, design.
- c) Cooperatising ORDNANCE FACTORY

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Boards (that are the backbone of indigenous supplies)

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d) Ordnance Factory Board can be listed on stock exchange for more investment.

④ Cyber Warfare ✓

a) National Cyber Crime Reporting Portal under Ministry of Home Affairs.

b) For flagging of unlawful content against sovereignty and integrity of India, disturbing friendly relations with countries.

⑤ Expanding the scope of Warfare.

a) The CSS observed that the nature of warfare has become multidimensional.

b) For eg - After China's push at the borders, India responded with Chinese e-commerce app ban (economic damage), pressured China on South China sea, Taiwan and Hong Kong issue (diplomatic damage). ✓

⑥ Arms and Equipment Import ;

Eg - Rafael Jets (France), S-400 Anti-sat system (Russia), PI-8 Poseidon, Chinook (from USA).

Naresh Chandra Committee ✓ recommended the need to be able to meet future threats and challenges and contribute positively to security in South Asia.

⑦ Draft Defence Acquisition Policy, 2020

with heavy emphasis on defence modernisation on the recommendation of DB ~~that~~ Shekhar Committee.

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⑧ Defence Production and Promotion of Exports Policy, 2020.

- a) Aiming to make India part of global defence value chains by boosting Turnover to 1.75 lakh crore by 2025 and exports worth 35,000 crore
- b) Domestic Procurement share to be increased to 60% by 2025.

⑨ Information sharing agreements with USA (COMCASA), Japan, Maldives, Sri Lanka etc.

with technology progressing exponentially, a single dimensional reform is no longer feasible. India must synergise its efforts to achieve economic and optimum gains in its heavy military expenditure. The coming of 'Theatre Commands' for Army, Navy, Air force will help India have a firm feet on the ground in terms of defence apparatus.

3/10

Need to write about Architecture

Like 4 Deput NSA
Chief of Defence Staff
Policy Group.

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15. The 'Green Term Ahead Market' can invigorate the renewable energy sector in India. Evaluate.

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Green Term Ahead Market is a model to buy and trade Renewable energy exclusively among producers and developers in an OPEN MARKET such as Indian Energy Exchange.

Please DO NOT MARK THIS ANSWER. It was written beyond time. Only for Answer Analysis

Very nice

Features

① Separate from conventional sale and purchase of electricity from conventional sources -

a) DAY AHEAD MARKET → purchase 1 day in advance

b) TERM AHEAD MARKET → 11 days in advance.

② Transaction is bilateral in nature

③ separation of Renewable Energy
→ Solar sources
→ Non solar sources

④ Trading on a daily basis that is daily price discovery.

INVIGORATING RENEWABLE ENERGY SECTOR

On August 2020, Central Electricity Regulatory Commission (CERC) allowed the 'Green Term Ahead Market contracts'. These are the following benefits for

① Allow Energy surplus and Renewable energy deficit countries to meet their Renewable Purchase Obligations (RPOs).

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- of 2% of energy production
- ② Allowing transfer of Renewable energy and its selling to Renewable energy deficit states (eg - Gujarat to UP, Bihar)
 - ③ Energy trading will strictly be followed earlier, conventional energy was sold in place of Renewable energy.
 - ④ will make Renewable Energy more Marketable and boost its demand. Demand will suitably lower its price ~~for~~ as an incentive to consumers.
 - ⑤ enable India to meet the Renewable Energy Goal of 175 GW by 2022. (100 GW of which will exclusively be solar energy)
 - ⑥ This can be converged with other schemes such as UJALA (Ujwal Discom Assurance Yojana) for reducing discom losses, Gram Jyoti Yojana (for Rural electrification - on a subsidy basis) and Integrated power Development scheme.

Adoption of Renewable Energy through mechanisms of Green Term Ahead Market have to be supplemented with fixing structural issues of burdened DISCOMs. Transmission and distribution losses have to be minimised and more investment in clean energy sector would ensure Power for All vision of our country.

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