PRELIMS PYQ's (2011-2023)

LIVE

MARATHON SESSIONS

GEOGRAPHY

SHRADHA MA'AM

Agenda of the Discussion

1) Maximize Score in Geography

2) Conceptual Clarity

3) How to attempt a question

4) Repeated Themes

WORLD CLIMATE

Q) "Each day is more or less the same, the morning is clear and bright with a sea breeze; as the Sun climbs high in the sky, heat mounts up, dark clouds form, then rain comes with thunder and lightning. But rain is soon over." Which of the following regions is described in the above passage? (2015)

a) Savannah

b) Equatorial

c) Monsoon

d) Mediterranean

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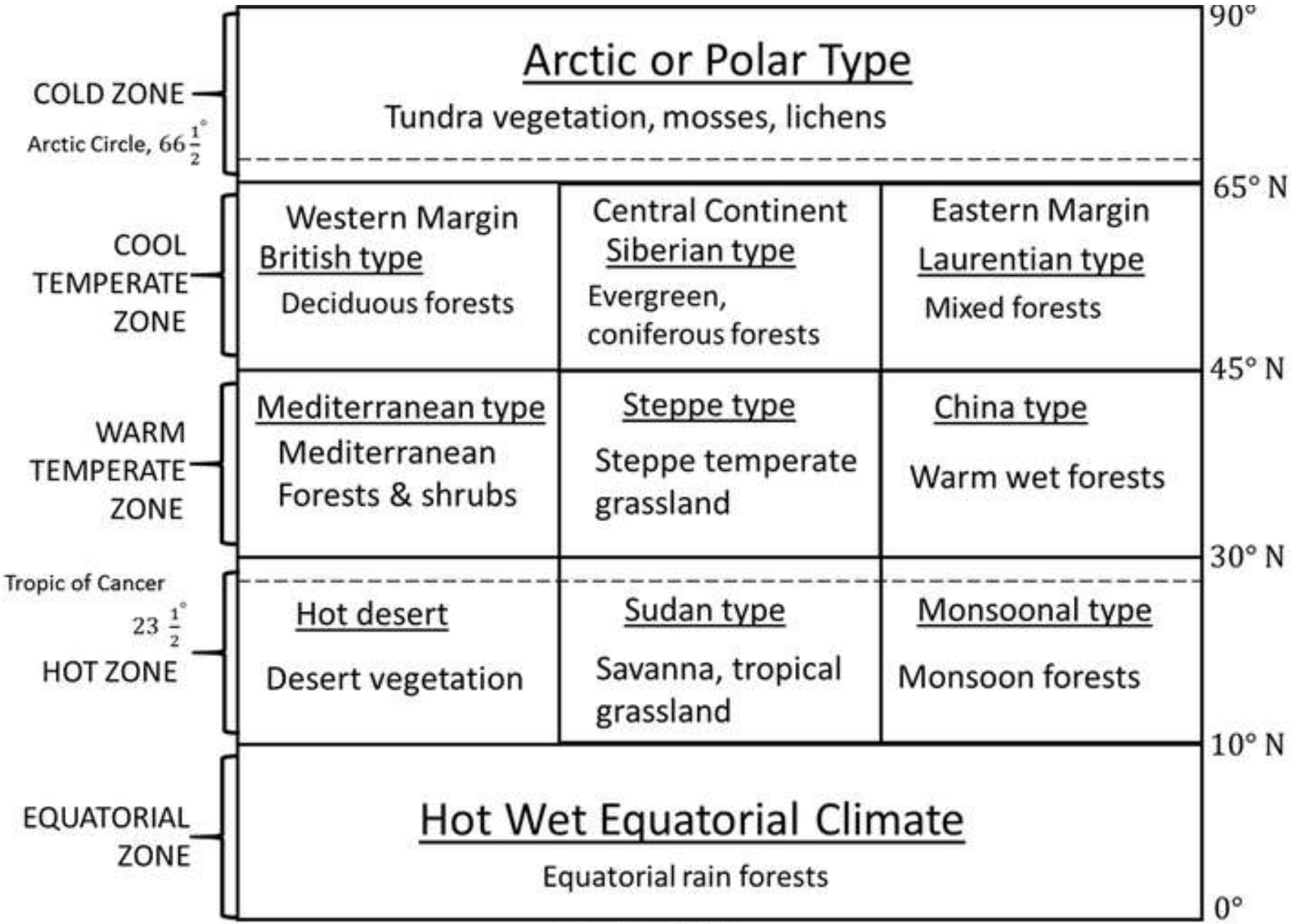


Image of Arctic or Polar Type

- Wet equatorial climate, is **characterized by consistently high temperatures** (around 30 °C [86 °F]), with **plentiful precipitation** (150–1,000 cm [59– 394 inches]) on most afternoons., **heavy cloud cover, and high humidity**, with very little annual temperature variation.

Hot, Wet Equatorial Climate- Convectional Rainfall

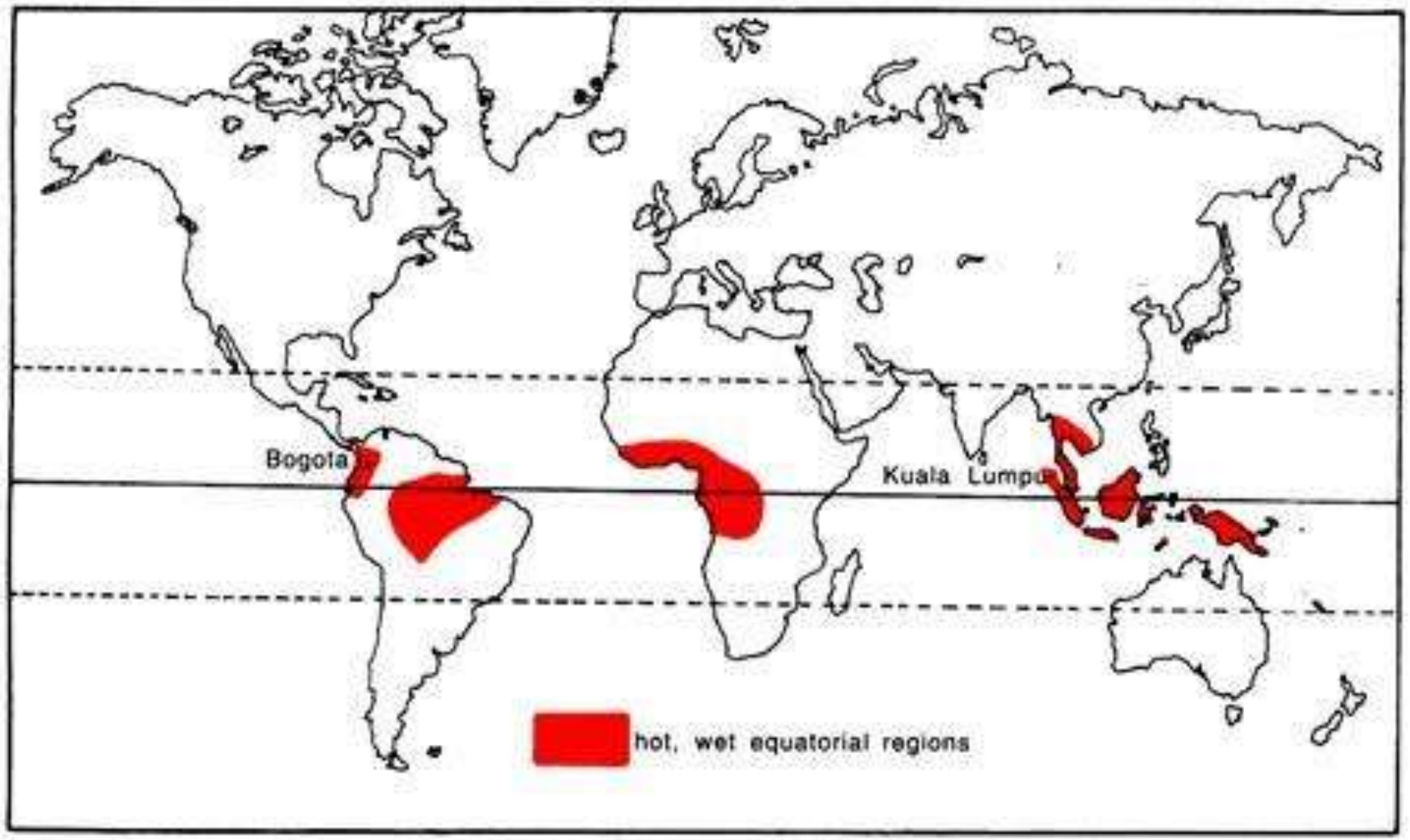
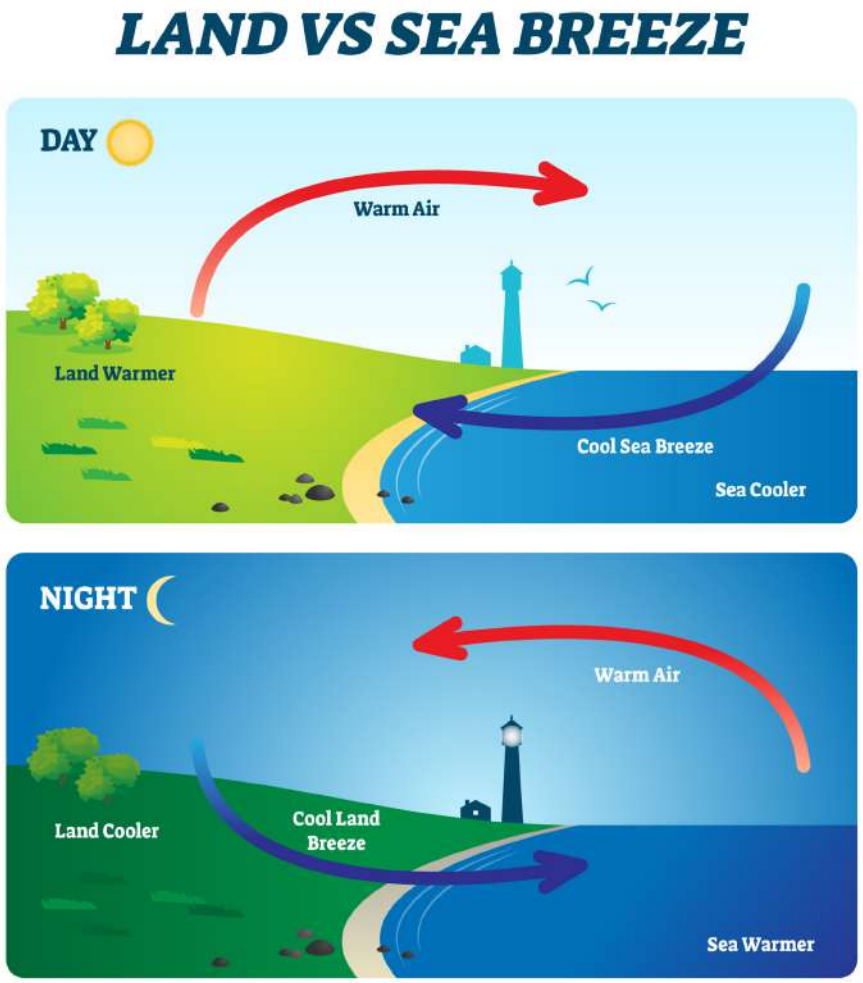


Fig. 121 The hot, wet equatorial regions

Land Breeze and Sea Breeze - Diurnal Range of Temperature



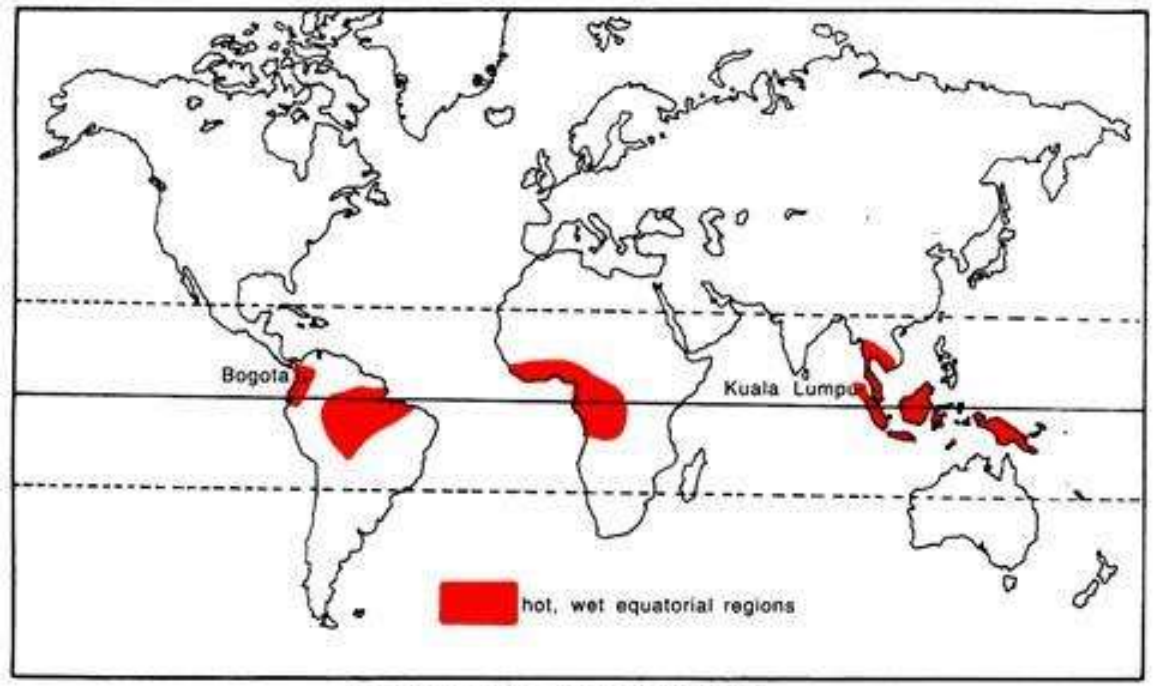


Fig. 121 The hot, wet equatorial regions

Hot, Wet Equatorial Climate- Lowlands + Altitudes

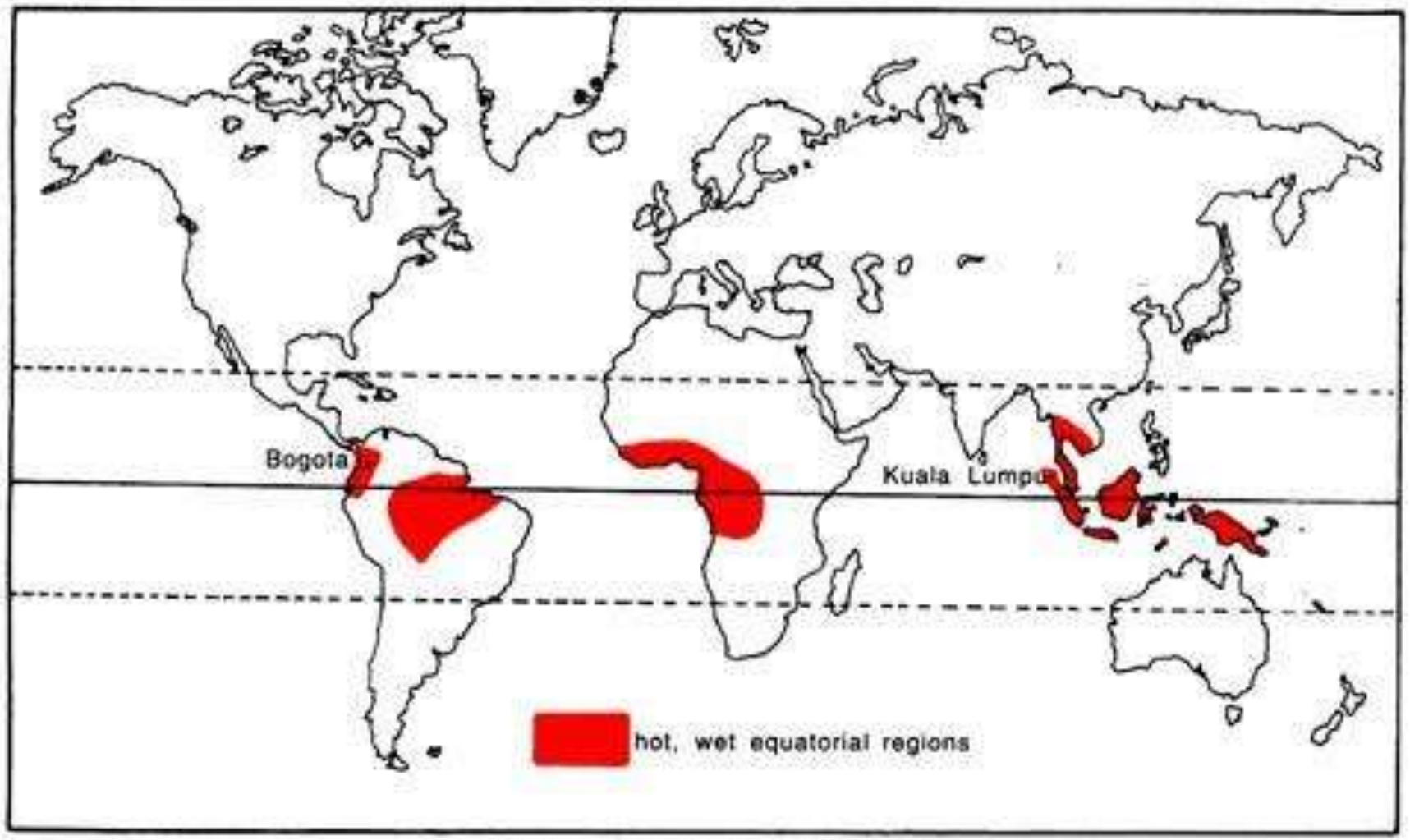


Fig. 121 The hot, wet equatorial regions

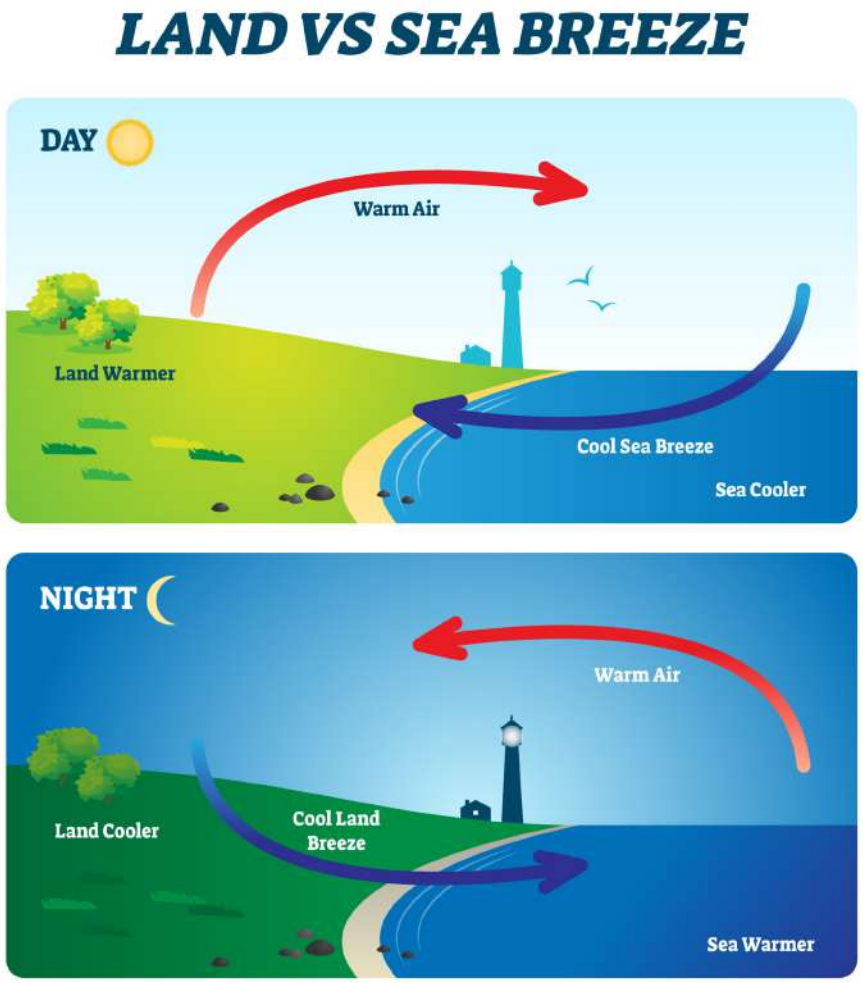
Generally

- Amazon Lowlands
- Congo
- Malaysia

Altitudes

- Cameron Highlands in Malaysia
- Kenyan Highlands in East Africa

Rainfall – Convectional + Orographic



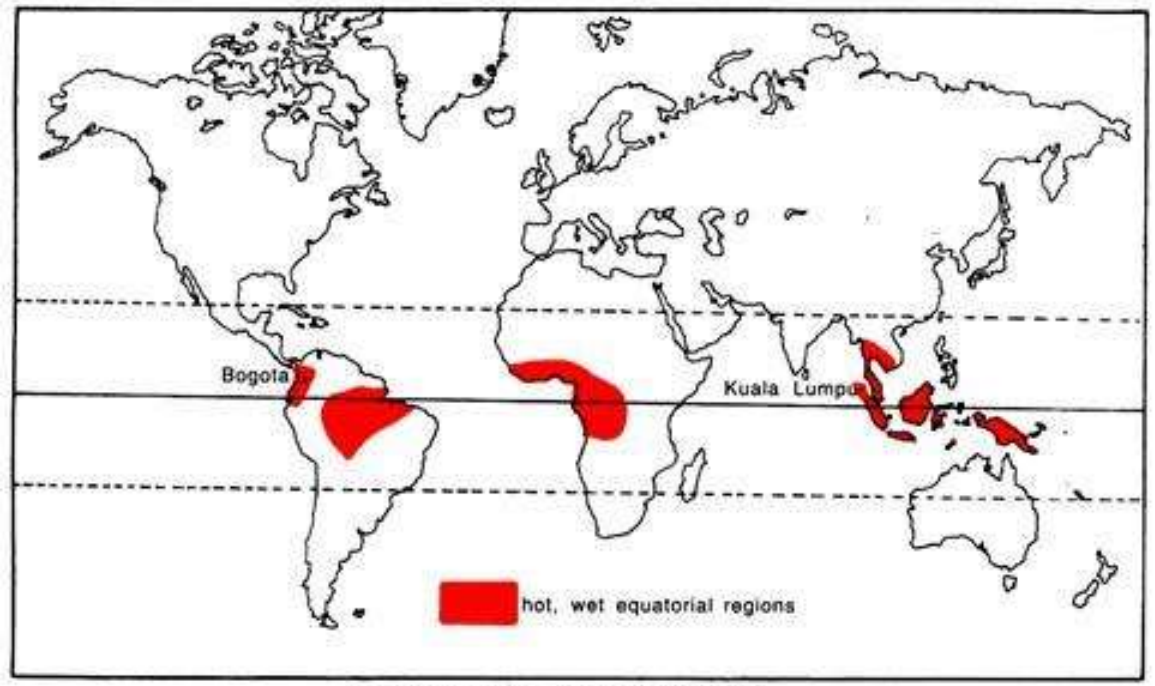
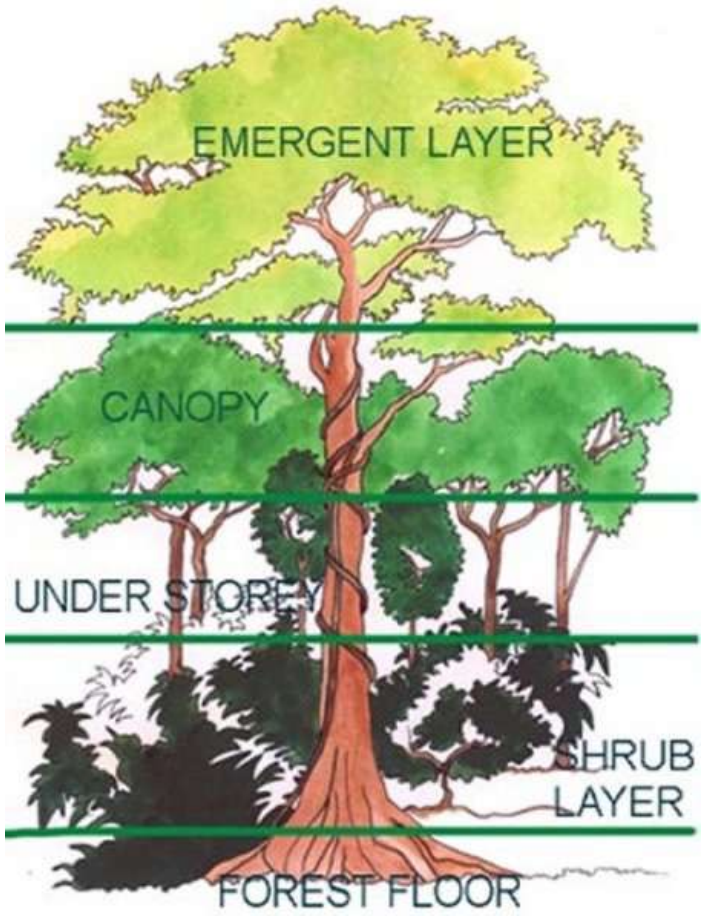


Fig. 121 The hot, wet equatorial regions

Hot, Wet Equatorial Climate - Equatorial Vegetation - Stratification + Epiphytes



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Q)Which of the following is/are unique characteristic/characteristics of Equatorial Forests? (2013)

1) Presence of tall, closely set trees with crowns forming a continuous canopy.
2) Co-existence of a large number of species.
3) Presence of numerous varieties of epiphytes.

Select the correct answer using the codes given below:

a) 1 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

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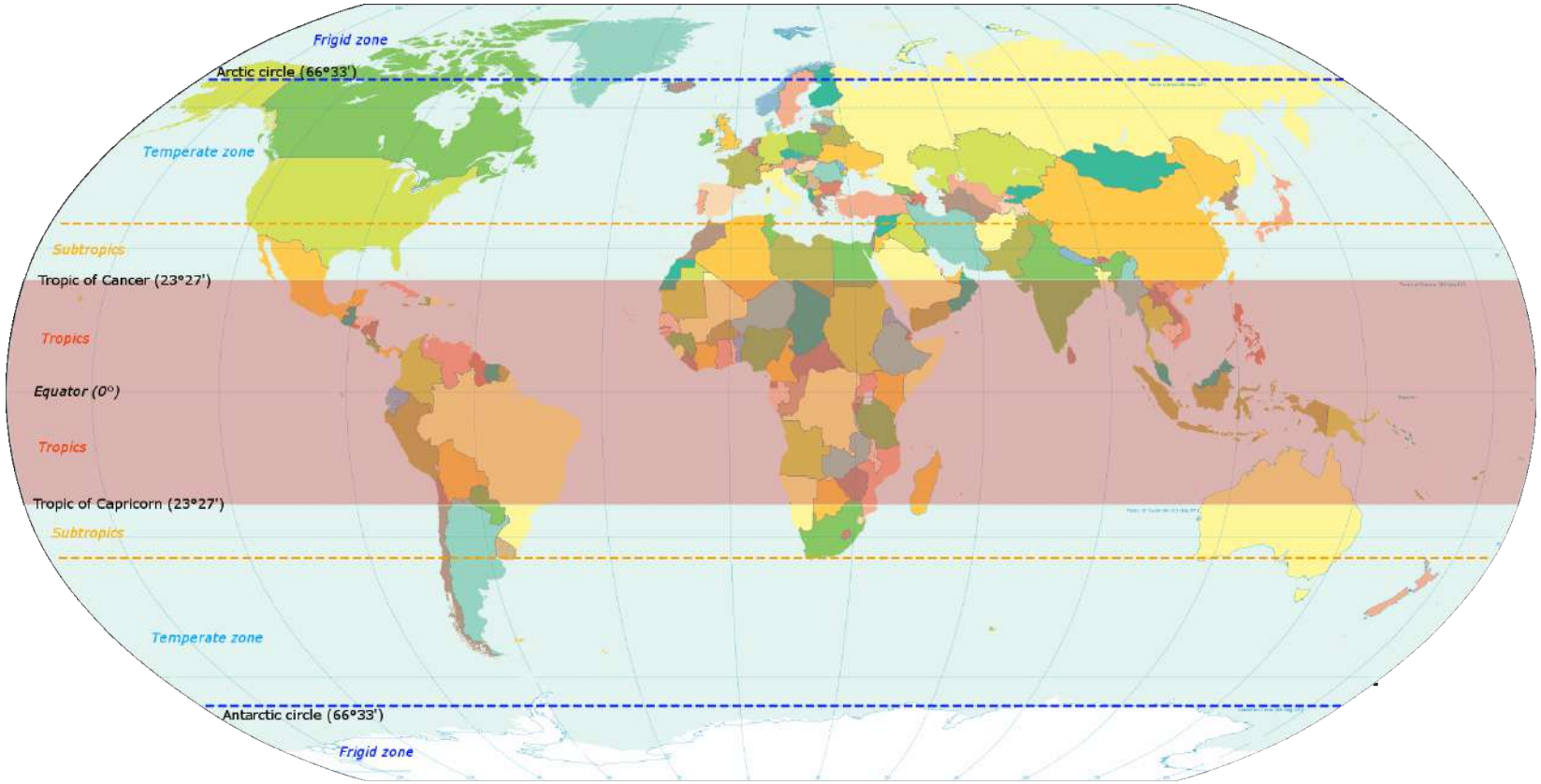
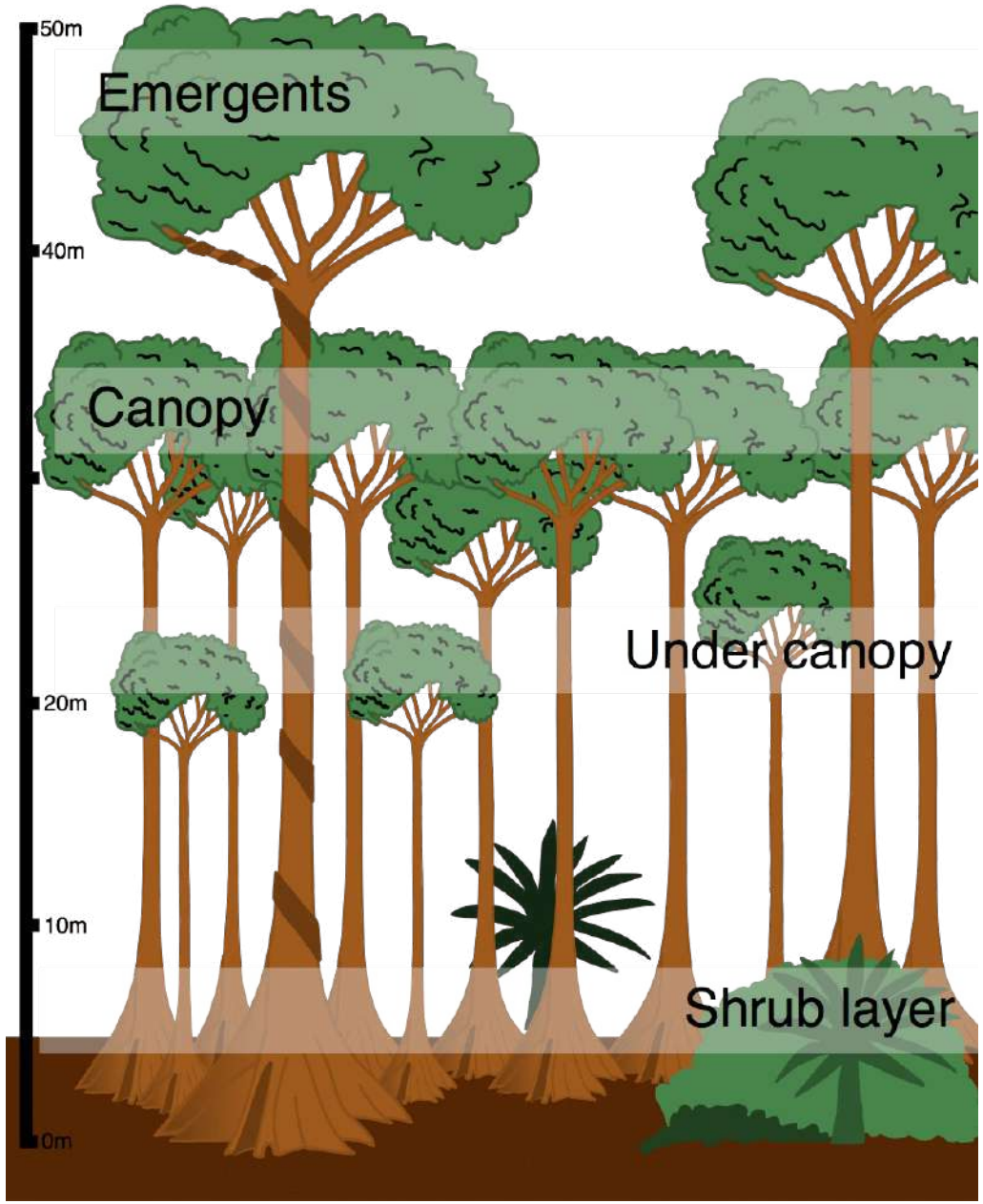
- **Equatorial Forest**
- The rainforest biome is typically found between the Tropics of Cancer and Capricorn.
- The equatorial tropical rainforest is found within 5 degrees north and south of the equator .
- The **equatorial rainforest supports the greatest biodiversity (number and types of living organisms in an area) on Earth**. This is the **result of abundant moisture and sunlight.**
- **High temperature and abundant rainfall support a luxuriant tropical rain forest**.
- From the air, the **tropical rain forest appears like a thick canopy of foliage**, broken only where it is crossed by large rivers or cleared for cultivation.
- All plants struggle upwards (**most ephiphytes**) for sunlight resulting in a peculiar layer arrangement.


Frigid zone
Arctic circle (66°33')
Temperate zone
Subtropics
Tropic of Cancer (23°27')
Tropics
Equator (0°)
Tropics
Tropic of Capricorn (23°27')
Subtropics
Temperate zone
Antarctic circle (66°33')
Frigid zone


50m
Emergents
40m
Canopy
Under canopy
20m
10m
Shrub layer
0m

Q. Consider the following statements: (2023)

Statement-I:

The soil in tropical rainforests is rich in nutrients.

Statement-II:

The high temperature and moisture of tropical rain forests cause dead organic matter in the soil to decompose quickly.

Which one of the following is correct in respect of the above statements?

a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

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- **Note** - high temperature and moisture of tropical rain forests cause dead organic matter in the soil to decompose quickly – **recycling nutrients back to the ecosystem**.

- Tropical rainforest soils **are often deep but not particularly fertile.**
- This is partly due to the fact that **huge amounts of some mineral nutrients are tied up inside the vegetation rather than being free in the soil at any given time – soil is itself poor in nutrients because they do not stay in soil long enough to accumulate .**

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Q.) "Leaf litter decomposes faster than in any other biome and as a result the soil surface is often almost bare. Apart from trees, the vegetation is largely composed of plant forms that reach up into the canopy vicariously, by climbing the trees or growing as epiphytes, rooted on the upper branches of trees." This is the most likely description of (2021)

a) coniferous forest

b) dry deciduous forest

c) mangrove forest

d) tropical rain forest

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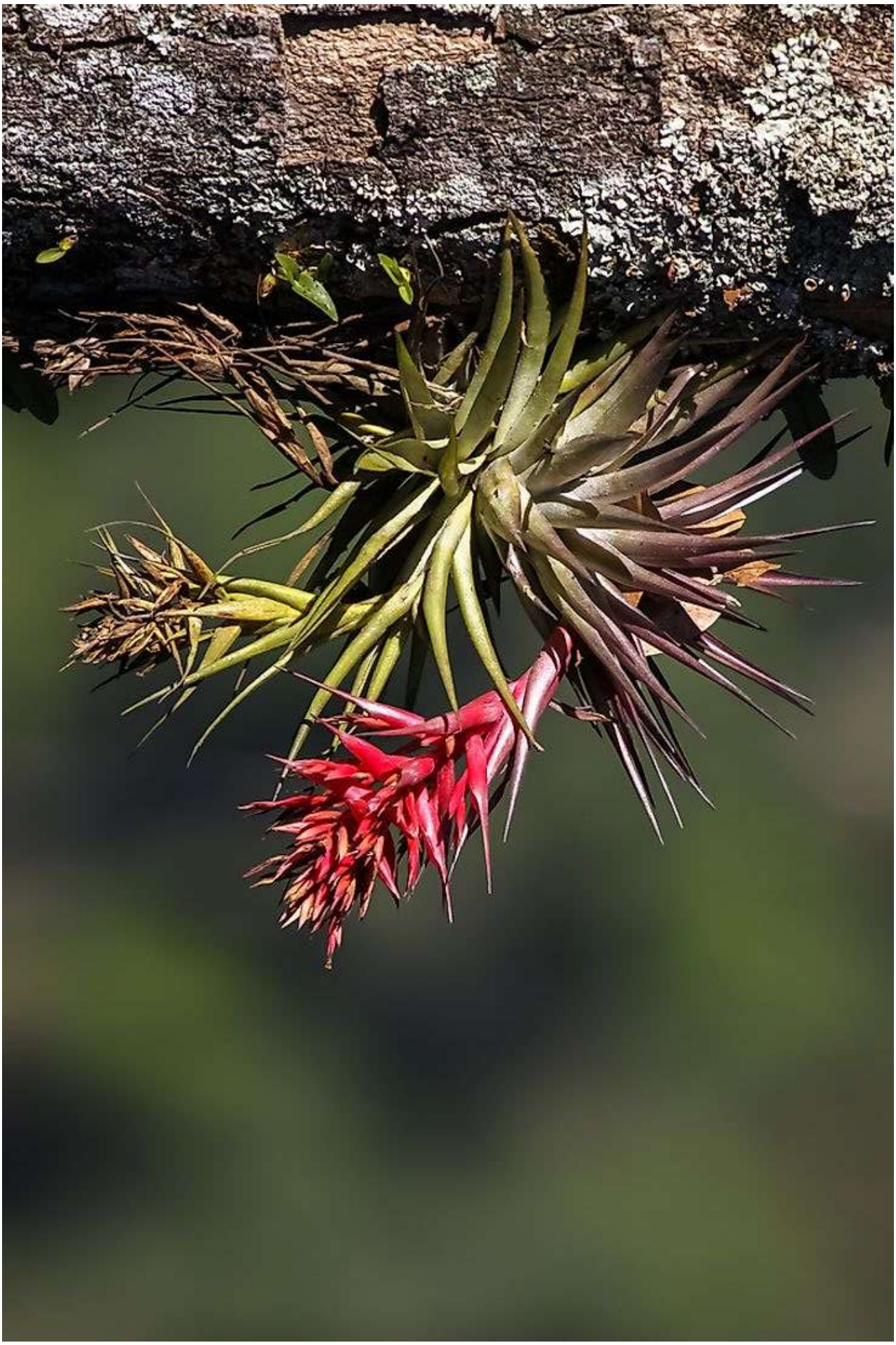
- The hot and humid conditions make these rainforests an ideal environment for bacteria and other microorganisms , they quickly decompose matter on the forest floor. In other biomes, such as the deciduous forest, the decomposition of leaf litter adds nutrients to the soil. **But in the tropical rainforest, plants grow so fast that they rapidly consume the nutrients from the decomposed leaf litter**. As a result, most of the nutrients are contained in the trees and other plants rather than in the soil.
- **Epiphyte**s - these are plants which live on the branches of trees high up in the canopy. They get their nutrients from the air and water, not from the soil.



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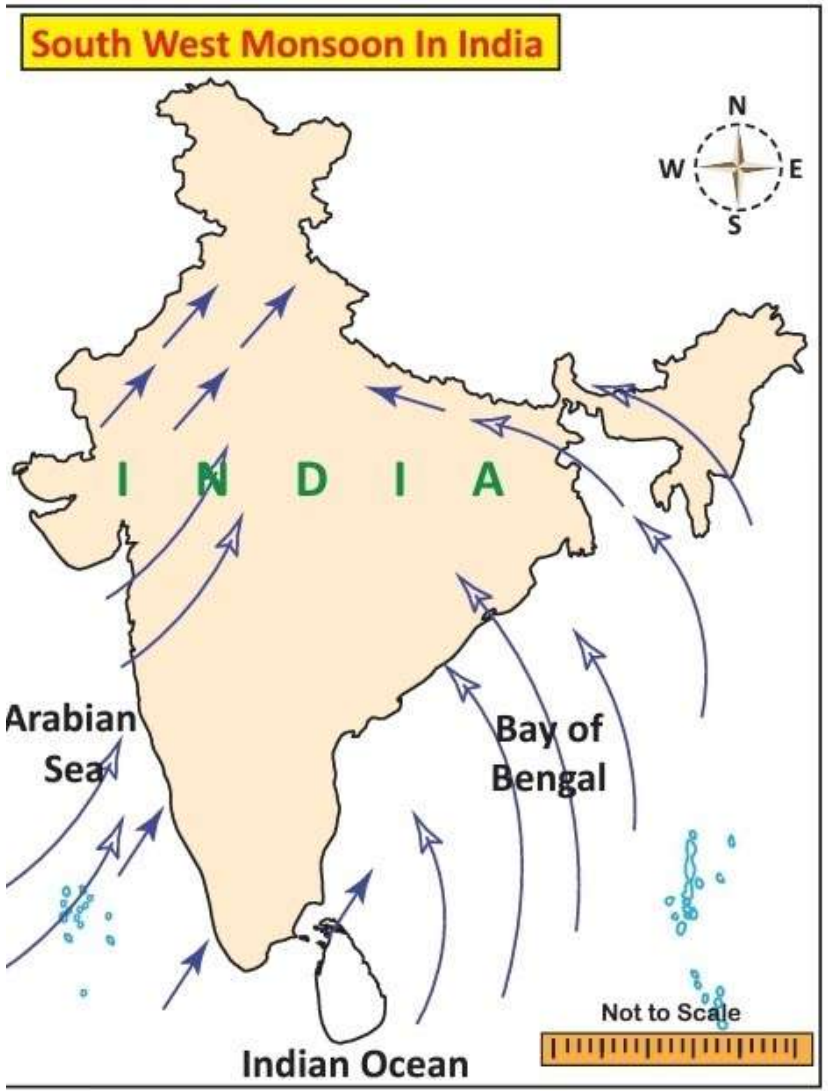
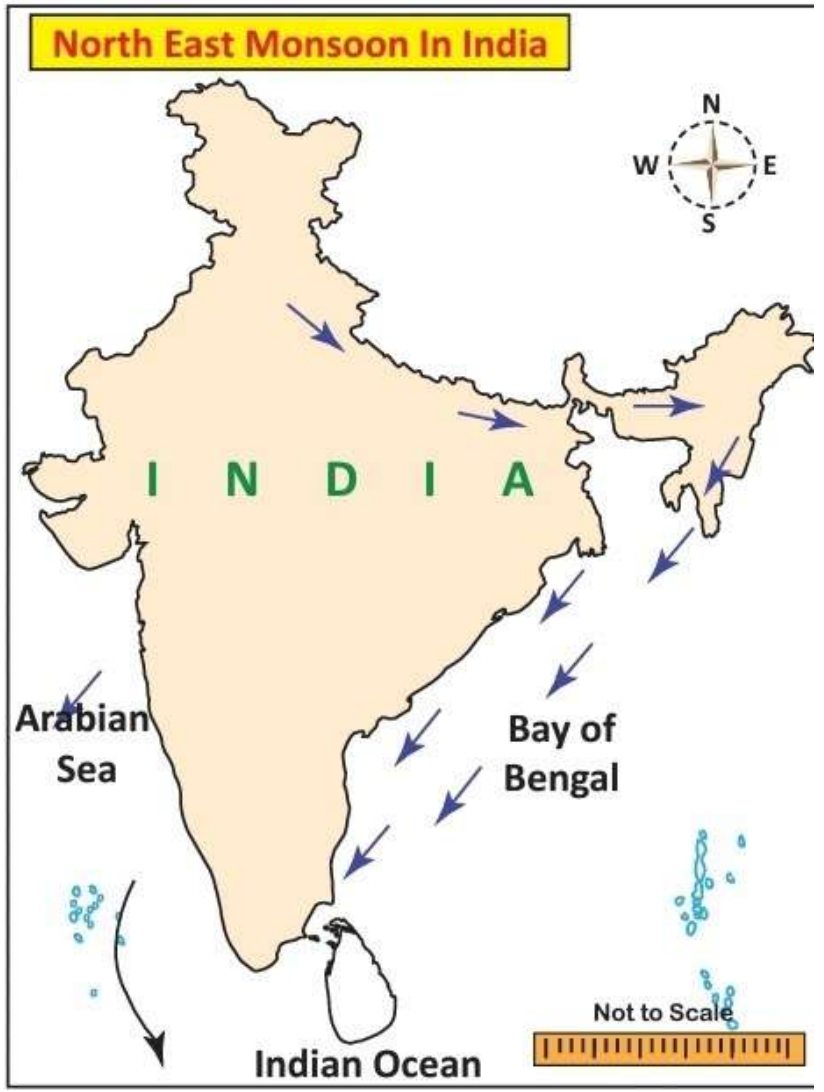
How to Guess


South West Monsoon In India
N
W
E
S
I N D I A
Arabian Sea
Bay of Bengal
Indian Ocean
Not to Scale


North East Monsoon In India
N
W
E
S
I N D I A
Arabian Sea
Bay of Bengal
Indian Ocean
Not to Scale

- Seasonal reversal of wind direction takes place over the Indian subcontinent because in **winter there is a high-pressure area in the north of the Himalayas** & there is a low-pressure area over the ocean to the south. **So cold and dry winds blow from the Himalayan region towards the ocean.**

- In **summer due to high temperatures, a low-pressure area develops over interior** Asia as well as over northwestern India. This causes a **complete reversal of the direction of the wind during summer and the rise of the Southwest monsoon.**

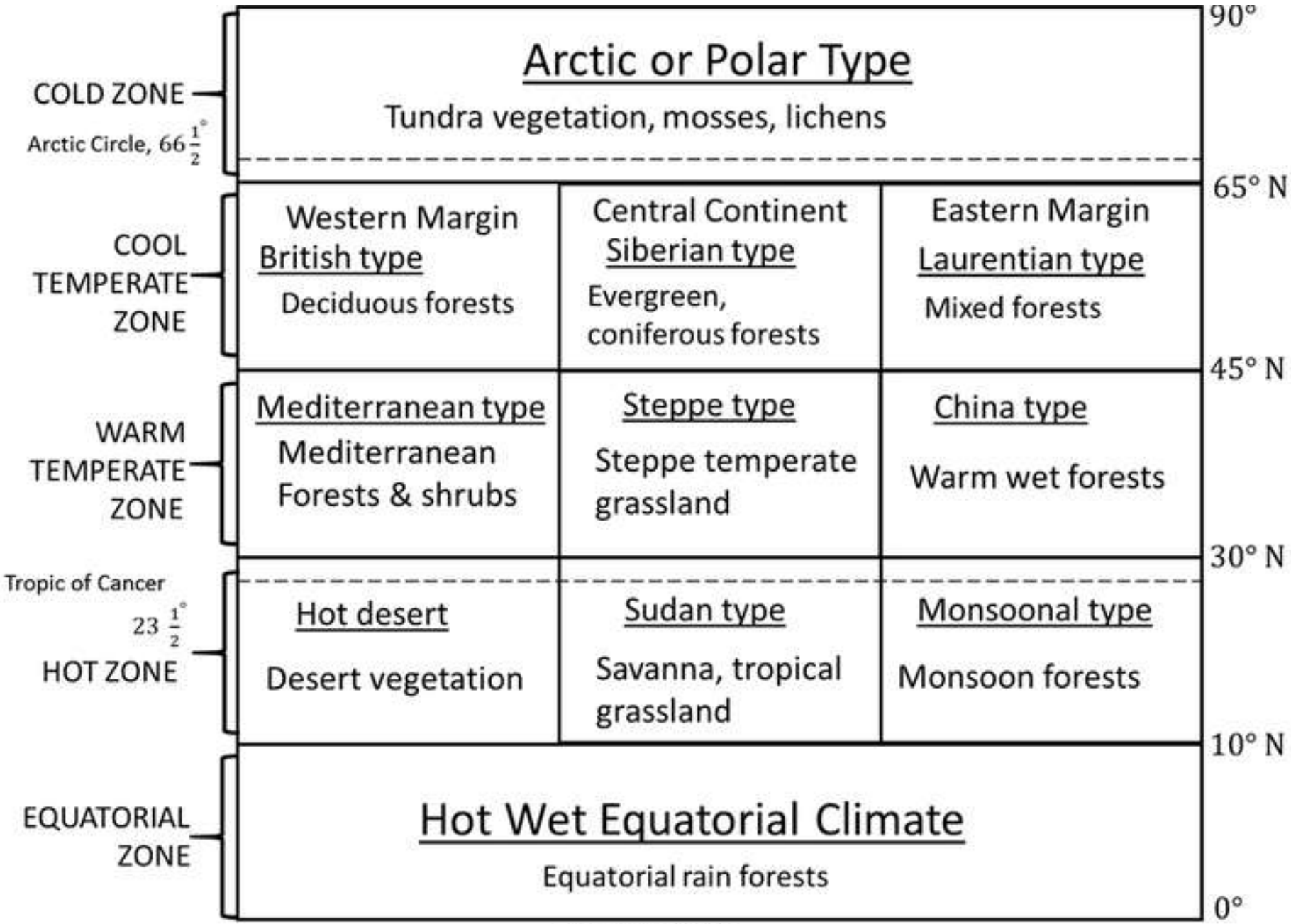
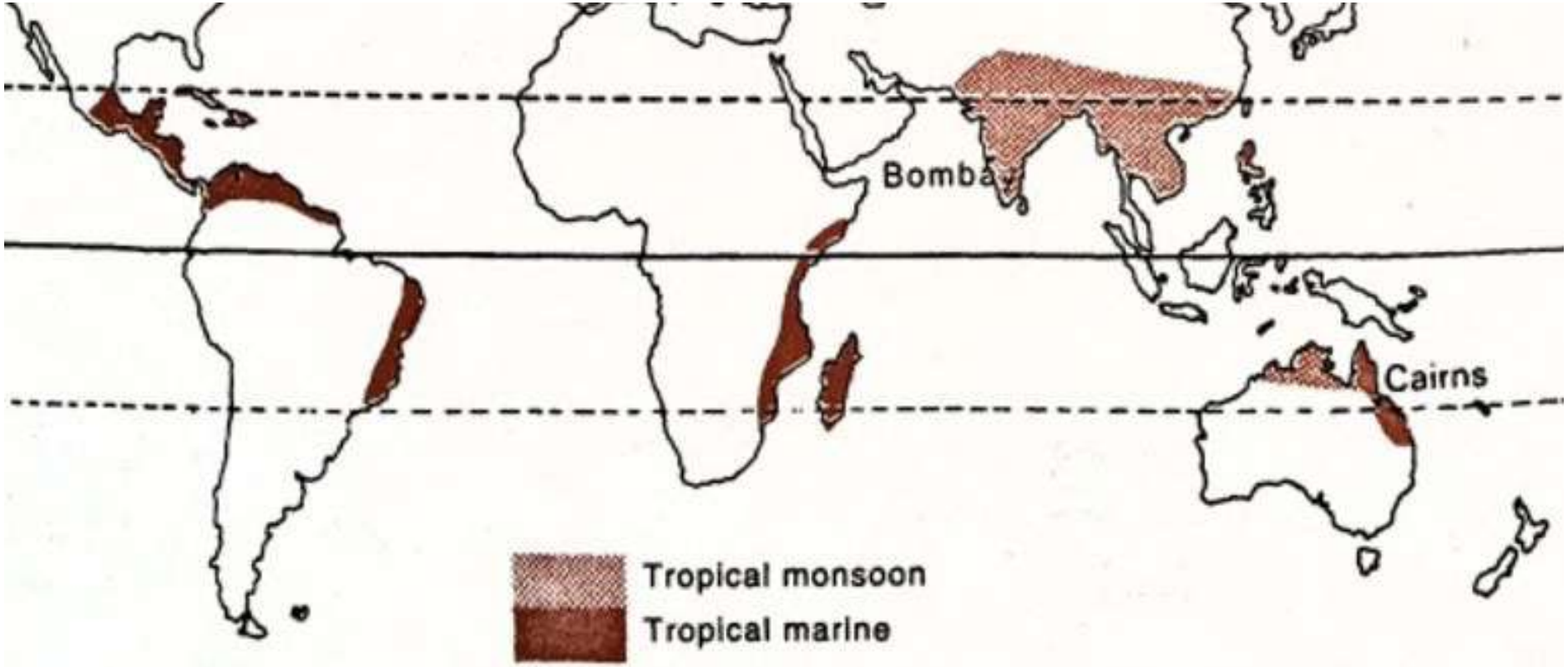
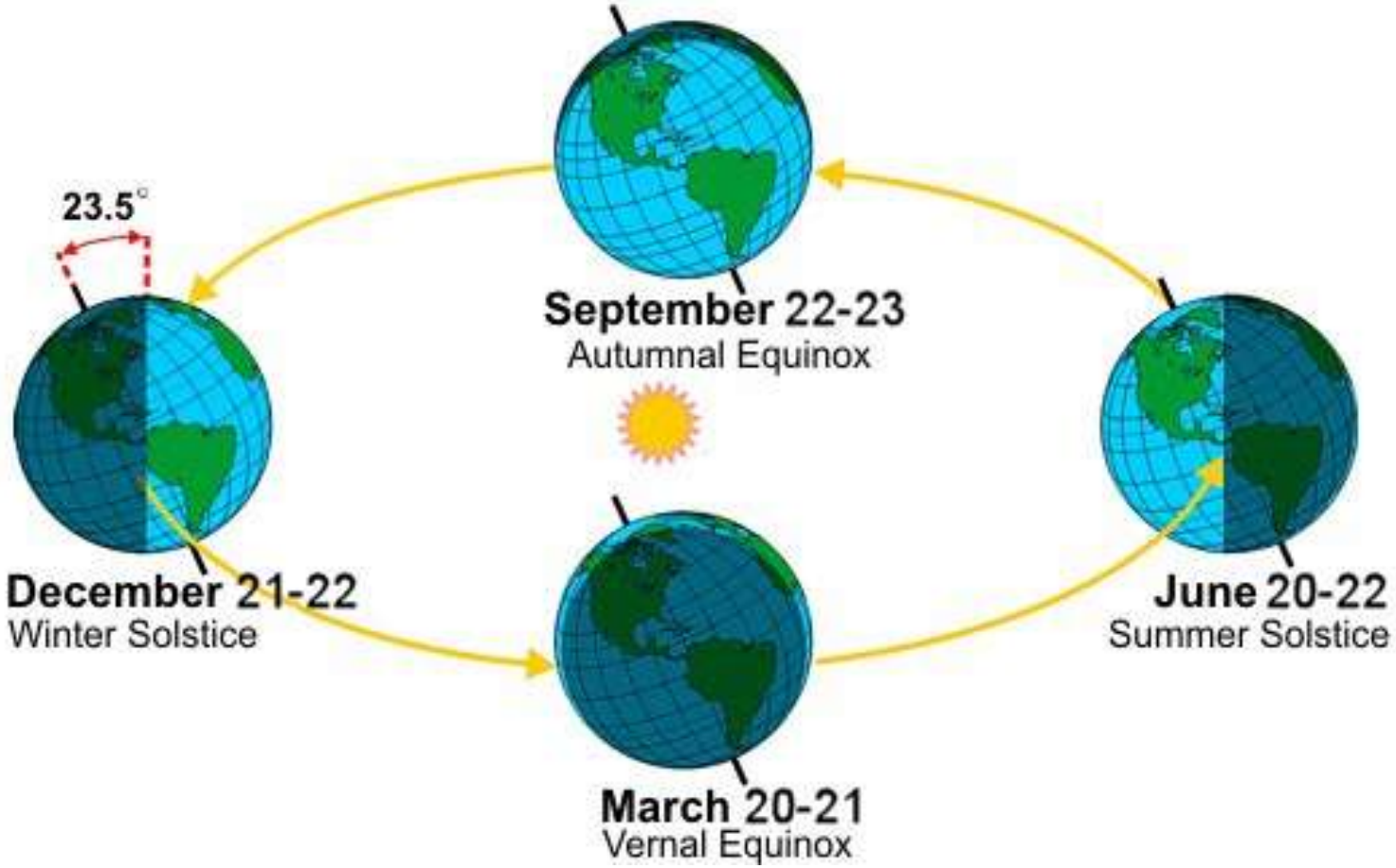


Image of Arctic or Polar Type

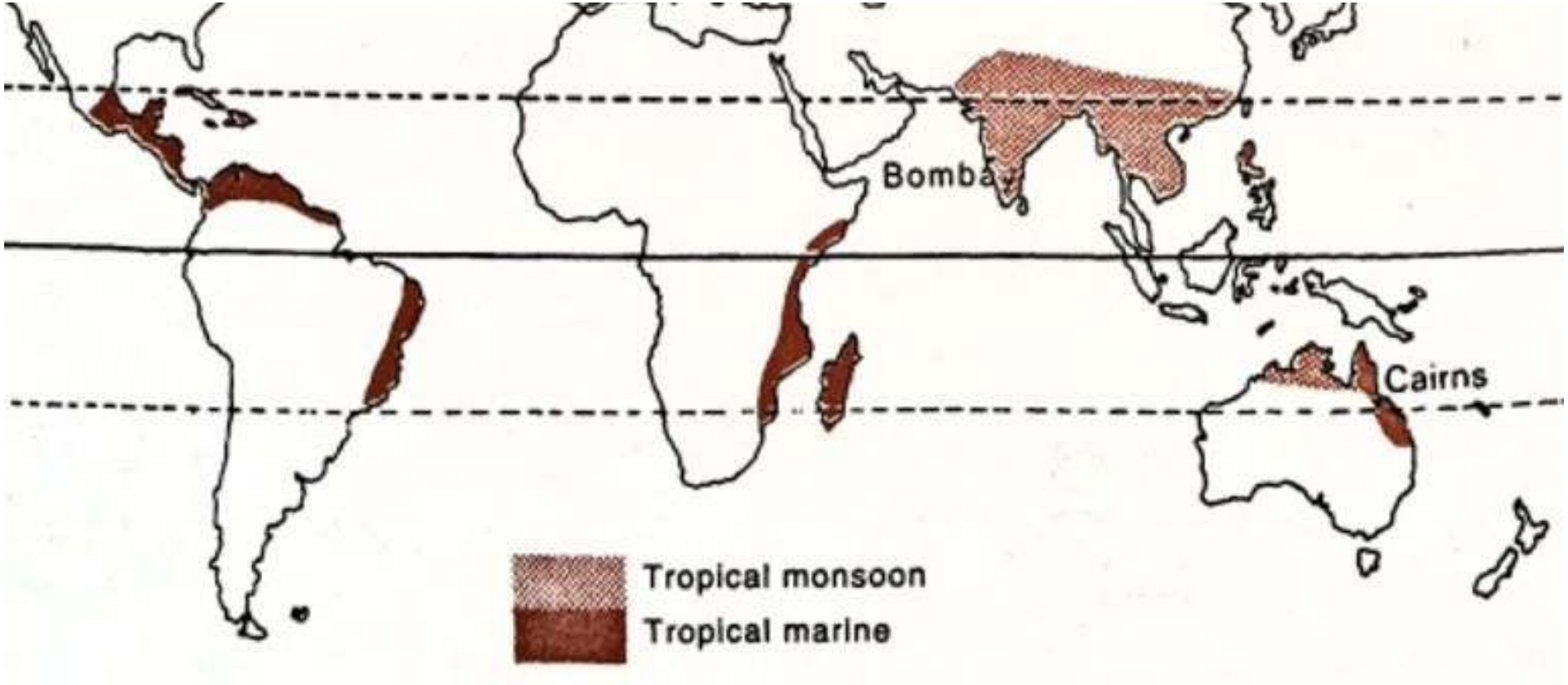
The Tropical Monsoon and Marine Climate



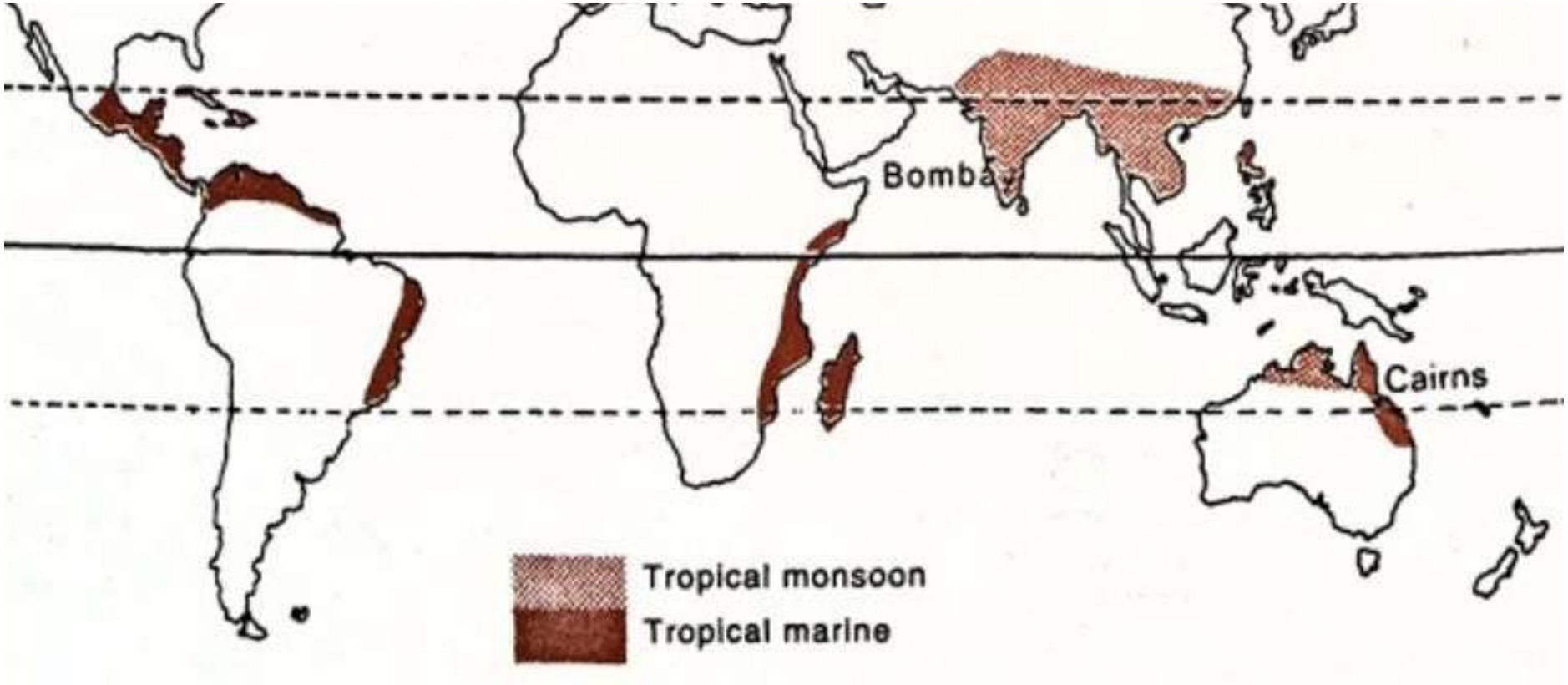
Sun Overhead Tropic of Cancer



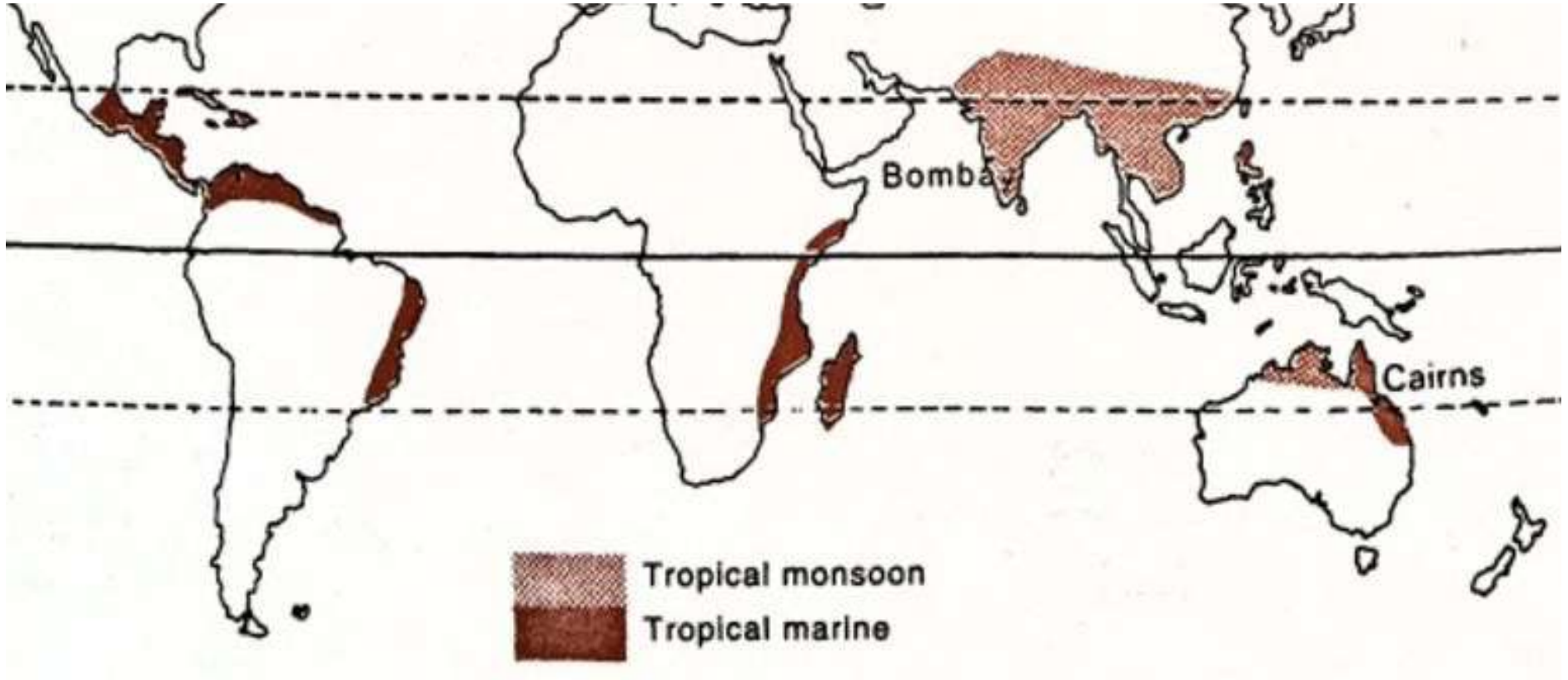
What happens in Summer and Winter?



Summer Conditions – South East and South West monsoon



Winter Conditions – North East Monsoon and North West Monsoon



Q) The seasonal reversal of winds is the typical characteristic of

a) Equatorial climate

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Q) Which one of the following is the characteristic climate of the Tropical Savannah Region? (2012)

a) Rainfall throughout the year

b) Rainfall in winter only

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Grasslands

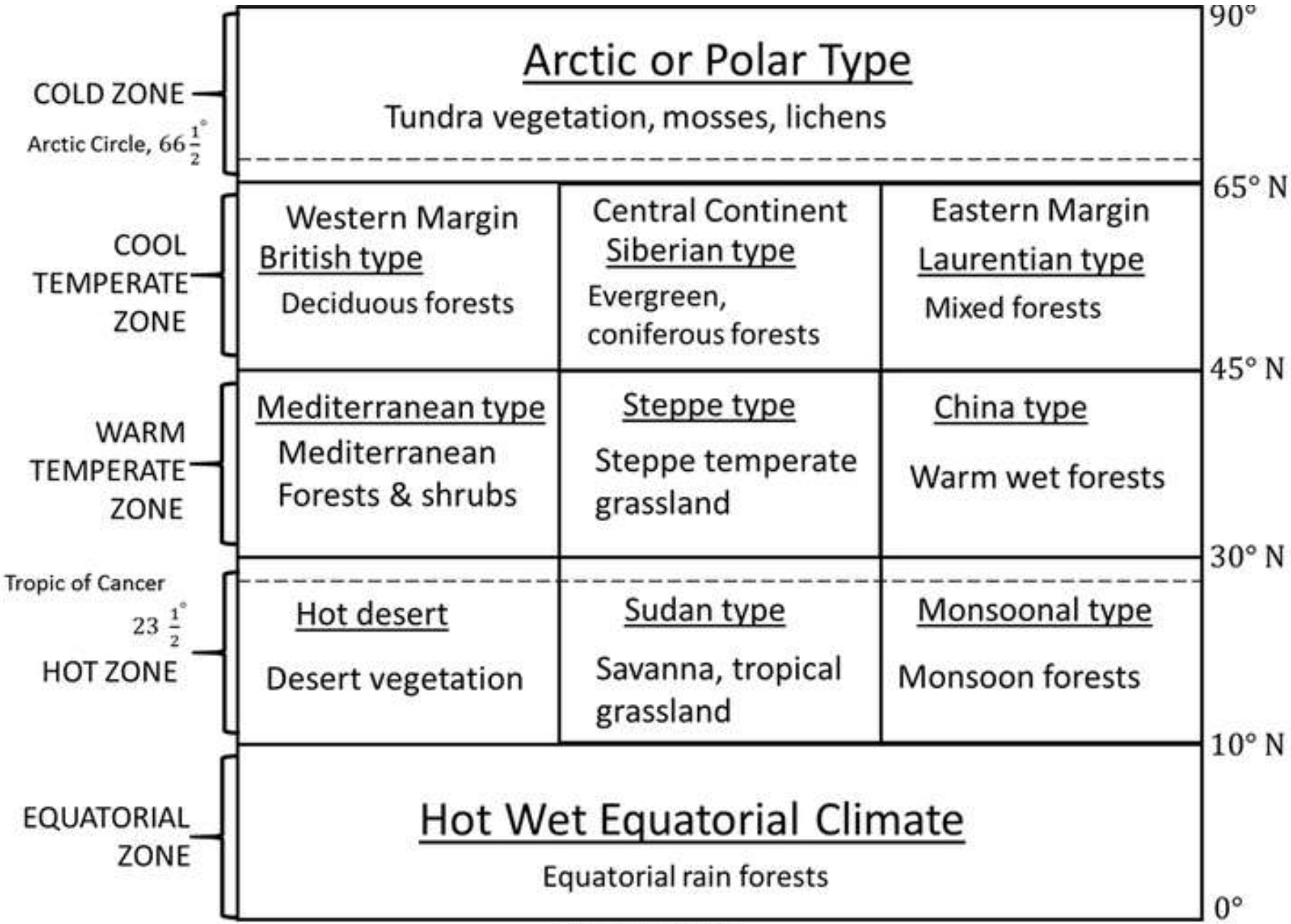
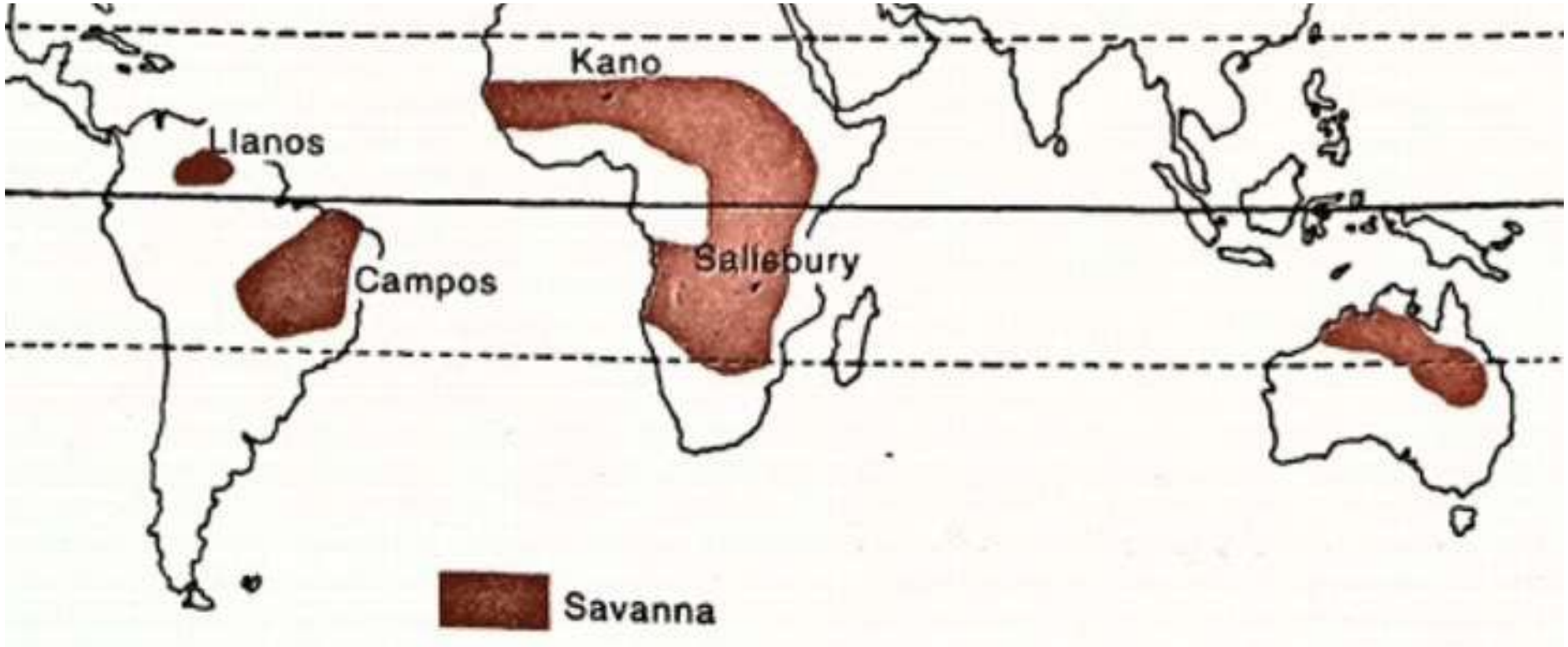
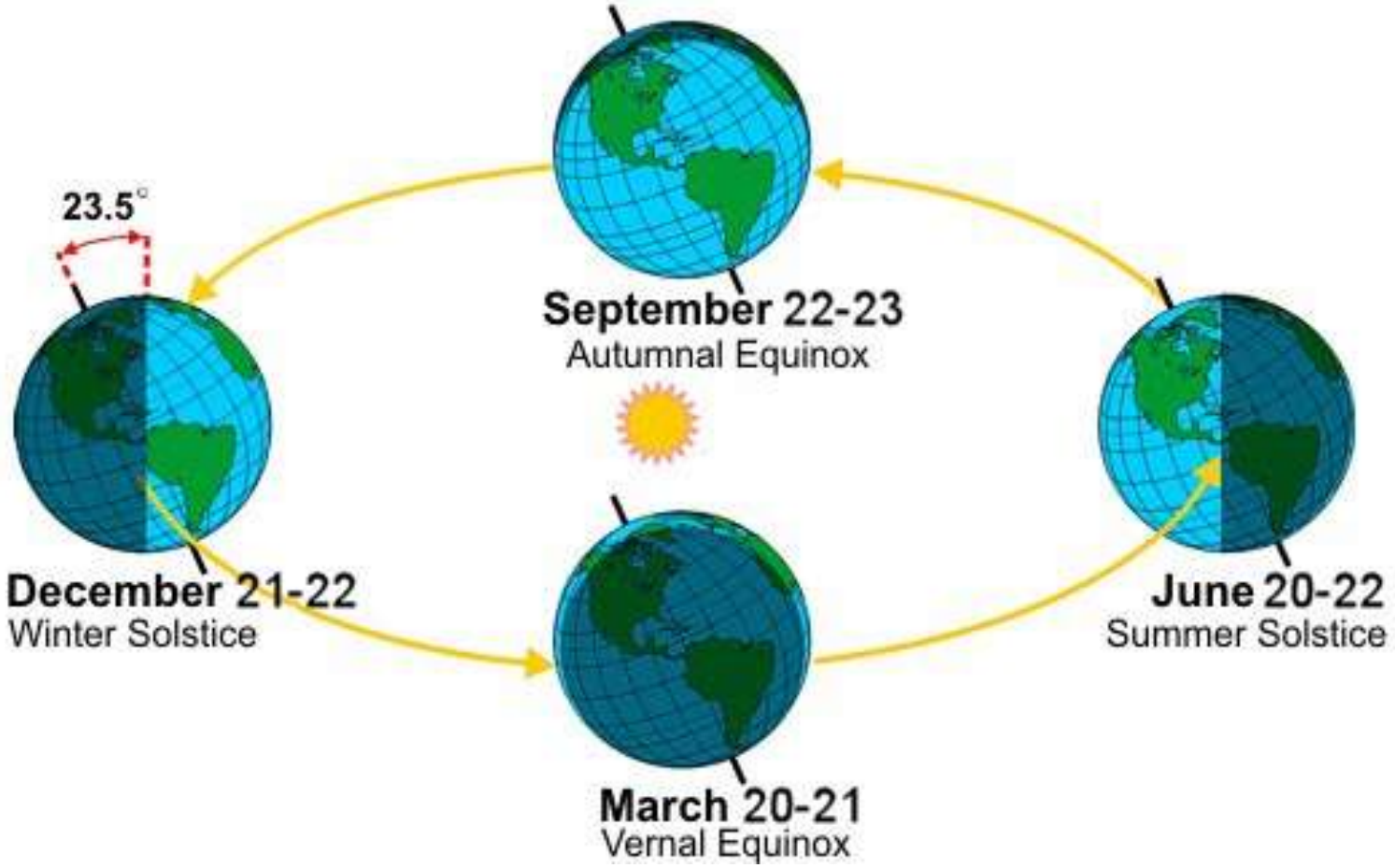


Image of Arctic or Polar Type

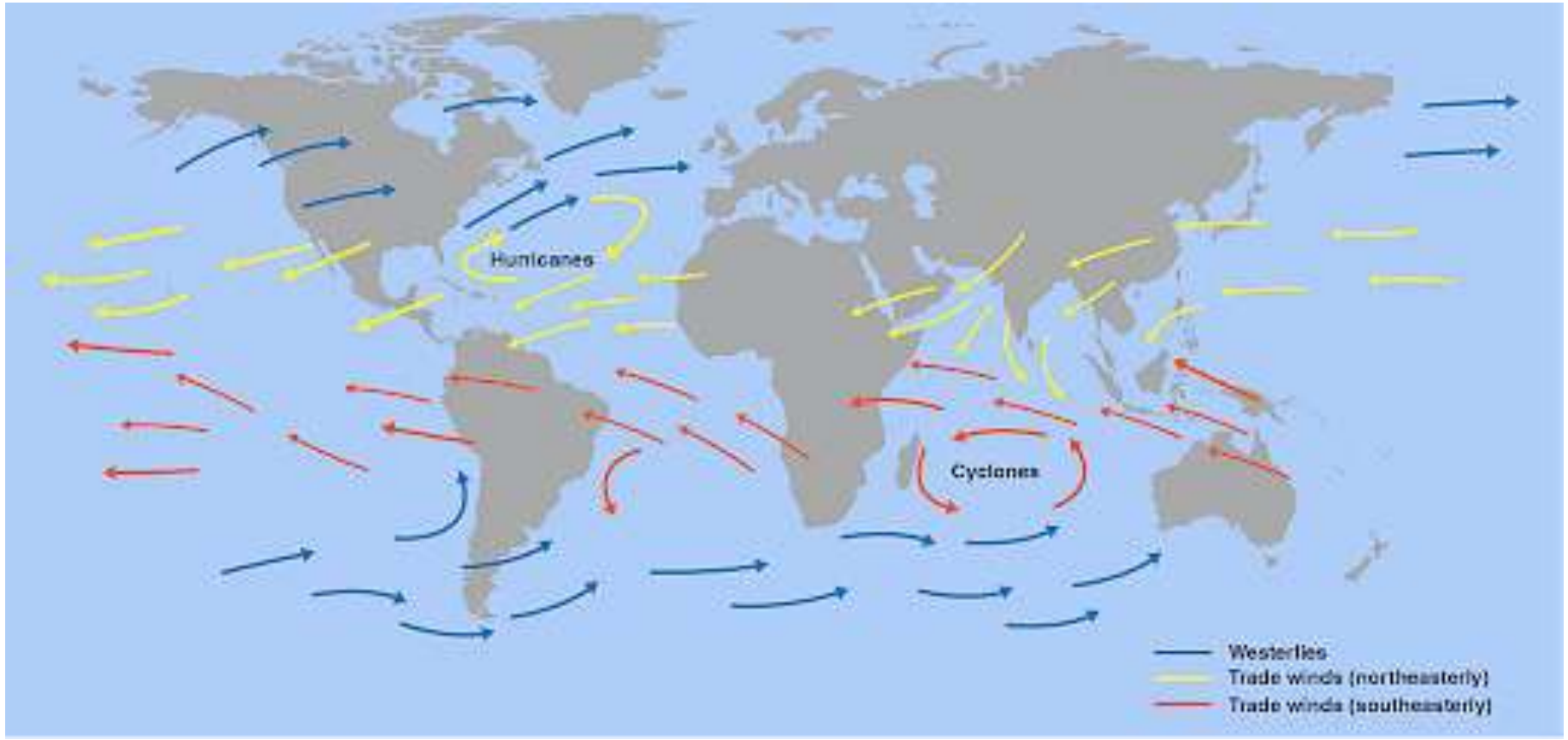
It lies in both the hemispheres



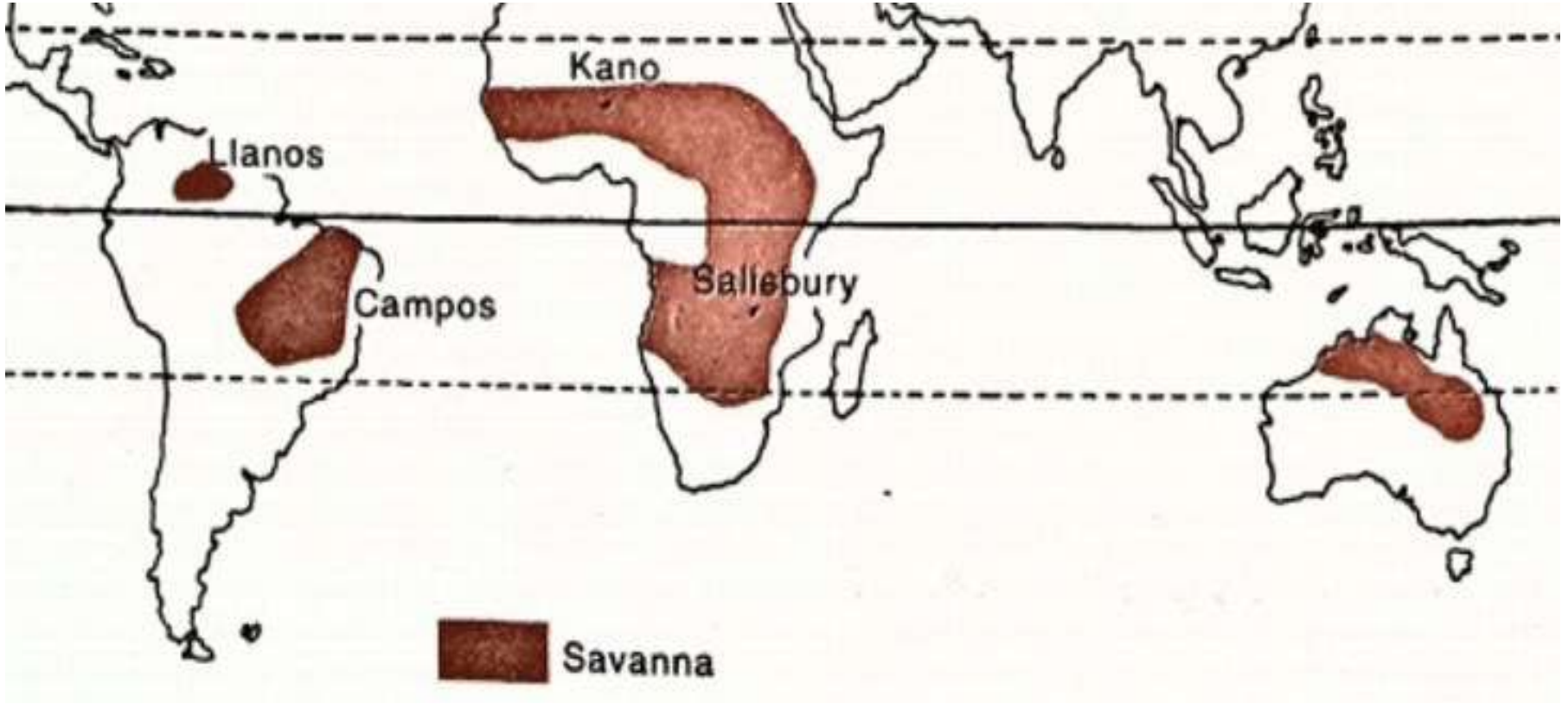
Alternate Hot and Cool Season- Sun Overhead between Tropic of Cancer and Capricorn



Alternate - Hot + Rainy [Trade Winds Strong during Summer] and Cool + Dry Season



Natural Vegetation – Tall Grass and Short Tress + Special Case – Thorny Scrub (Margins)



Natural Vegetation – Tall Grass and Short Tress

- Elephant Grass
- Deciduous Tress - Acaciac
- Broad Trunks (Water Storing Devices)
- Umbrella Shaped Tress
- Palms Trees – Wettest Areas and Along Rivers

Tropical Savannah Region :

- Savannas grow in tropical **regions 8° to 20° from the Equator.**
- Conditions are **warm to hot in all seasons.**

- Mean **annual precipitation is generally 80 to 150 cm**.

- **Alternating Dry and Wet Season -**
- Mean monthly temperatures are about **10 to 20 °C in the dry season** and **20 to 30 °C in the wet season**

- The **dry season is typically longer than the wet season.**

Q) Which one of the following is the characteristic climate of the Tropical Savannah Region? (2012)

a) Rainfall throughout the year

b) Rainfall in winter only

c) An extremely short dry season

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Q) "Climate is extreme, rainfall is scanty and the people used to be nomadic herders." The above statement best describes which of the following regions? (2013)

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b) Central Asian Steppe

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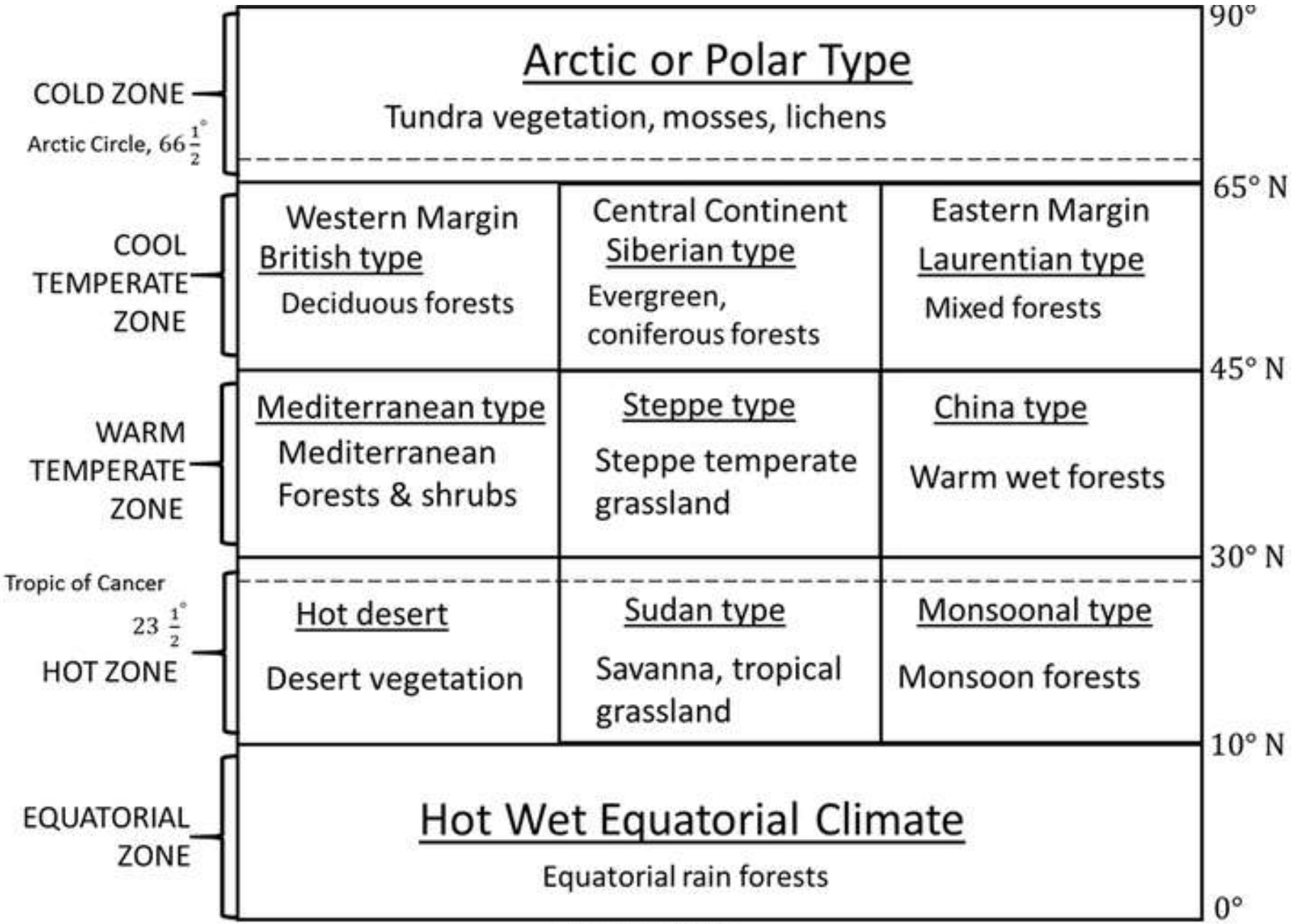

Image of Arctic or Polar Type

- Steppe's climate is continental with extremes of temp.
- Rainfall is expected to be light.
- The mid-latitude (Central Asian) grassland were once home to pastoral **nomads** like **Kirgiz, Kazakh and Kalmuks, Mongols.**

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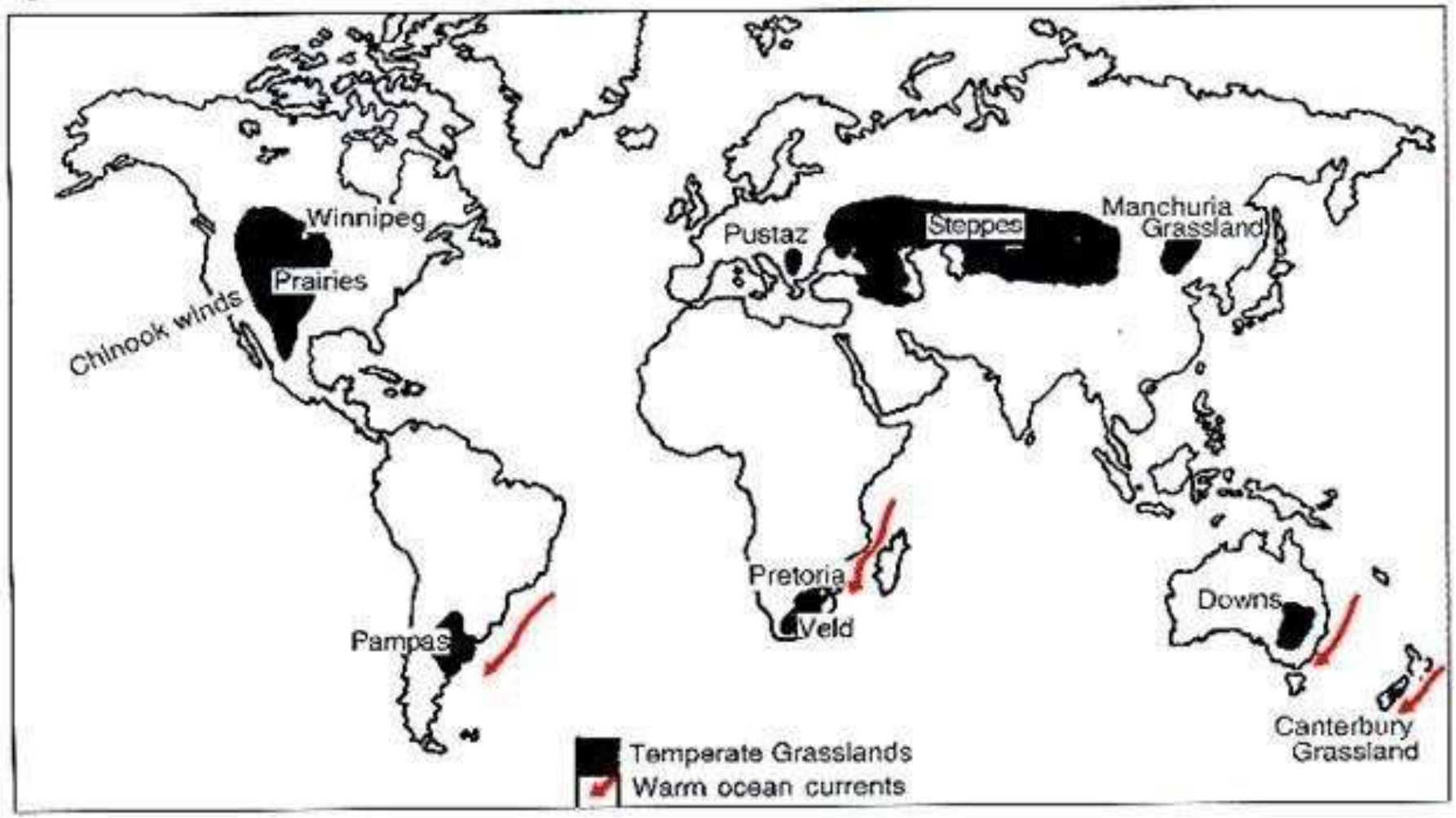
Value Addition

Fig. 137 The Temperate Grasslands



Q. What could be the main reason/reasons of the formation of African and Eurasian desert belt? (2011)

1. It is located in the sub-tropical high pressure cells.
2. It is under the influence of warm ocean currents.

Which of the statements given above is/are correct in this context?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

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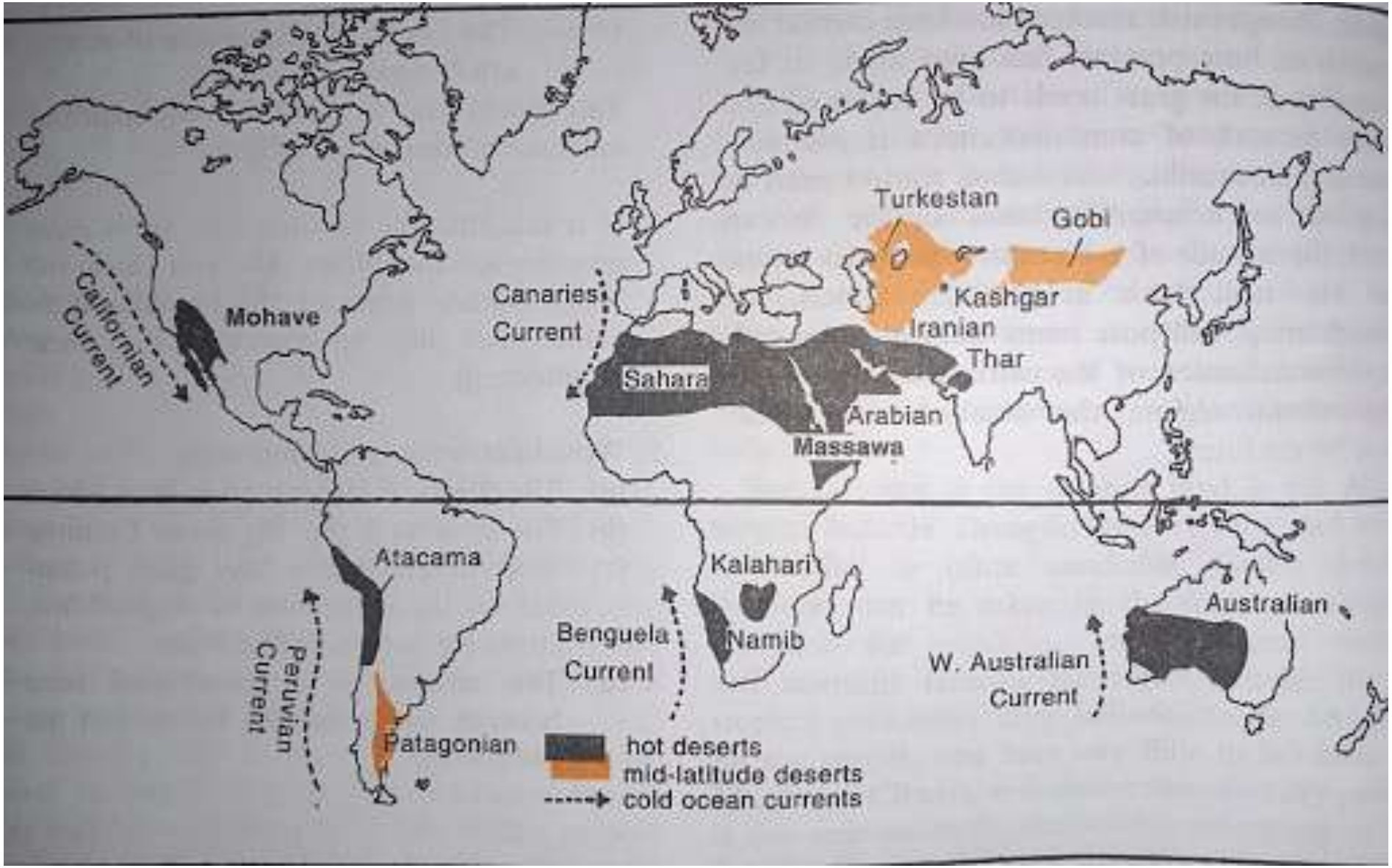
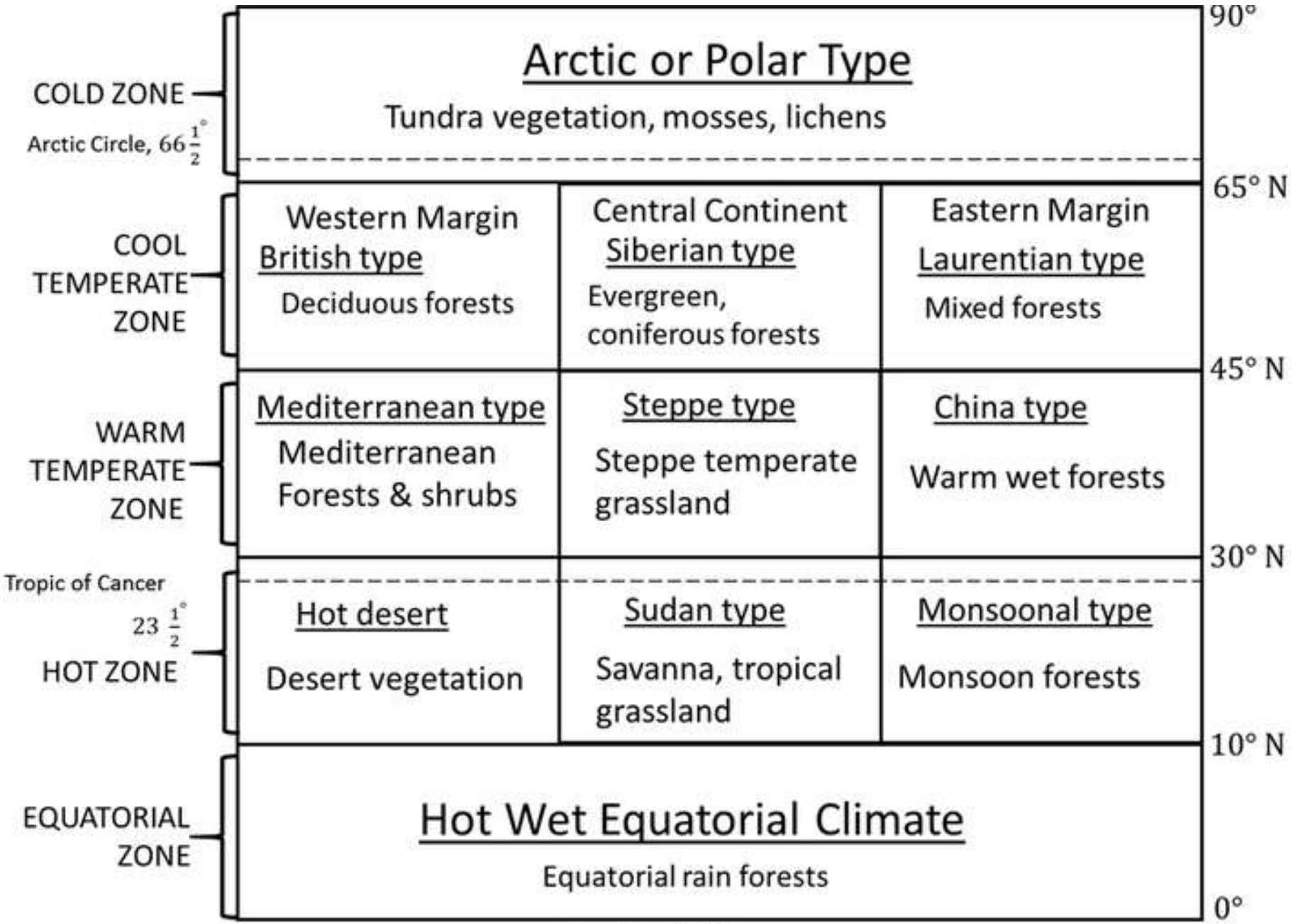
- The main reason for the formation of African and Eurasian desert belt is that **it is located in the subtropical high pressure cells.**

- It is under the **influence of cold currents, which leads to higher aridity.**

THE HOT DESERT AND MID – LATITUDE DESERT CLIMATE

The Hot Desert and Mid – Latitude Desert Climate





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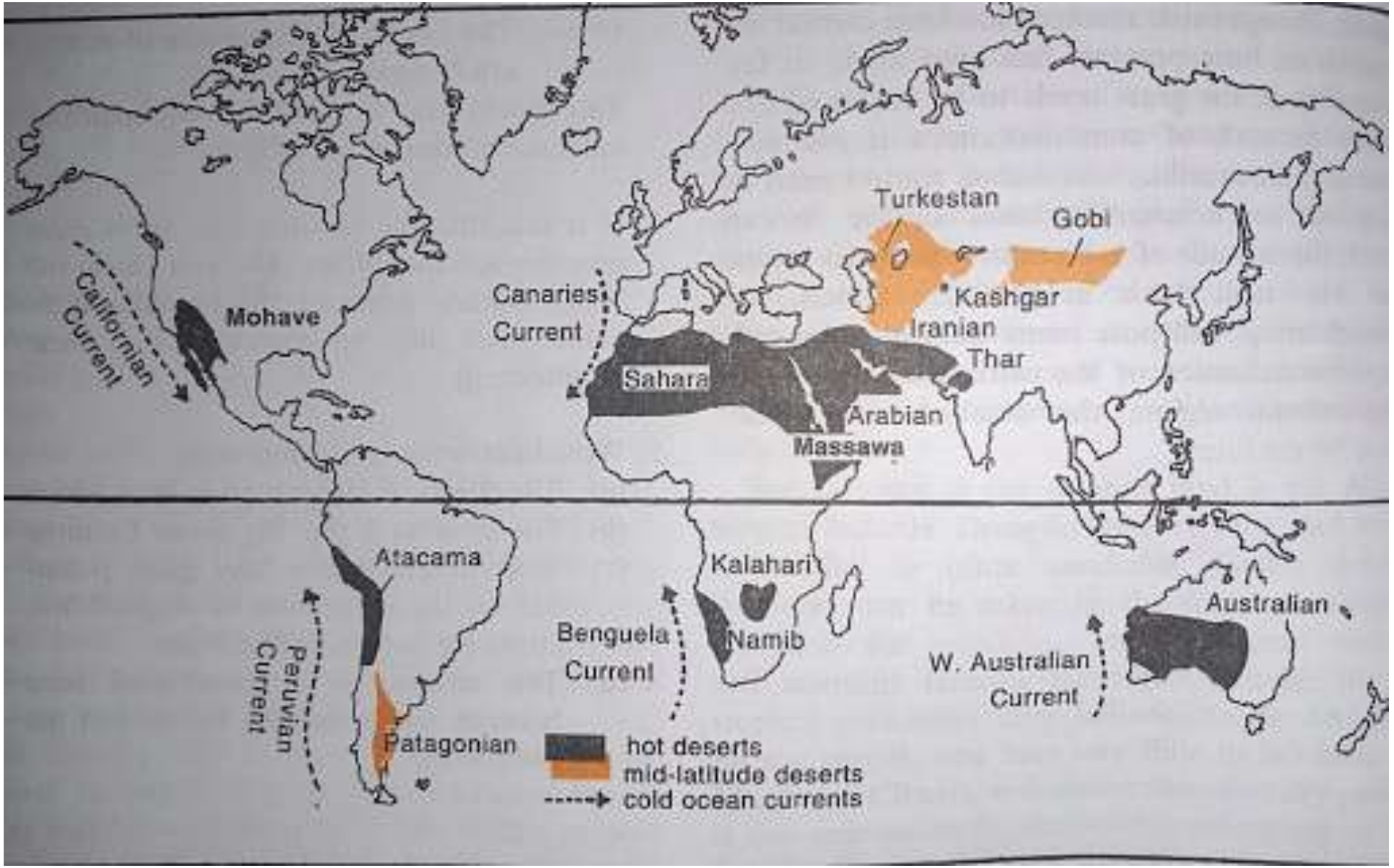
Hot Deserts – Sub Tropical High Pressure Belt



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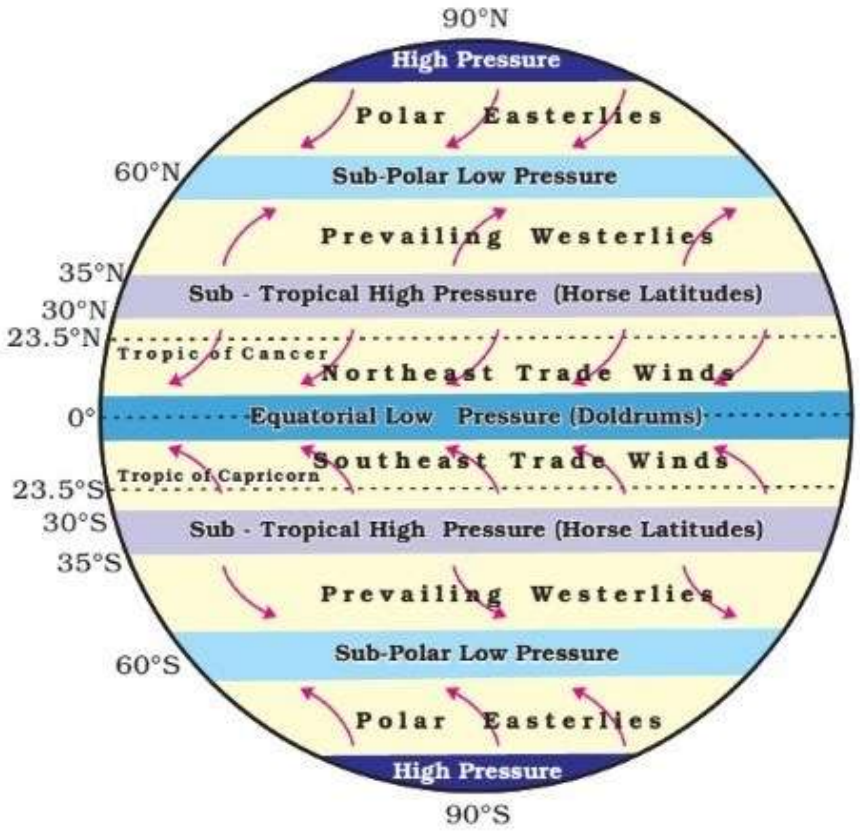
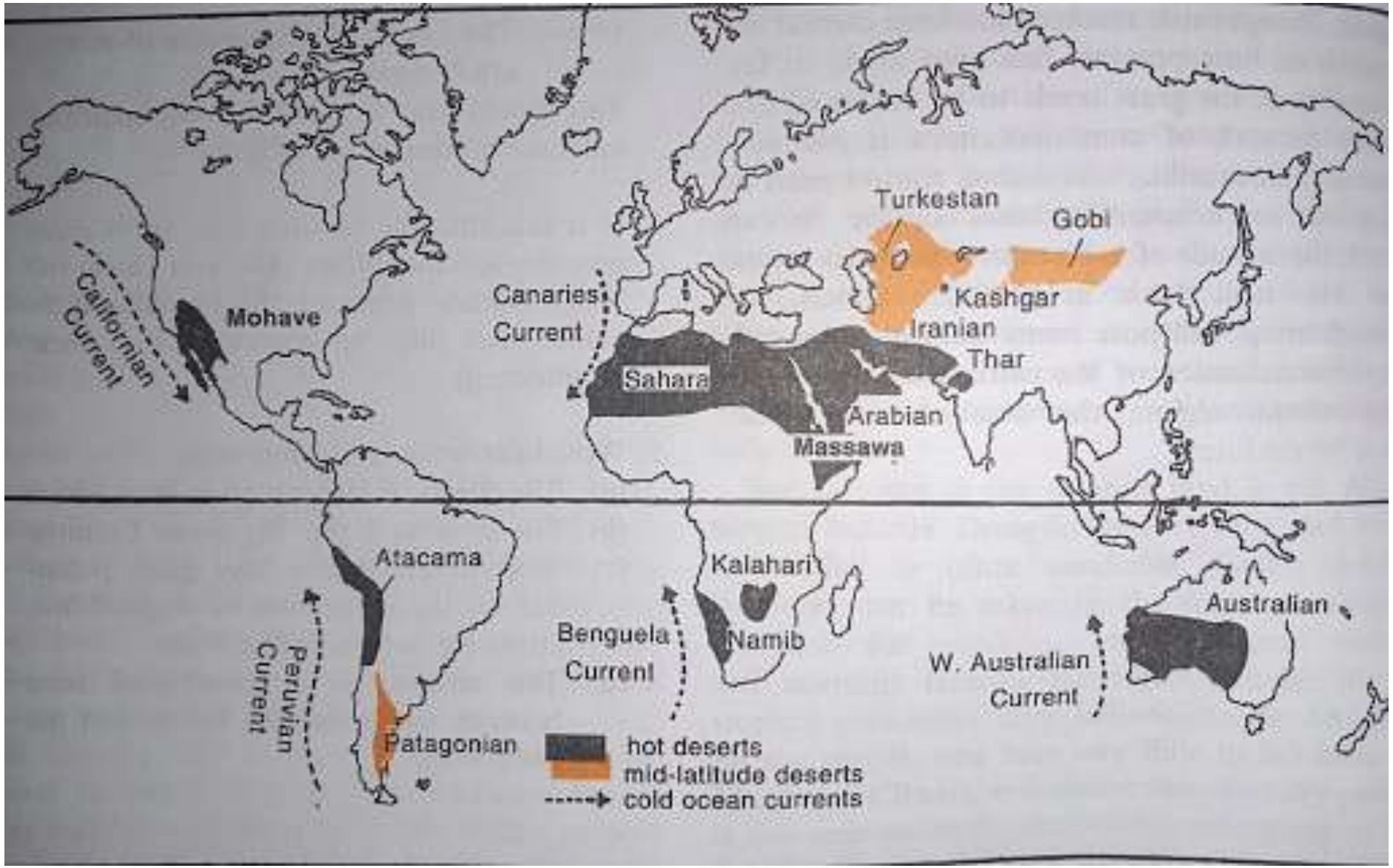
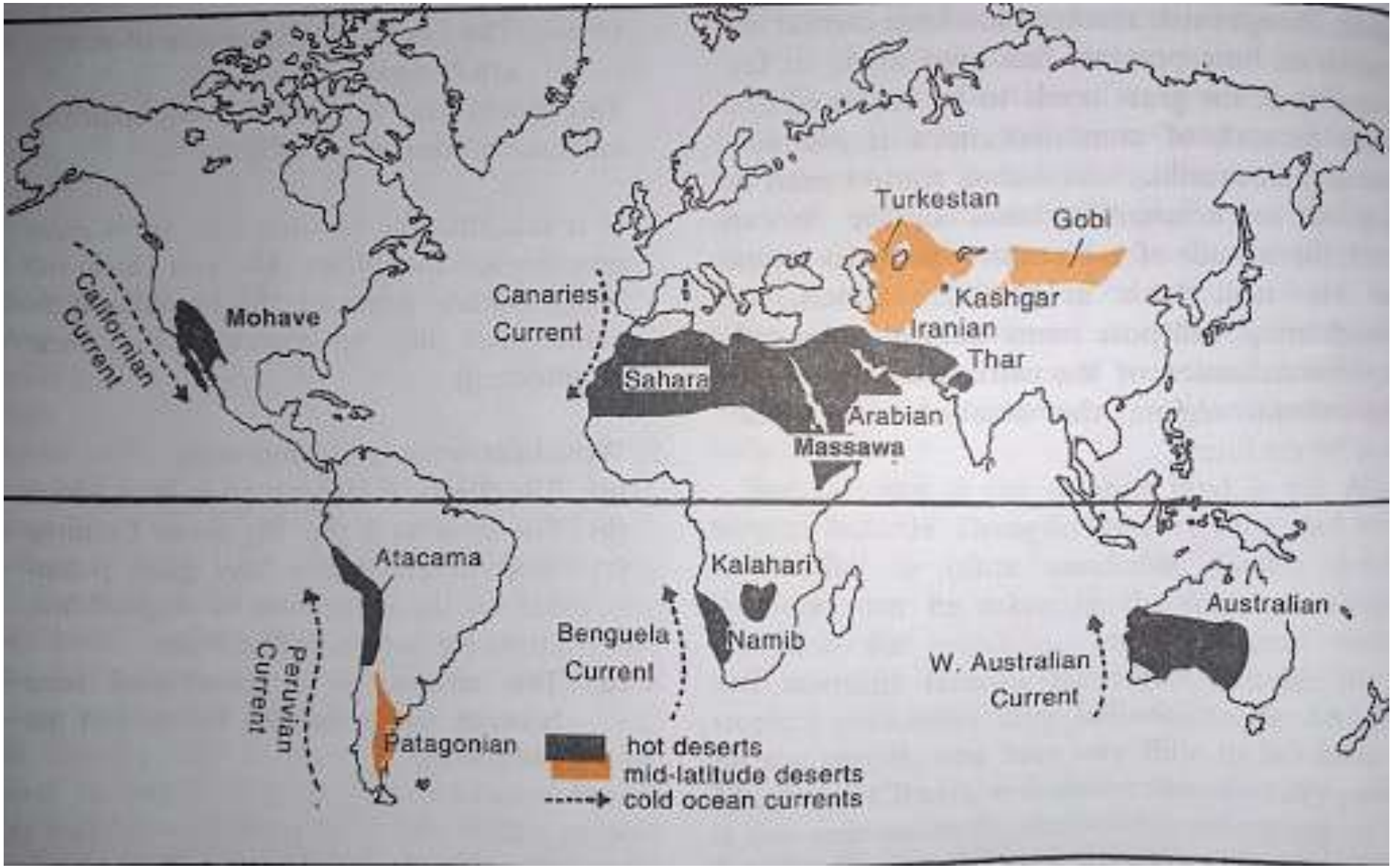


Major Pressure Belts and Wind System

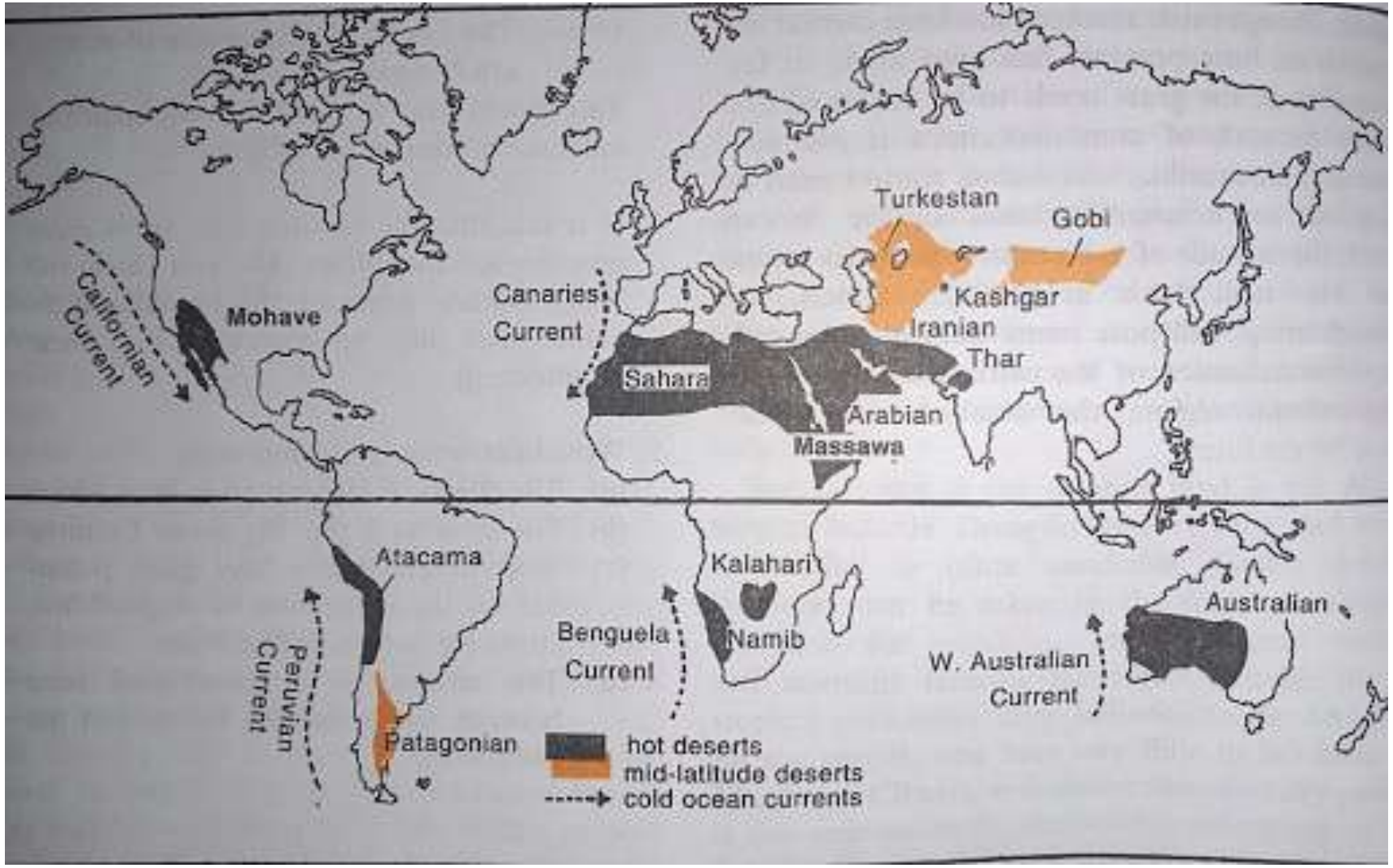
Hot Deserts – Cold Currents



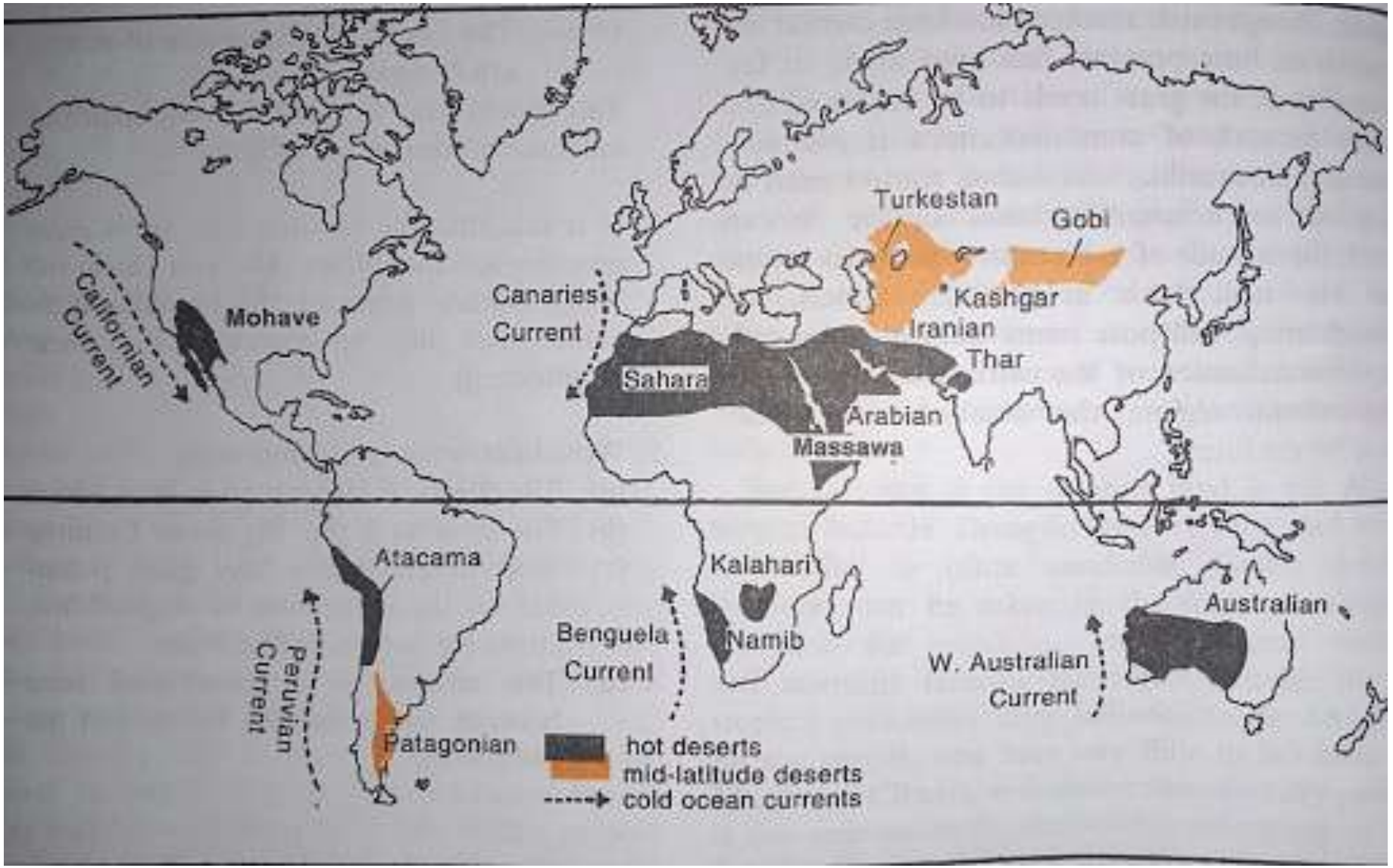
Hot Deserts – Off Shore Trade Winds



Mid Latitude Deserts – Continentality – Considerable Distance from Sea and surrounded by Mountain Ranges



Mid Latitude Deserts – Leeward Side of Continents



Q. What could be the main reason/reasons of the formation of African and Eurasian desert belt?

1. It is located in the sub-tropical high pressure cells.
2. It is under the influence of warm ocean currents.

Which of the statements given above is/are correct in this context?

a) **1 only**

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

- The main reason for the formation of African and Eurasian desert belt is that **it is located in the subtropical high pressure cells.**

- It is under the **influence of cold currents, which leads to higher aridity.**

Q) Which of the following leaf modifications occurs/occur in desert areas to inhibit water loss? (2018)

1) Hard and waxy leaves

2) Tiny leaves or no leaves

3) Thorns instead of leaves

Select the correct answer using the codes given below:

a) 1 and 2 only

b) 2 only

c) 1 and 3 only

d) 1, 2 and 3

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Select the correct answer using the codes given below:

a) 1 and 2 only

b) 2 only

c) 1 and 3 only

d) 1, 2 and 3

- **Wax coatings** on leaves **prevent water loss through evaporation.**
- Leaves are also **smaller on desert plants**.
- Many plants in the desert conserve water **by not having any leaves at all.**
- Many **cacti** have **spines** in place of leaves, which **conduct photosynthesis , small structures also reflect light**, further reducing water loss, **cacti will grow temporary root systems and absorb water.**

Q) Which of the following leaf modifications occurs/occur in desert areas to inhibit water loss?

1) Hard and waxy leaves

2) Tiny leaves or no leaves

3) Thorns instead of leaves

Select the correct answer using the codes given below:

a) 1 and 2 only

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World Climate – PYQ - Themes

I. Equatorial Climate

II. Monsoon Climate

III. Savanah Climate

IV. Steppe Climate

V. Desert Climate

Special Prelims Based Session

One Shot Series - Complete World Climate Types in One Video - UPSC Prelims 2023

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1).Hot, Wet Equatorial Climate. | 2).The Tropical monsoon & Tropical Marine Climate. | 3).The... 11 chapters

CLIMATOLOGY
Basic Concepts

Solar Radiation, Heat Balance and Temperature

Q. The increasing amount of carbon dioxide in the air is slowly raising the temperature of the atmosphere, because it absorbs (2012)

a) The water vapour of the air and retains its heat.

b) The ultraviolet part of the solar radiation.

c) All the solar radiations.

d) The infrared part of the solar radiation.

Q. The increasing amount of carbon dioxide in the air is slowly raising the temperature of the atmosphere, because it absorbs(2012)

a) The water vapour of the air and retains its heat.

b) The ultraviolet part of the solar radiation.

c) All the solar radiations.

d) The infrared part of the solar radiation.

Q) Normally, the temperature decreases with the increase in height from the Earth's surface, because (2012)

1. The atmosphere can be heated upwards only from the Earth's surface
2. There is more moisture in the upper atmosphere.
3. The air is less dense in the upper atmosphere.

Select the correct answer using the codes given below:

a) 1 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

Q) Normally, the temperature decreases with the increase in height from the Earth's surface, because (2012)

1. The atmosphere can be heated upwards only from the Earth's surface.
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Select the correct answer using the codes given below:

a) 1 only

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c) 1 and 3 only

d) 1, 2 and 3

- **Giveaway : Statement 2**

- Since the **atmosphere is warmed from the ground up, and since the air is at its most dense near the surface of the earth**, the air near the surface is going to be able to retain much more heat than the air at higher elevations due to the increased amounts of air molecules; higher elevations have fewer air molecules and consequently can't retain as much heat.

- **Water vapour decreases rapidly with Altitude .**

Additional Information

- Shortwave radiation contains a lot of energy; longwave radiation contains less energy than shortwave radiation
- Solar energy enters our atmosphere as shortwave radiation . The **sun emits shortwave radiation because it is extremely hot and has a lot of energy to give off.**
- Next the **surface absorb the solar energy.**
- The **ground heats up and re-emits energy as longwave radiation** .
- Earth **emits longwave radiation because Earth is cooler than the sun and has less energy available to give off.**

Extra Information - NCERT

- The **insolation received by the earth is in short waves forms and heats up its surface.**
- The **earth** after being heated itself becomes a radiating body and **it radiates energy to the atmosphere in long wave form**.
- **This energy heats up the atmosphere from below. This process is known as terrestrial radiation.**

Q) Normally, the temperature decreases with the increase in height from the Earth's surface, because (2012)

1. The atmosphere can be heated upwards only from the Earth's surface.
2. **There is more moisture in the upper atmosphere**.
3. The air is less dense in the upper atmosphere.

Select the correct answer using the codes given below:

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Q. With reference to the Earth's atmosphere, which one of the following statements is correct?(2023)

a) The total amount of insolation received at the equator is roughly about 10 times of that received at the poles.

b) Infrared rays constitute roughly two-thirds of insolation.

c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.

d) Infrared waves are a part of visible spectrum of electromagnetic waves of solar radiation.

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c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.

d) Infrared waves are a part of visible spectrum of electromagnetic waves of solar radiation.

- Water vapor is the most abundant greenhouse gas in the Earth's atmosphere, and it has strong absorption properties in the infrared portion of the electromagnetic spectrum. As infrared radiation passes through the atmosphere, water vapor molecules can absorb and re-emit a significant portion of the longwave radiation – **option c**

Q) The annual range of temperature in the interior of the continents is high as compared to coastal areas. What is/are the reason/reasons? (2013)

1) Thermal difference between land and water

2) Variation in altitude between continents and oceans

3) Presence of strong winds in the interior

4) Heavy rains in the interior as compared to coasts

Select the correct answer using the codes given below:

a) 1 only

b) 1 and 2 only

c) 2 and 3 only

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Q) The annual range of temperature in the interior of the continents is high as compared to coastal areas. What is/are the reason/reasons? (2013)

1) Thermal difference between land and water
2) Variation in altitude between continents and oceans
3) Presence of strong winds in the interior
4) **Heavy rains in the interior as compared to coasts – start from this**

Select the correct answer using the codes given below:

a) 1 only
b) 1 and 2 only
c) 2 and 3 only
d) 1, 2, 3 and 4

- **Areas in the interior of India are far away from the moderating influence of the sea**. Such areas have extremes of climate.
- There may or may not be much difference between the altitudes of land and ocean.
- Winds do not contribute enough to the variations in temperature.
- Coastal region receive more rainfall.

Q) The annual range of temperature in the interior of the continents is high as compared to coastal areas. What is/are the reason/reasons? (2013)

1) Thermal difference between land and water

2) Variation in altitude between continents and oceans

3) Presence of strong winds in the interior

4) Heavy rains in the interior as compared to coasts

Select the correct answer using the codes given below:

a) 1 only

b) 1 and 2 only

c) 2 and 3 only

d) 1, 2, 3 and 4

Q. Consider the following statements(2023)

Statement-I:

The temperature contrast between continents and Oceans is greater during summer than in winter.

Statement-II

The specific heat of water is more than that of land surface.

Which one of the following is correct in respect of the above statements?

a) Both Statement-l and Statement-II are correct and Statement-II is the correct explanation for Statement-I

b) Both Statement-I and Statement-1I are correct and Statement-II is not the correct explanation for Statement-I

c) Statement-1 is Correct but Statement-II is incorrect

d) Statement-1 is incorrect but Statement-II is correct

Q. Consider the following statements:

Statement-I:

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c) Statement-1 is Correct but Statement-II is incorrect

d) Statement-1 is incorrect but Statement-II is correct

- **The specific heat capacity of water is much greater than the land -** more heat is required to raise the temperature of one gram of water by 1 degree than one gram of land.
- **the ocean slowly warms in the summer, keeping air cool, and it slowly cools in winter, keeping the air warm.**
- **The temperature contrast between continents and oceans is greater during summer than in winter.**

Interior of the Earth - Earthquakes

Q. Consider the following statements: (2023)

1. In a seismograph, P waves are recorded earlier than S waves.
2. In P waves, the individual particles vibrate to and fro in the direction of wave propagation whereas in S waves, the particles vibrate up and down at right angles to the direction of wave propagation.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

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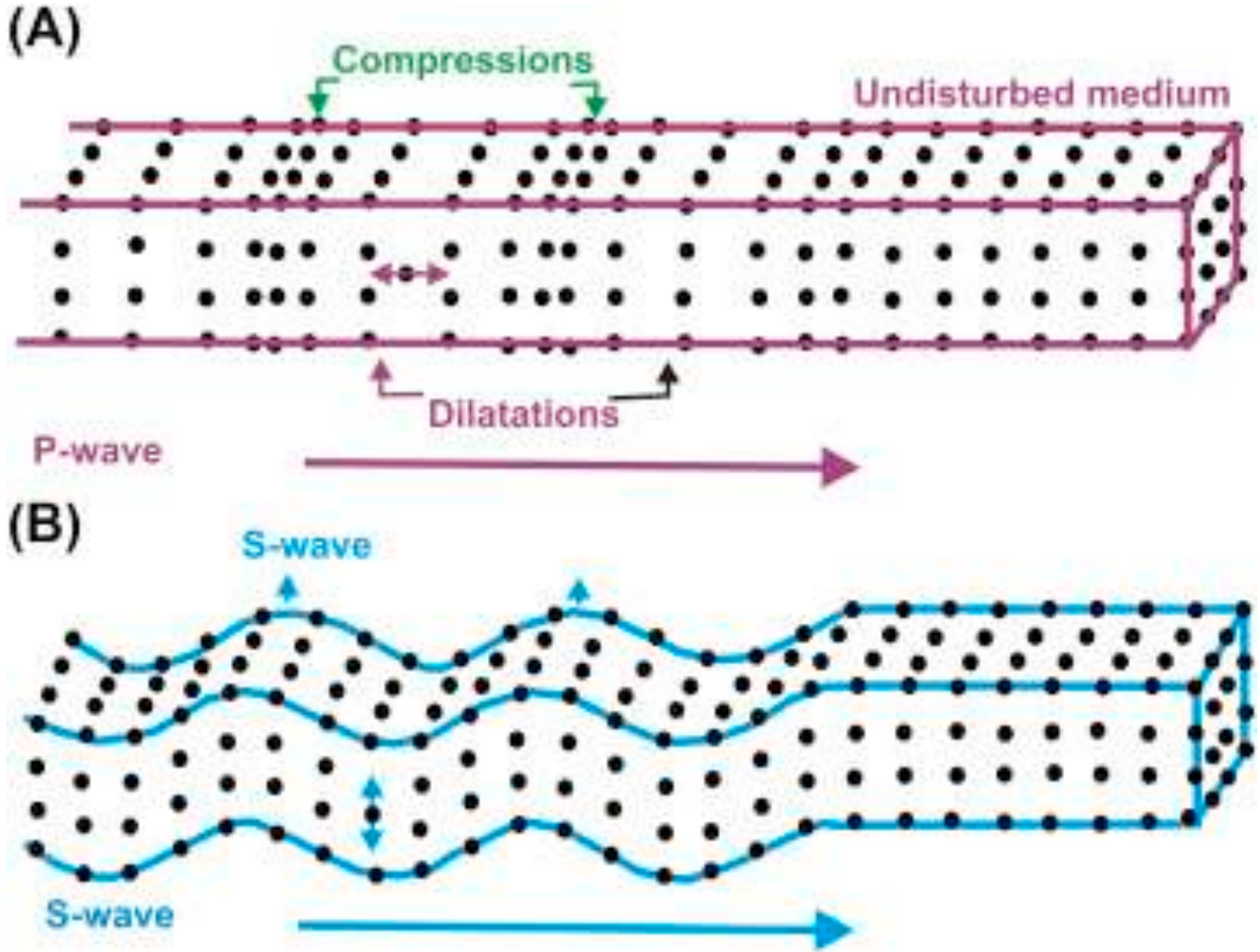
(A)
Compressions
Undisturbed medium
Dilatations
P-wave
(B)
S-wave
S-wave

- **P-waves vibrate parallel to the direction of the wave -**exerts pressure - creates density differences - stretching and squeezing of the material.
- **The direction of vibrations of S-waves is perpendicular to the wave direction in -** create troughs and crests in the material.

Q. Consider the following statements:

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El-Nino, La- Nina

Q. La Nina is suspected to have caused recent floods in Australia. How is La Nina different from El Nino? (2011)

1. La Nina is characterised by unusually cold ocean temperature in **equatorial Indian Ocean** whereas El Nino is characterised by unusually warm ocean temperature in the equatorial Pacific Ocean.
2. El Nino has adverse effect on south-west monsoon of India, but **La Nina has no effect on monsoon climate**

Which of the statements given above is/are correct?

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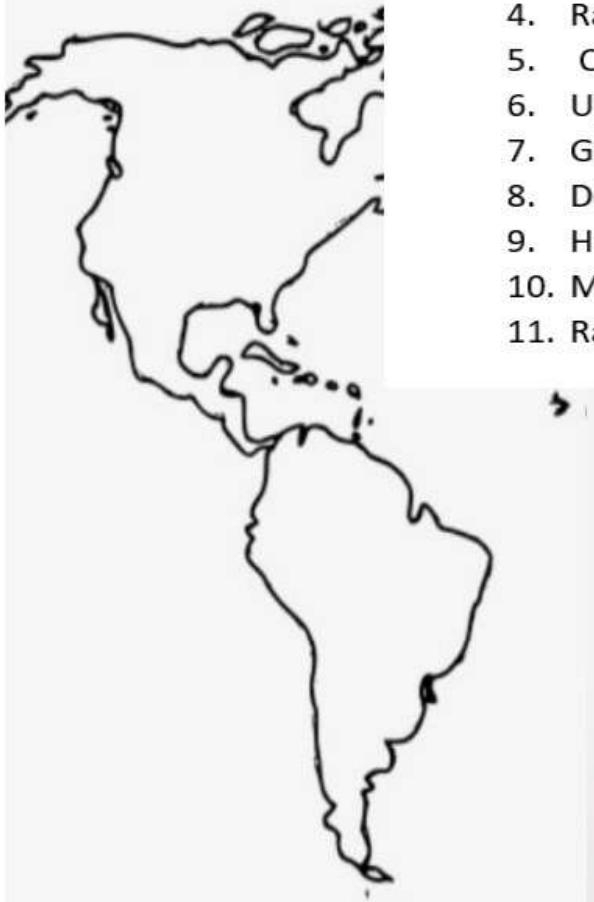
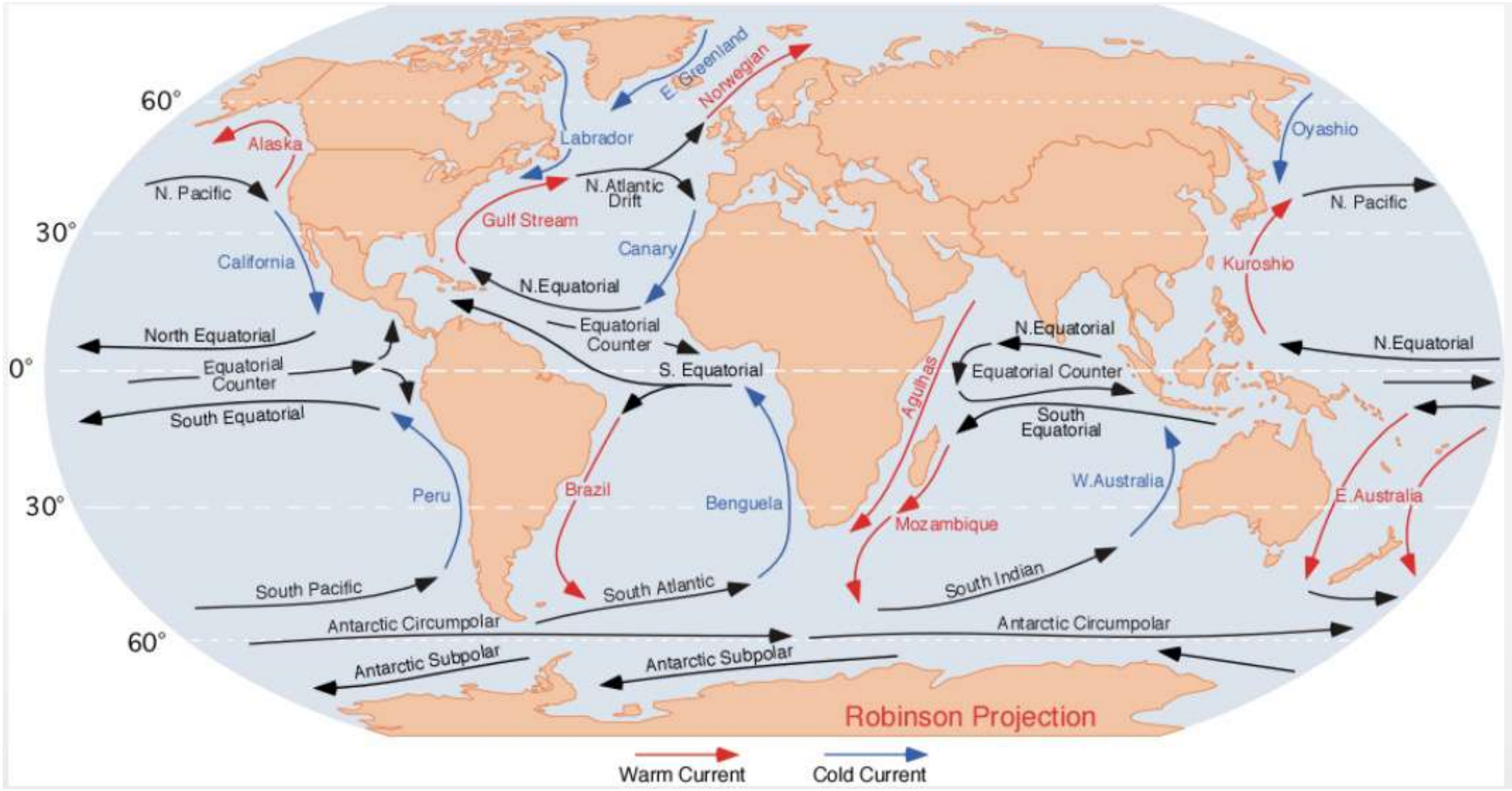
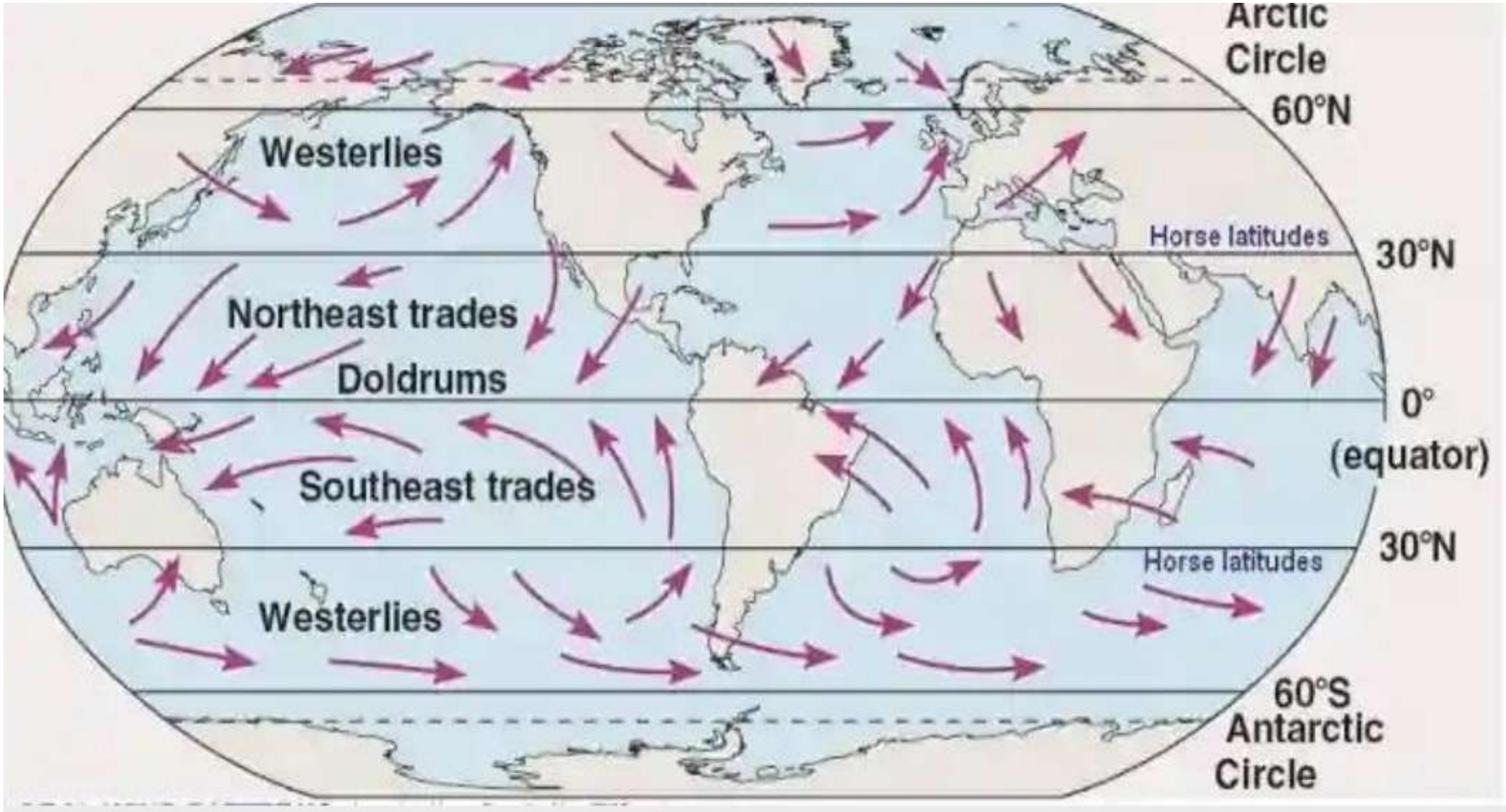
Concept – Normal Condition

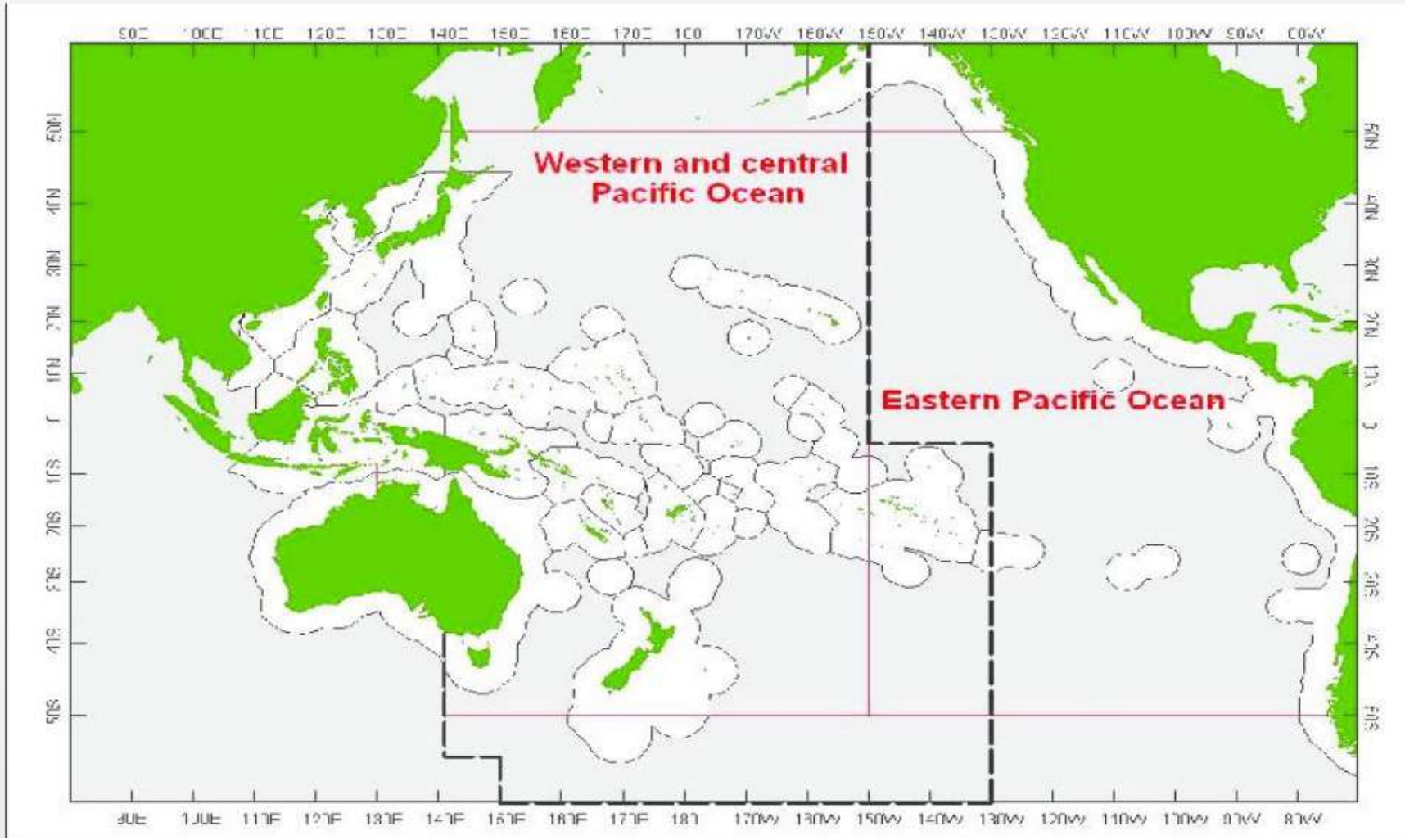


LA – NINA

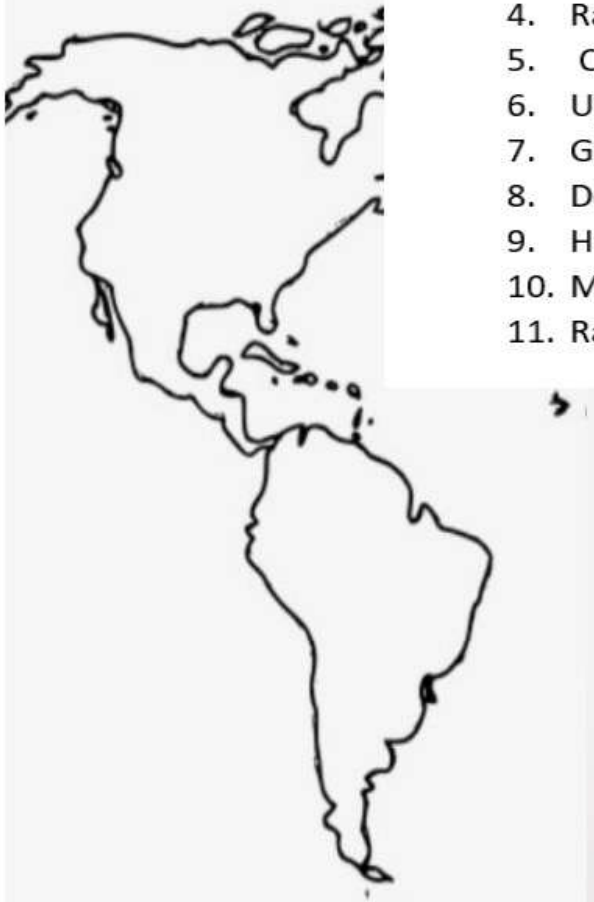
1. Western Pacific Warm Pool- Australia
2. Trade Winds
3. Low Pressure – Australia
4. Rainfall – Australia
5. Cold Current – Peru
6. Upwelling zones
7. Good – Fishing Industry
8. Deserts with Cold Current
9. High Pressure – Peru
10. Mascarene High
11. Rainfall in India - Favorable


60°
30°
0°
30°
60°
E. Greenland
Norwegian
Labrador
Oyashio
Alaska
N. Pacific
N. Atlantic Drift
N. Pacific
Gulf Stream
Canary
California
Kuroshio
N.Equatorial
North Equatorial
Equatorial Counter
S. Equatorial
N.Equatorial
N.Equatorial
Equatorial Counter
Agulhas
Equatorial Counter
South Equatorial
South Equatorial
W.Australia
Peru
Brazil
Benguela
E.Australia
Mozambique
South Pacific
South Atlantic
South Indian
Antarctic Circumpolar
Antarctic Circumpolar
Antarctic Subpolar
Antarctic Subpolar
Robinson Projection
Warm Current
Cold Current


Arctic Circle
60°N
Westerlies
Horse latitudes
30°N
Northeast trades
Doldrums
0°
(equator)
Southeast trades
30°N
Horse latitudes
Westerlies
60°S
Antarctic Circle


Western and central
Pacific Ocean
Eastern Pacific Ocean

Concept – Normal Condition



LA – NINA

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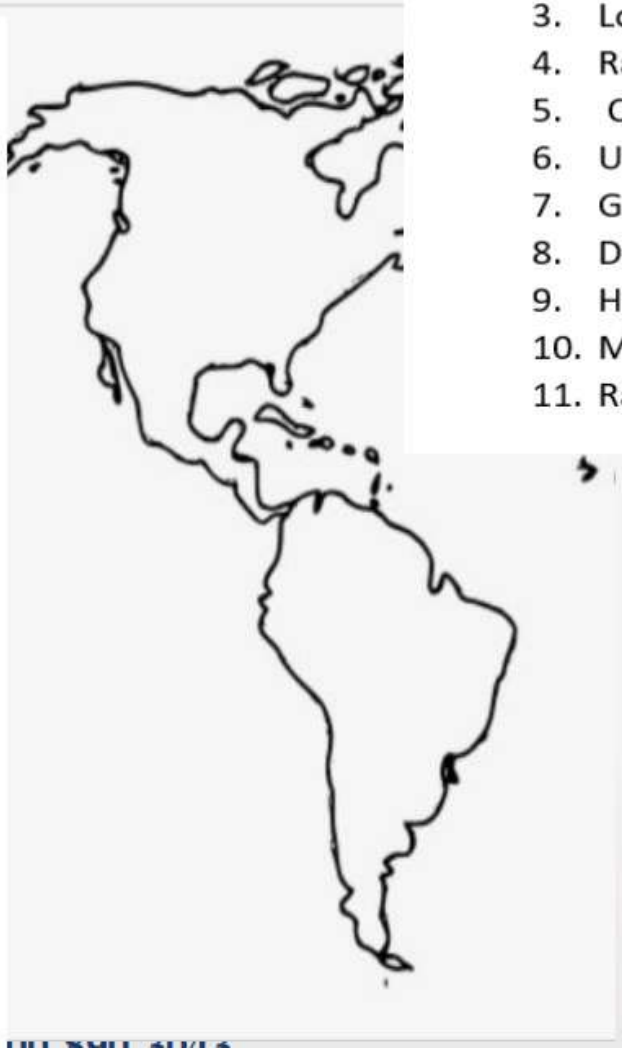
Concept – La-Nina



LA – NINA

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5. Cold Current – Peru
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7. Good – Fishing Industry
8. Deserts with Cold Current
9. High Pressure – Peru
10. Mascarene High
11. Rainfall in India - Favorable

Concept – El-Nino

EL – NINO

1. Peruvian Coast - Downwelling zones
2. Issue with Fishing Industry
3. Peruvian Coast - Low Pressure
4. Peruvian Coast - Rainfall
5. Trade Winds Weakens
6. Drought – Australia + Forest Fires
7. India – Drought

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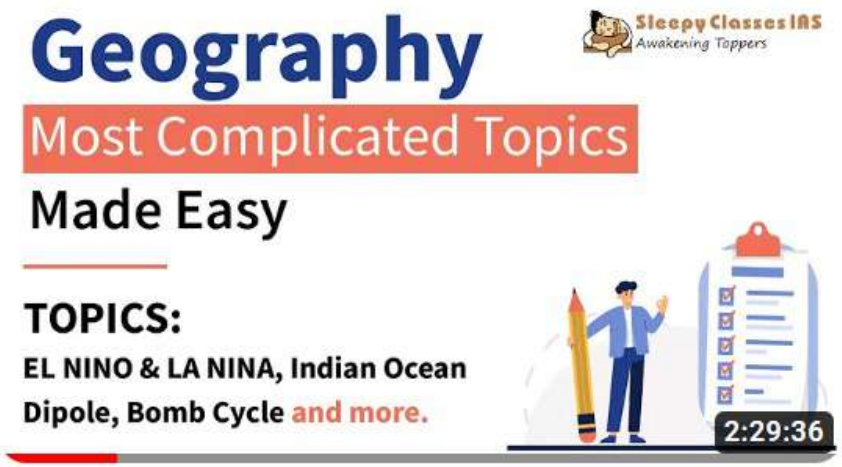
Special Prelims Based Session



Maha Video -El Nino Modoki , La Nina Modoki, Madden Jullien Oscillation , Bomb Cyclone, Jet Streams

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Water in the Atmosphere

Q. Consider the following statements: (2022)

1. High clouds primarily reflect solar radiation and cool the surface of the Earth.
2. Low clouds have a high absorption of infrared radiation emanating from the Earth's surface and thus cause warming effect.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

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Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

- **Statement 1 is not correct:** Low, thick clouds primarily reflect solar radiation and cool the surface of the Earth.
- **Statement 2 is not correct:** High, thin clouds primarily transmit incoming solar radiation; at the same time, they trap some of the outgoing infrared radiation emitted by the Earth and radiate it back downward, thereby warming the surface of the Earth.

Q. Consider the following statements(2022)

1. High clouds primarily reflect solar radiation and cool the surface of the Earth.
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a) 1 only

b) 2 only

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Q.) In the context of which of the following do some scientists suggest the used of cirrus cloud thinning technique and the injection of sulphate aerosol into stratosphere? (2019)

a) Creating the artificial rains in some regions.

b) Reducing the frequency and intensity of tropical cyclones.

c) Reducing the adverse effects of solar wind on the Earth.

d) Reducing the global warming.

Q.) In the context of which of the following do some scientists suggest the used of cirrus cloud thinning technique and the injection of sulphate aerosol into stratosphere? (2019)

a) Creating the artificial rains in some regions.

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c) Reducing the adverse effects of solar wind on the Earth.

d) Reducing the global warming.

- The geo-engineering technique known as stratospheric aerosol injection (SAI) could limit rising temperatures that are causing climate change.
- This **would introduce aerosols into the stratosphere to create a cooling effect** via global dimming, **which occurs naturally from volcanic eruptions.**
- It appears that stratospheric aerosol injection, at a moderate intensity, could counter most changes to temperature and precipitation, take effect rapidly, have low direct implementation costs, and be reversible in its direct climatic effects.
- **Cloud thinning strategy would be used to shoot powder over cirrus clouds, which would thin out their coverage and alter their radiative effects over Earth.**
- Thinning the clouds, according to some researchers could allow more heat to escape into space

Q) Why are dewdrops not formed on a cloudy night? (2019)

a) Clouds absorb the radiation released from the Earth's surface.

b) Clouds reflect back the Earth's radiation.

c) The Earth's surface would have low temperature on cloudy nights.

d) Clouds deflect the blowing wind to ground level.

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Dew is the **result of water changing from a vapor to a liquid**.

Dew **forms as temperatures drop and objects cool down**.

But when sky is cloudy ,**clouds send the earth s radiation back to ground** so **the ground never gets cold enough for the dew to form.**

Q.) Why are dew drops not formed on a cloudy night?

a) Clouds absorb the radiation released from the Earth's surface.

b) Clouds reflect back the Earth's radiation.

c) The Earth's surface would have low temperature on cloudy nights.

d) Clouds deflect the blowing wind to ground level.

Q) During a thunderstorm, the thunder in the skies is produced by the (2013)

1) Meeting of cumulonimbus clouds in the sky.

2) Lightning that separates the nimbus clouds.

3) Violent upward movement of air and water particles.

Select the correct answer using the codes given below:

a) 1 only

b) 2 and 3

c) 1 and 3

d) None of the above produces the thunder

Q) During a thunderstorm, the thunder in the skies is produced by the (2013)

1) Meeting of cumulonimbus clouds in the sky.

2) Lightning that separates the nimbus clouds.

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Select the correct answer using the codes given below:

a) 1 only

b) 2 and 3

c) 1 and 3

d) None of the above produces the thunder

- **Thunder is the sound caused by lightning**.
- The sudden increase in **pressure and temperature** from lightning produces **rapid expansion of the air surrounding** and within **a bolt of lightning**. In turn**, this expansion of air creates a sonic shock wave,** similar to a sonic boom, which produces the sound of thunder.

Distribution of Oceans and Continents

Q) Which of the following phenomena might have influenced the evolution of organisms ? (2014)

1) Continental drift

2) Glacial cycles

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q) Which of the following phenomena might have influenced the evolution of organisms ? (2014)

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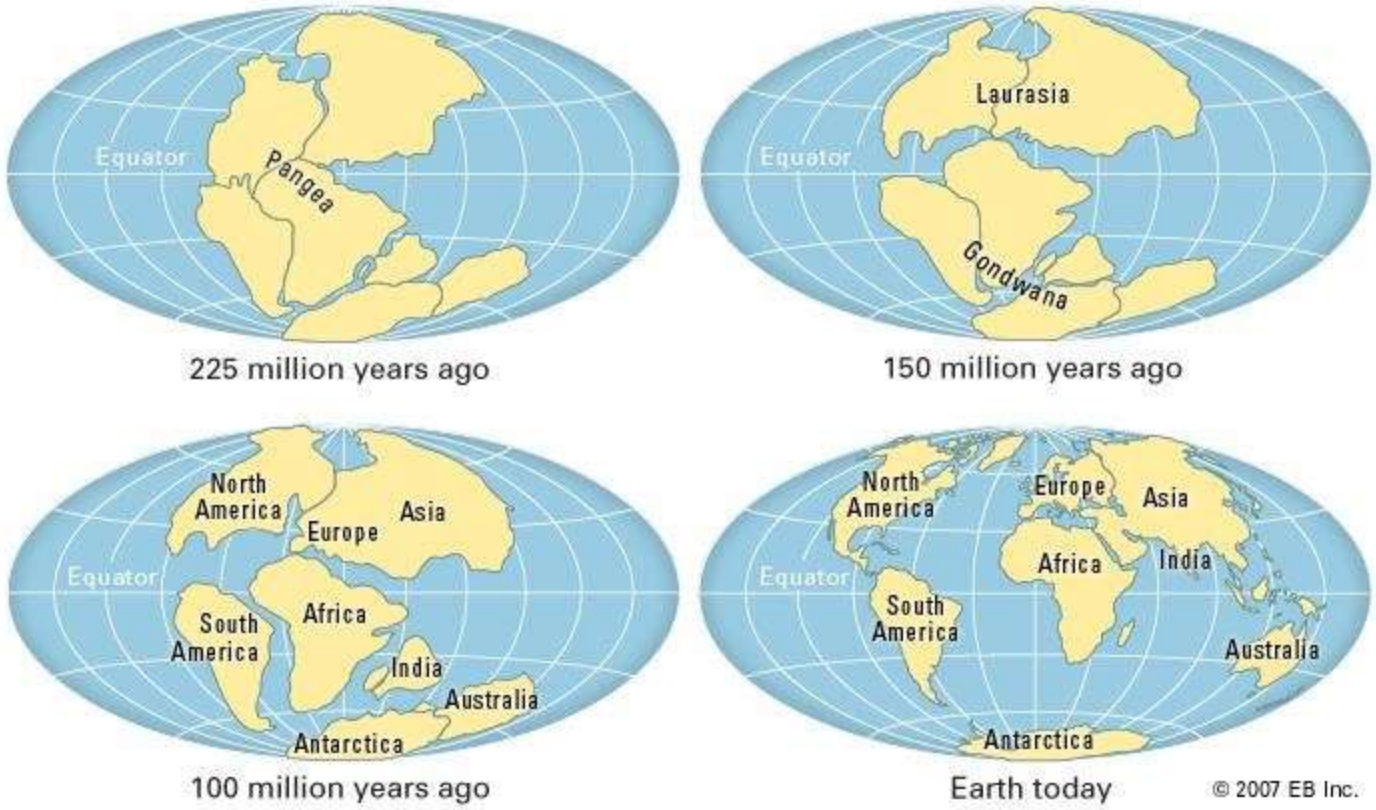
A glacial period (alternatively glacial or glaciation) is an interval of time (thousands of years) within **an ice age that is marked by colder temperatures** and glacier advances.

Interglacials, on the other hand, **are periods of warmer climate between glacial periods.**

Continental Drift : moved some animals ,some animals stuck there

Continental Drift : moved some animals ,some animals stuck there



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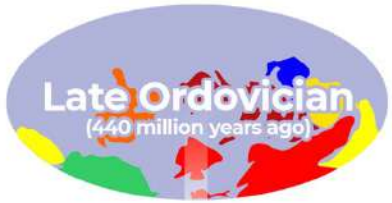
Interglacials, on the other hand, **are periods of warmer climate between glacial periods.**

Continental Drift : moved some animals ,some animals stuck there

Additional Information : Evidences of Continental Drift Theory

1) The Matching of Continents
2) Rocks of Same Age Across the Oceans
3) Tillite
4) Placer Deposits
5) **Distribution of Fossils**

The “Big Five” mass extinctions



First mass extinction

85% of all species, including marine inverterbates like:
- graptolites
- brachiopods
- conodonts.

Second mass extinction

75% of all species including:
- brachiopods
- bivalves
- sarcopterygians.

Third mass extinction (the largest)

95% of all species, including marine animals like:
- *Dimetrodon*
- *Estemmenosuchus*
- *Orthacanthus*
- trilobites
- *Moschops.*

Fourth mass extinction

80% of all species, including:
- icthyosaurs
- paddle-finned plesiosaurs
- phytoplankton
- many species of frogs, salamanders, turtles, snakes, spiders and grasshoppers.

Fifth mass extinction

76% of all species including:
- non-avian dinosaurs
- bivalves (*Exogyra* and *Gryphaea*)
- inoceramids
- flying reptiles (pterosaurs).

Q) Which of the following phenomena might have influenced the evolution of organisms ?

1) Continental drift

2) Glacial cycles

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q) Consider the following statements: (2018)

1) The Earth's magnetic field has reversed every few hundred thousand years.
2) When the Earth was created more than 4000 million years ago, there was 54% oxygen and no carbon dioxide.
3) When living organisms originated, they modified the early atmosphere of the Earth.

Which of the statements given above is/are correct?

a) 1 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

Q) Consider the following statements: (2018)

1) **The Earth's magnetic field has reversed every few hundred thousand years.- Start with this**
2) When the Earth was created more than 4000 million years ago, there was 54% oxygen and no carbon dioxide.
3) When living organisms originated, they modified the early atmosphere of the Earth.

Which of the statements given above is/are correct?

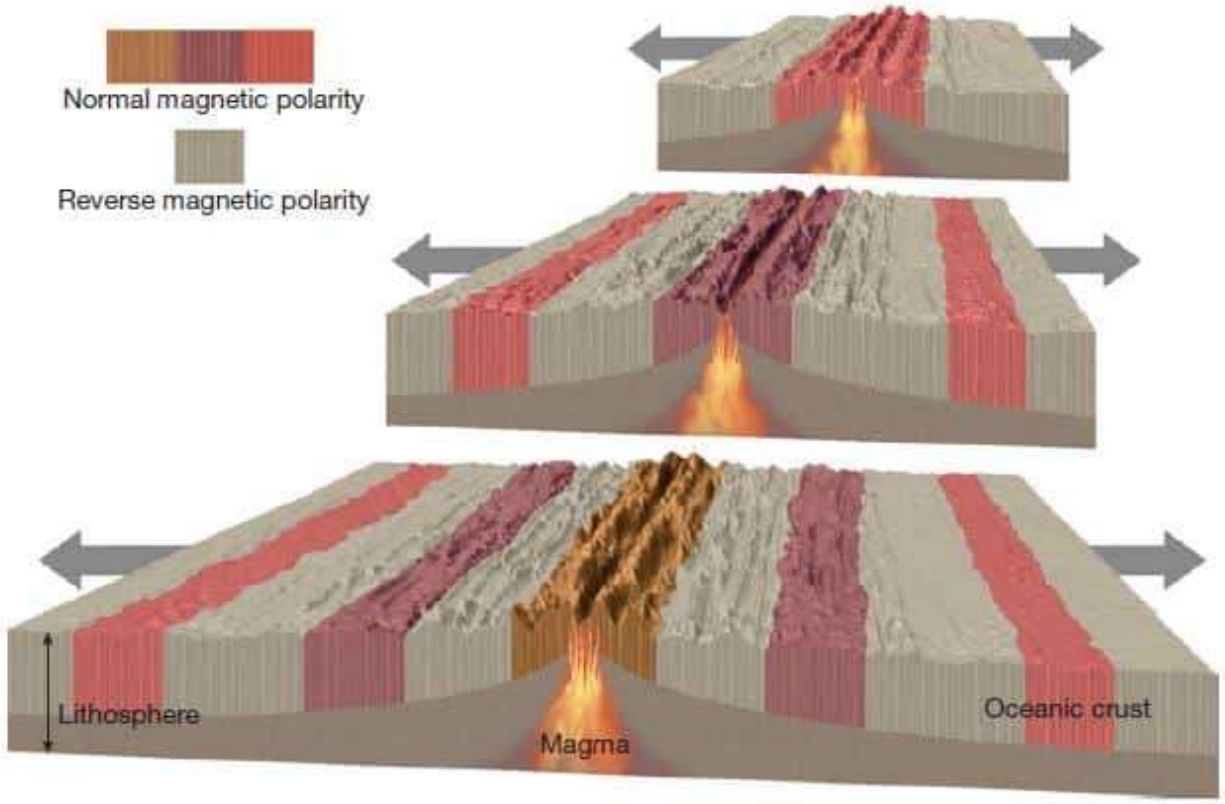
a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Distribution of Ocean and Continents



- Earth's magnetic field has reversed its polarity many times over the millennia.
- When Earth formed 4.6 billion years ago, **it had almost no atmosphere**. As **Earth cooled, an atmosphere formed mainly from gases spewed from volcanoes** which included **hydrogen sulfide, methane**, and **10 to 200 times as much carbon dioxide as today's atmosphere.**
- Life started to have a major impact on the environment once **photosynthetic organisms evolved**. While photosynthetic life **reduced the carbon dioxide content of the atmosphere, it also started to produce oxygen**. **So, when living beings originated, they did modify the atmosphere**.

Q80) Consider the following statements:

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Atmospheric Circulation and Weather Systems

Q. Westerlies in southern hemisphere are stronger and persistent than in northern hemisphere. Why? (2011)

1. Southern hemisphere has less landmass as compared to northern hemisphere.
2. Coriolis force is higher in southern hemisphere as compared to northern hemisphere

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

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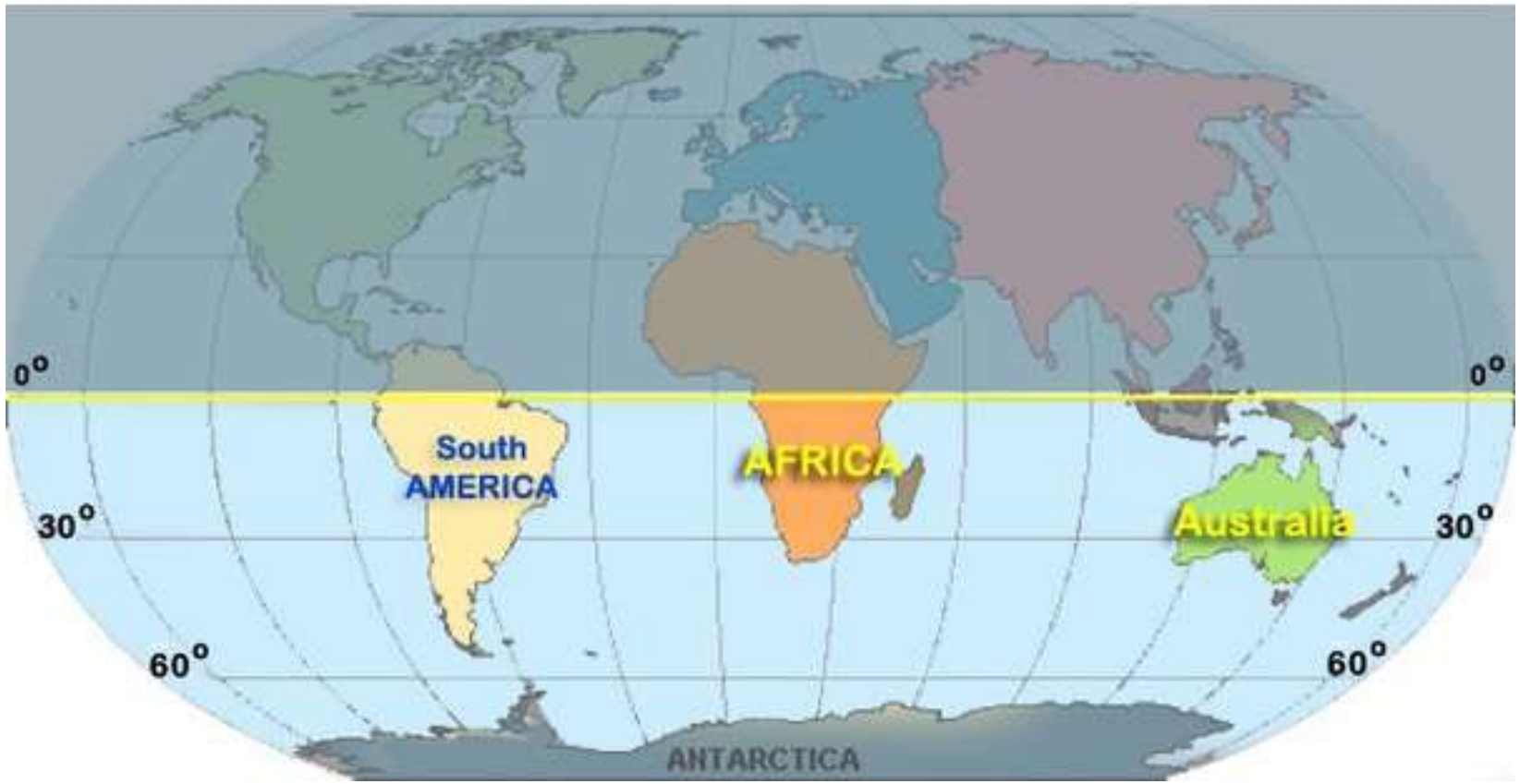
Southern Hemisphere



- Coriolis force **acts identically in both the Hemispheres.**

- **Due to less landmass, the winds experience a lesser frictional force in the Southern Hemisphere compared to the Northern Hemisphere.**

Q. Westerlies in southern hemisphere are stronger and persistent than in northern hemisphere. Why? (2011)

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2. Coriolis force is higher in southern hemisphere as compared to northern hemisphere

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q) Consider the following statements: (2015)

1) The winds which blow between **30 N and 60 S latitudes throughout the year are known as westerlies.**
2) The moist air masses that cause winter rains in North Western region of India are part of westerlies.

Which of the statements given above is/are correct?

a) 1 only
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1) The winds which blow between 30 N and 60 S latitudes throughout the year are known as westerlies.

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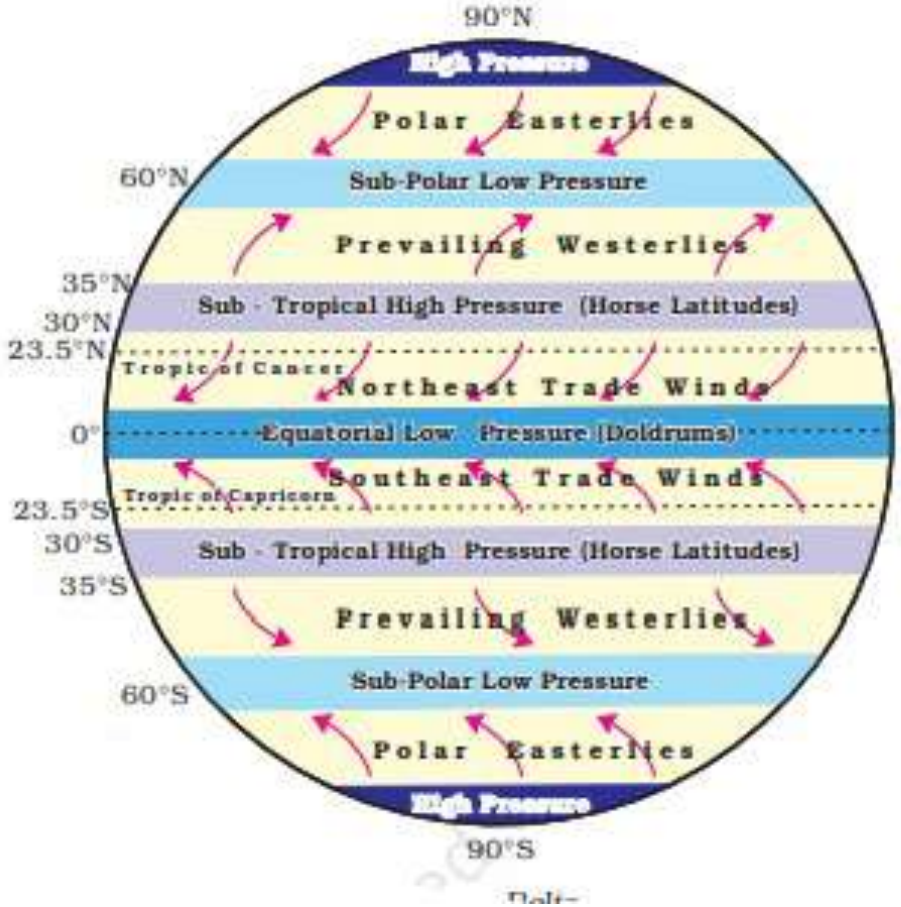
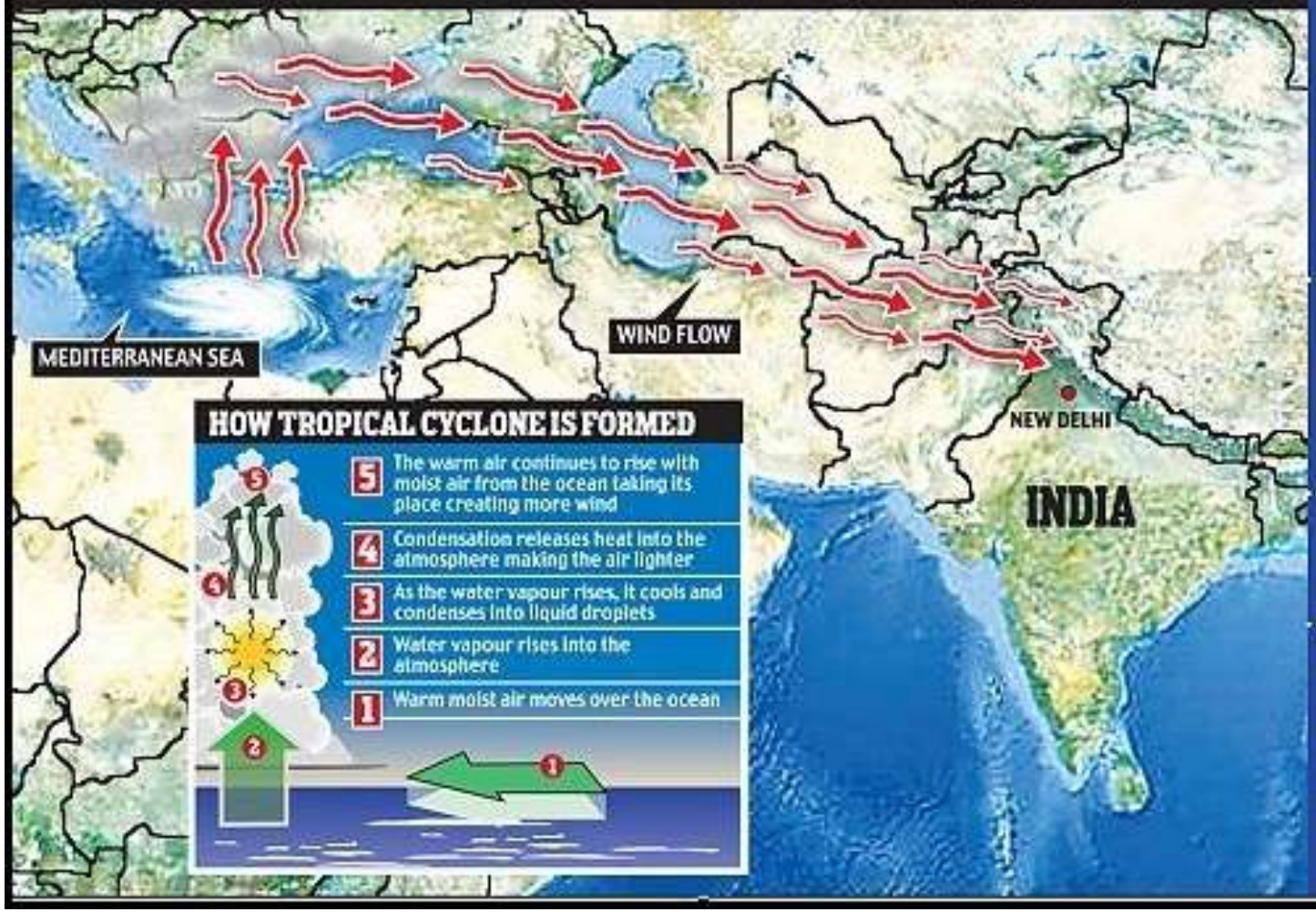

90°N
High Pressure
Polar Easterlies
60°N
Sub-Polar Low Pressure
Prevailing Westerlies
35°N
Sub - Tropical High Pressure (Horse Latitudes)
30°N
23.5°N
Tropic of Cancer
Northeast Trade Winds
0°
Equatorial Low Pressure (Doldrums)
Southeast Trade Winds
Tropic of Capricorn
23.5°S
30°S
Sub - Tropical High Pressure (Horse Latitudes)
35°S
Prevailing Westerlies
Sub-Polar Low Pressure
60°S
Polar Easterlies
High Pressure
90°S

FAST AND FURIOUS

The extreme weather conditions are a result of a weather phenomenon called western disturbance, which is going to be quite intense



HOW TROPICAL CYCLONE IS FORMED

5. The warm air continues to rise with moist air from the ocean taking its place creating more wind
4. Condensation releases heat into the atmosphere making the air lighter
3. As the water vapour rises, it cools and condenses into liquid droplets
2. Water vapour rises into the atmosphere
1. Warm moist air moves over the ocean

WESTERN DISTURBANCE

- Western disturbance is a cyclonic circulation in the mid and lower troposphere (between 2.1 and 7.6 km above sea level) which originates over the Mediterranean Sea, Caspian Sea and Black Sea
- It is one of the most important weather systems that causes adverse weather conditions over North-West India and particularly over the western Himalayan region
- Western disturbance during winter leads to occurrence of clouds, rainfall and snowfall
- An intense western disturbance usually produces widespread heavy snowfall over the western Himalayan region and rains over northern plains for a day or two and may trigger avalanches

- Westerlies flow between latitudes 30-60 degrees North and 30-60 degrees South. The statement mentions 30N-60S.
- **Winter Rains in India :** This is a non-monsoonal precipitation pattern driven by the Westerlies.

Q) Consider the following statements:

1) The winds which blow between 30 N and 60 S latitudes throughout the year are known as westerlies.
2) The moist air masses that cause winter rains in North Western region of India are part of westerlies.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q) Consider the following statements: (2020)

1) Jet streams occur in the **Northern Hemisphere only**.

2) Only some cyclones develop an eye.

3) The **temperature** inside the **eye of a cyclone is nearly 10°C lesser** than that of the surroundings.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3 only

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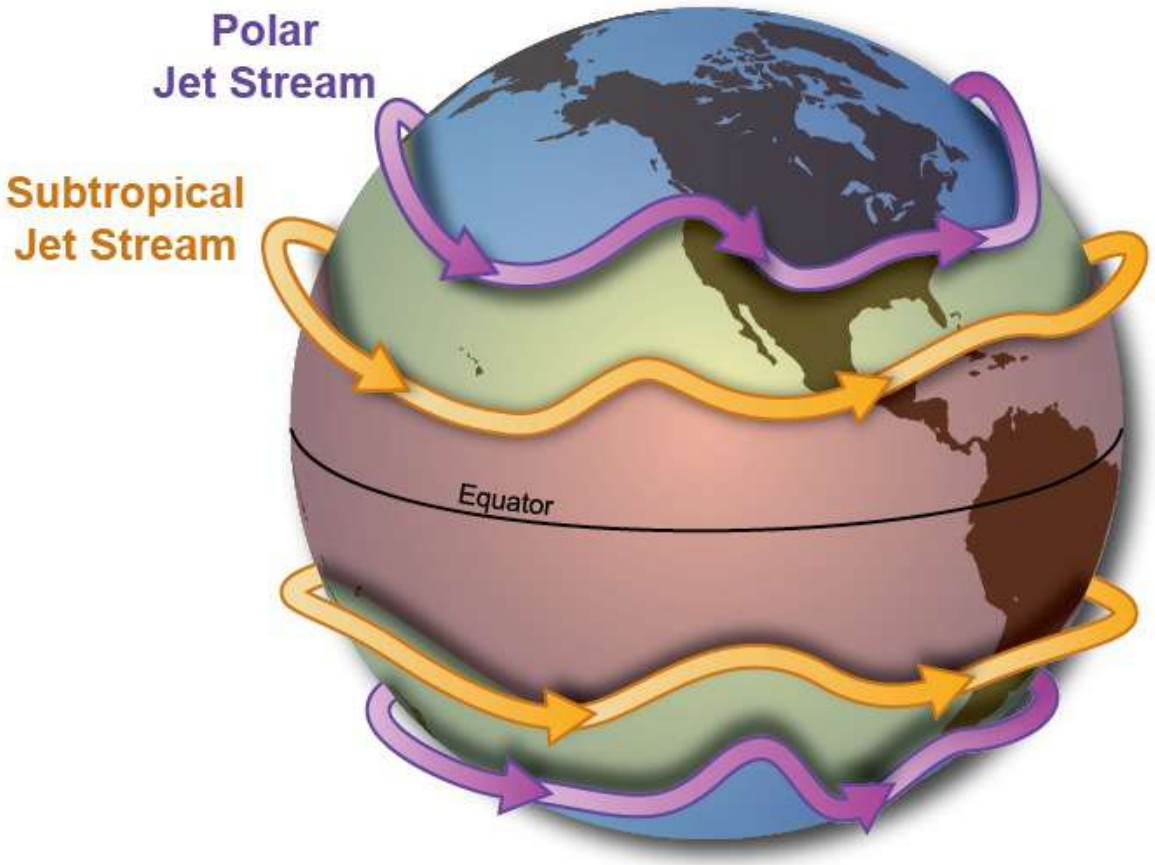
Jet streams occur in **both the Northern and Southern Hemispheres.**



- Jet streams occur in **both the Northern and Southern Hemispheres.**

- Extra-tropical cyclones **may not always have an eye.**

- **Eye** :It is warmer and not colder for a tropical cyclone. The warmer temperature is what drives the storm

Note : Tropical cyclones are characterized and driven by the release of large amounts of latent heat of condensation as moist air is carried upwards and its water vapor condenses. This heat is distributed vertically, around the center of the storm. Thus, at any given altitude (except close to the surface where water temperature dictates air temperature) the environment inside the cyclone is warmer than its outer surroundings.

Eye :It is warmer and not colder for a tropical cyclone.
The warmer temperature is what drives the storm.

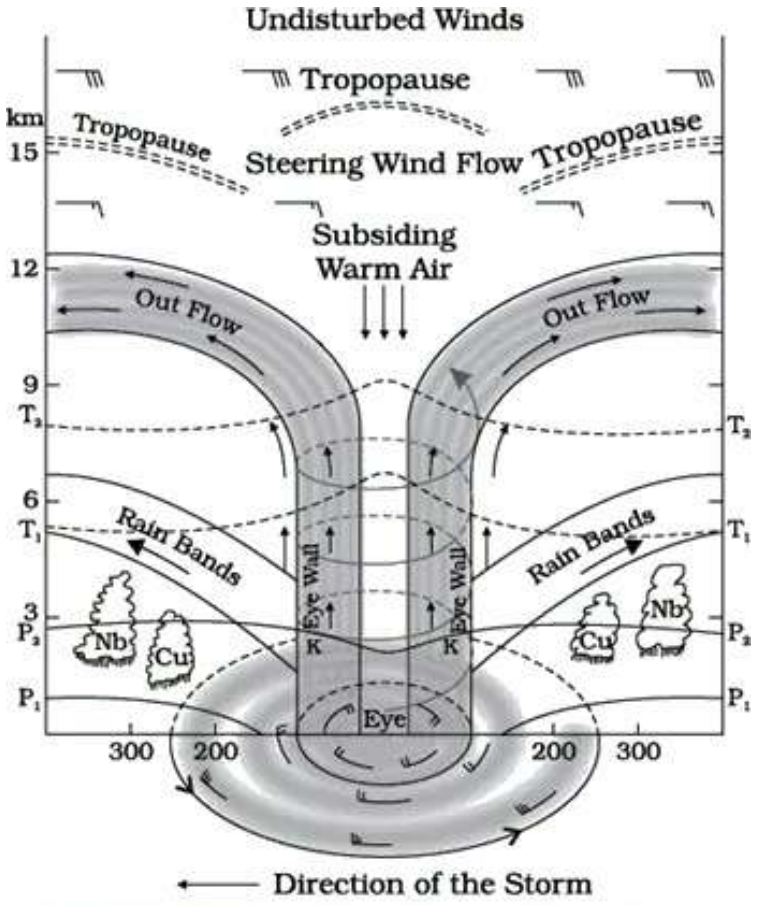
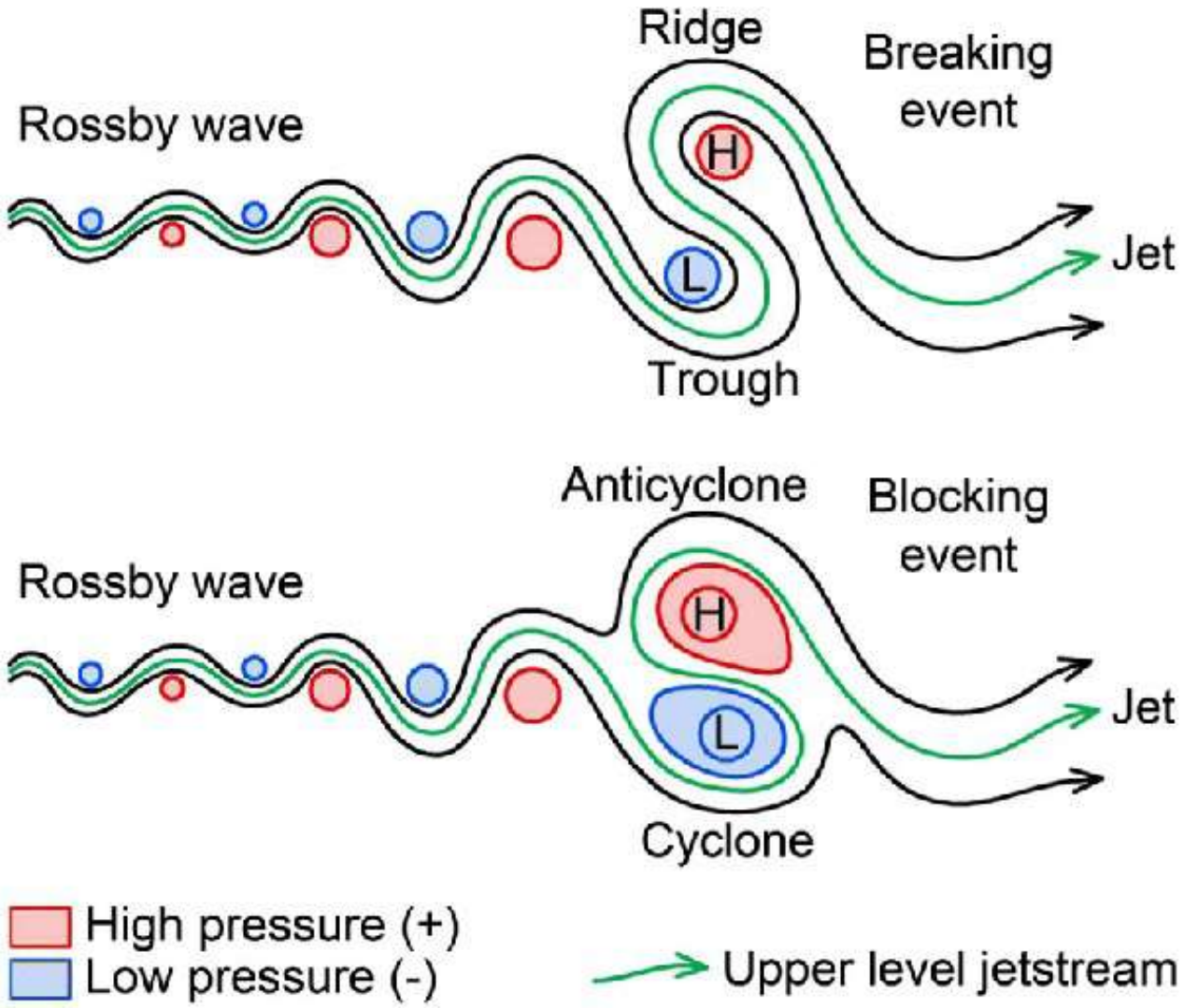
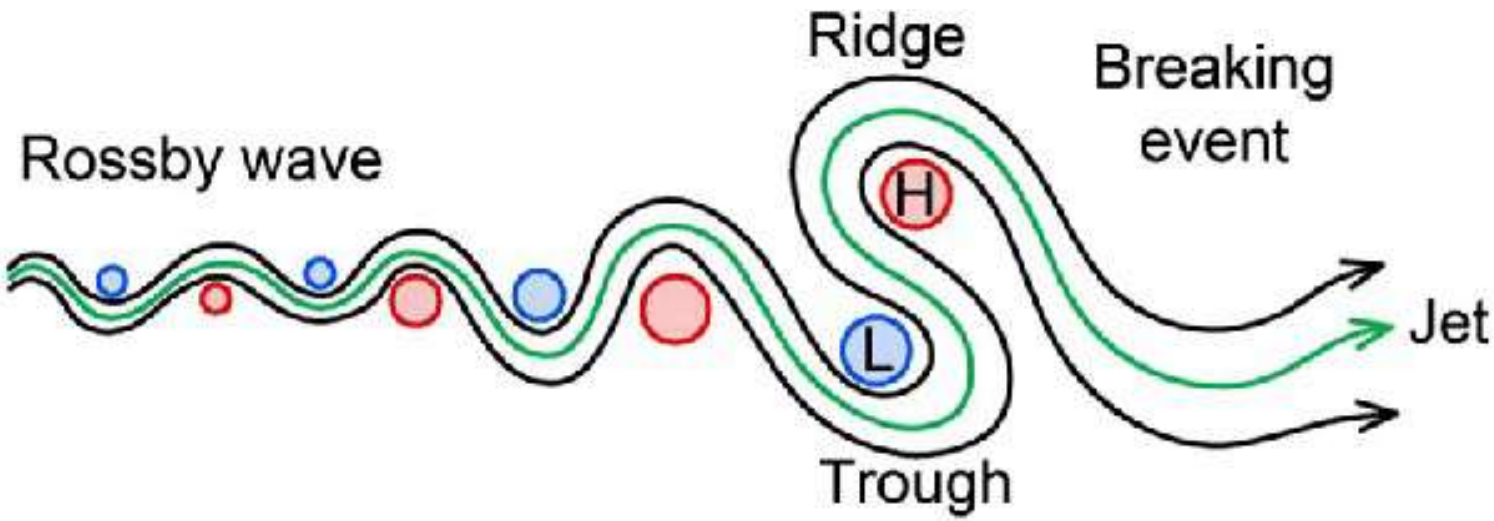


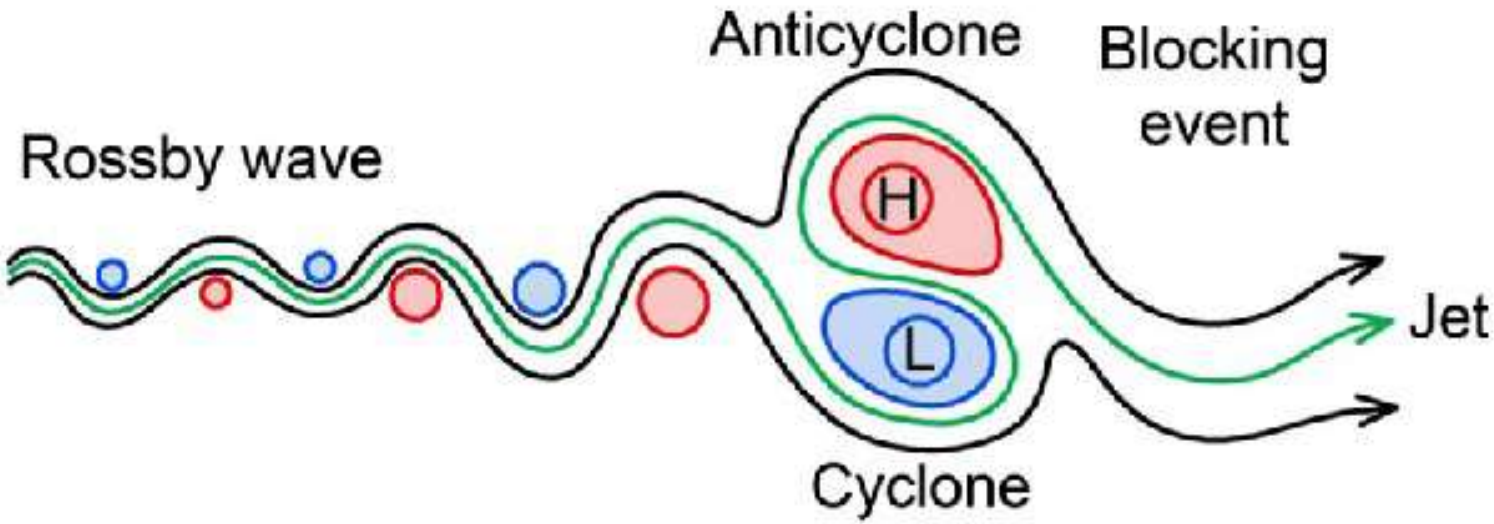
Fig: Vertical section of the tropical cyclone

Note: Latent Heat of Condensation

Additional Information – Jetstreams







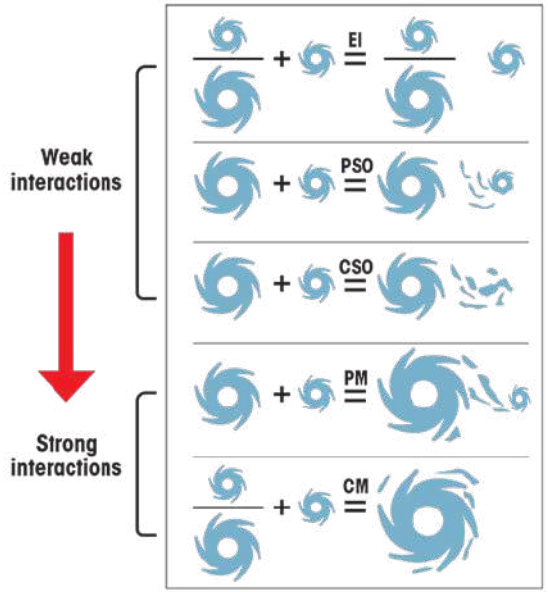
High pressure (+)
Low pressure (-)

Upper level jetstream

Medicanes


ATLANTIC OCEAN
FRANCE
SLOVENIA
CROATIA
Sea of Azov
Black Sea
Bosphorus
Ligurian Sea
Gulf of Lion
ITALY
Adriatic Sea
Strait of Otranto
ALBANIA
Corsica
Sardinia
Tyrrhenian Sea
Thracian Sea
Sea of Marmara
SPAIN
PORTUGAL
Balearic Sea
Balearic Islands
GREECE
Aegean Sea
Dardanelles
TURKEY
MEDITERRANEAN
Sicily
Ionian Sea
Myrtoan Sea
Strait of Messina
Sea of Sicily
Strait of Gibraltar
Alboran Sea
MALTA
SEA
Sea of Crete
Crete
Gulf of Antalya
Cyprus
SYRIA
Gulf of Gabes
Libyan Sea
Levantine Sea
LEBANON
ALGERIA
TUNISIA
MOROCCO
ISRAEL
Gulf of Sidra
LIBYA
EGYPT
Red Sea

The Fujiwhara Effect is any interaction between tropical storms formed around the same time in the same ocean region with their centres or eyes at a distance of less than 1,400 km, with intensity that could vary between a depression (wind speed under 63 km per hour) and a super typhoon (wind speed over 209 km per hour).



Elastic Interaction (EI): Interaction of vortices (storms) of same or different sizes, resulting in changes only in the direction of motion. This is the most commonly seen interaction

Partial Straining-Out (PSO): Interaction of vortices of unequal sizes. Part of the smaller vortex lost to the atmosphere.

Complete Straining-Out (CSO): Interaction of vortices of unequal sizes. The smaller vortex completely lost to the atmosphere

Partial Merger (PM): Interaction of vortices of unequal sizes Part of the smaller vortex merged to the bigger vortex

Complete Merger (CM): Interaction of vortices of same or different sizes, resulting in complete merger of both the storms

Q) Consider the following statements:

1) Jet streams occur in the Northern Hemisphere only.
2) Only some cyclones develop an eye.
3) The temperature inside the eye of a cyclone is nearly 10°C lesser than that of the surroundings.

Which of the statements given above is/are correct?

a) 1 only
b) 2 and 3 only
c) 2 only
d) 1 and 3 only

Q) In the South Atlantic and South-Eastern Pacific regions in tropical latitudes, cyclone does not originate. What is the reason? (2015)

a) Sea surface temperatures are low

b) Inter-tropical Convergence Zone seldom occurs

c) Coriolis force is too weak

d) Absence of land in those regions

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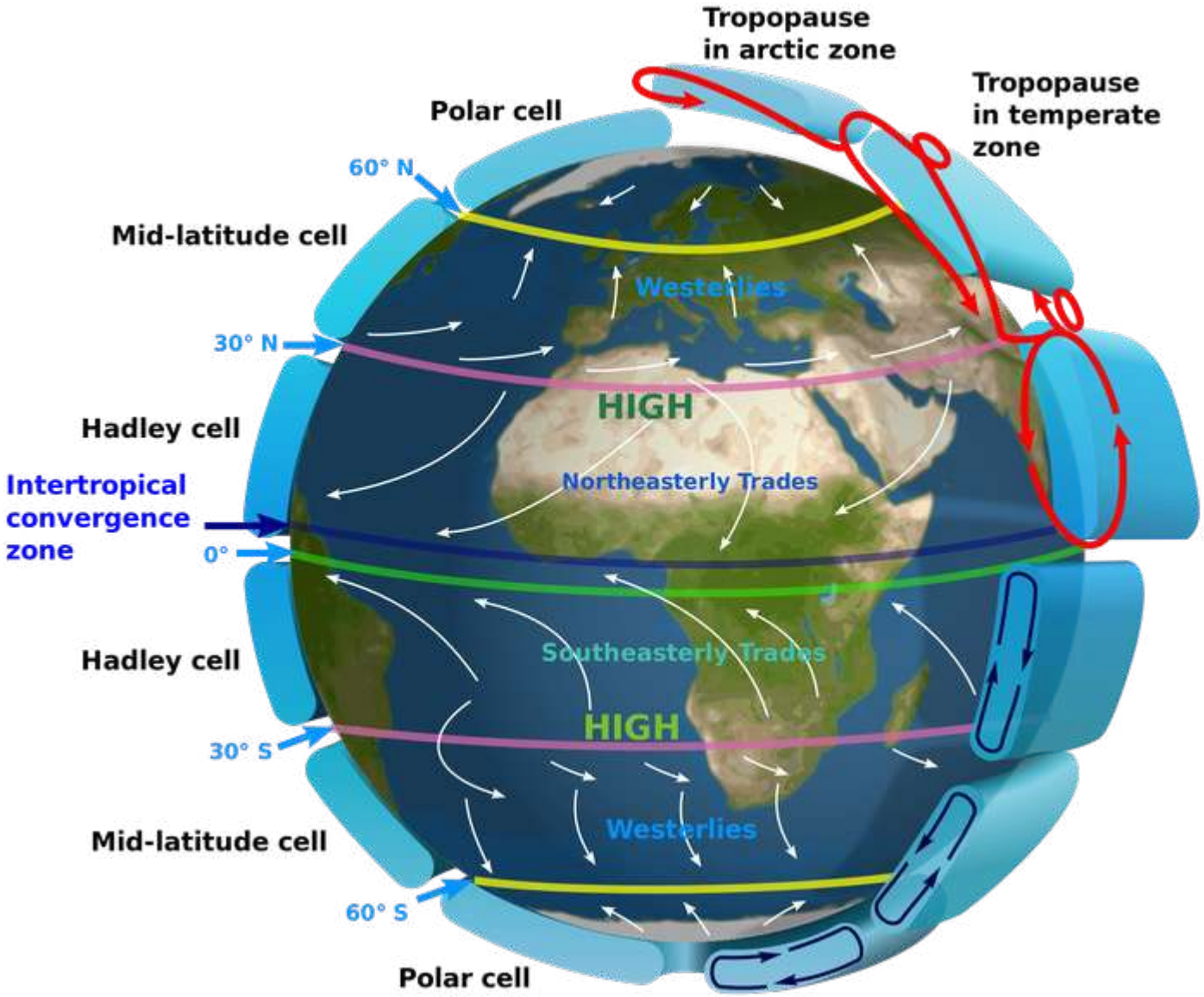
d) Absence of land in those regions

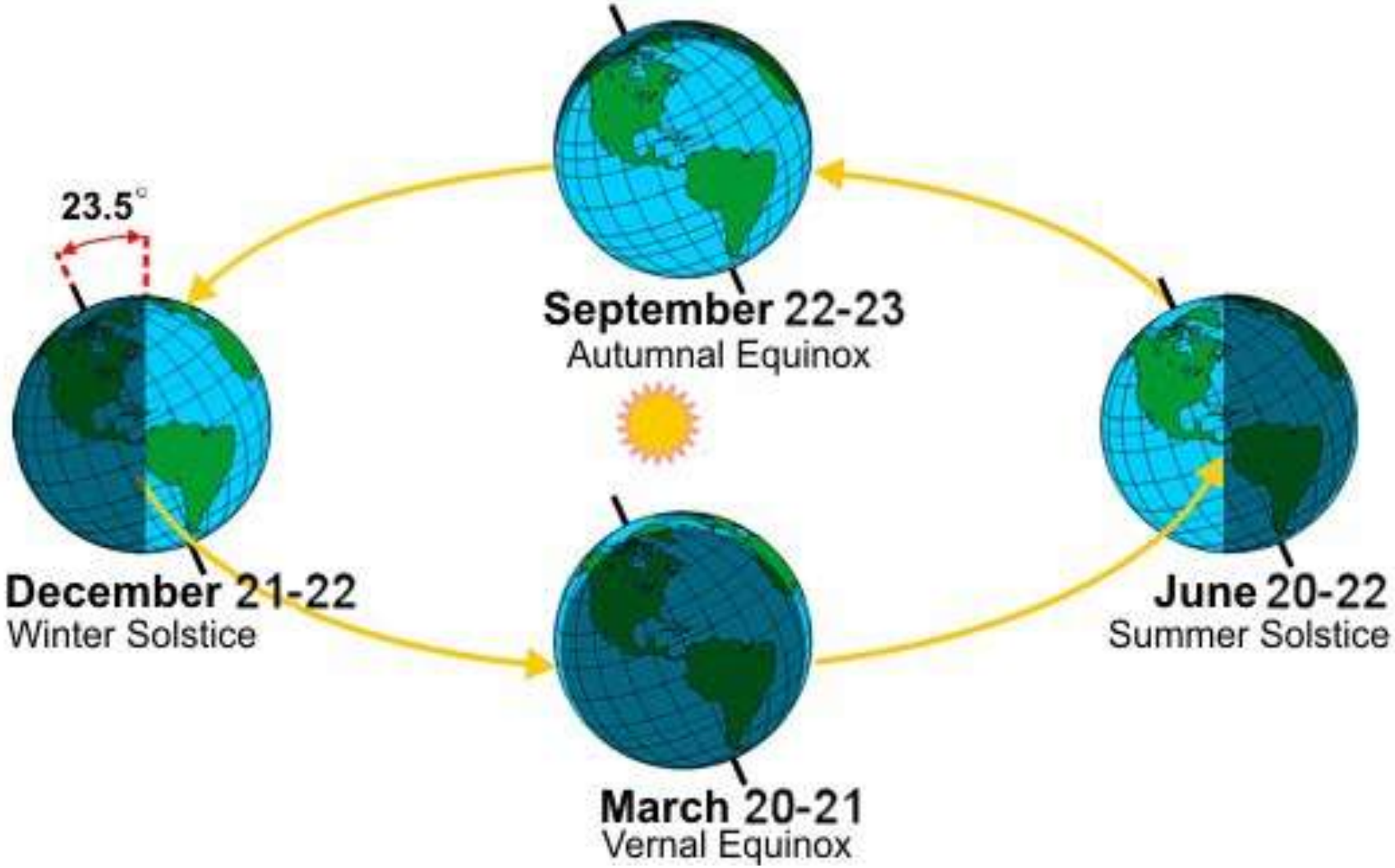
- The conditions favourable for the formation and intensification of tropical storms are:
  - **Large sea surface with temperature higher than 27° C;**
  - Presence of the Coriolis force; (
  - Small variations in the vertical wind speed;
  - A preexisting weak- low-pressure area or low-levelcyclonic circulation;
  - Upper divergence above the sea level system.

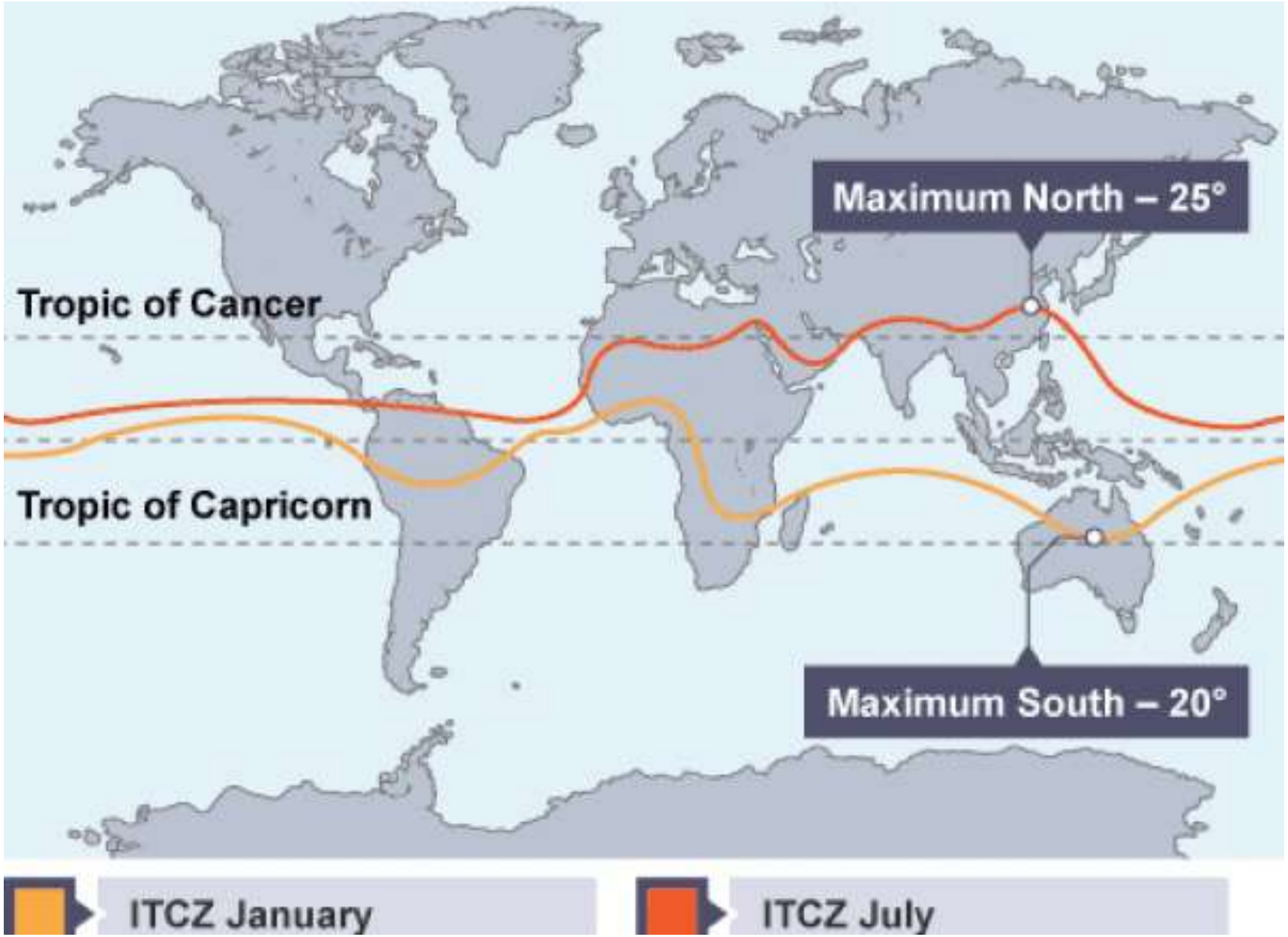
Tropical cyclone formation also requires a trigger that initiates convection. One such trigger is the intertropical convergence zone (ITCZ), where warm sea-surface temperatures and convergence of surface trade winds foster convection (rising air). ITCZ does not shift Towards South Atlantic and South-Eastern Pacific regions in tropical latitudes.

.

- **Intertropical Convergence Zone**
  - The Intertropical Convergence Zone known by sailors as the **doldrums or the calms** because of its monotonous windless weather, is the area where the northeast and the southeast trade winds converge.
  - It encircles Earth near the thermal equator though its specific position varies seasonally. **When it lies near the geographic Equator, it is called the** near-equatorial trough.
  - Where the ITCZ is drawn into and merges with a monsoonial circulation, it is sometimes referred to as a monsoon trough, a usage that is more common in Australia and parts of Asia.


Tropopause
in arctic zone
Tropopause
in temperate
zone
Polar cell
60° N
Mid-latitude cell
Westerlies
30° N
HIGH
Hadley cell
Northeasterly Trades
Intertropical
convergence
zone
0°
Hadley cell
Southeasterly Trades
HIGH
30° S
Mid-latitude cell
Westerlies
60° S
Polar cell


23.5°
September 22-23
Autumnal Equinox
December 21-22
Winter Solstice
June 20-22
Summer Solstice
March 20-21
Vernal Equinox


Maximum North – 25°
Tropic of Cancer
Tropic of Capricorn
Maximum South – 20°
ITCZ January
ITCZ July

Motions of the Earth

Q) Variations in the length of daytime and nighttime from season to season are due to (2013)

a) the earth's rotation on its axis

b) the earth's revolution round the sun in an elliptical manner

c) latitudinal position of the place

d) revolution of the earth on a tilted axis

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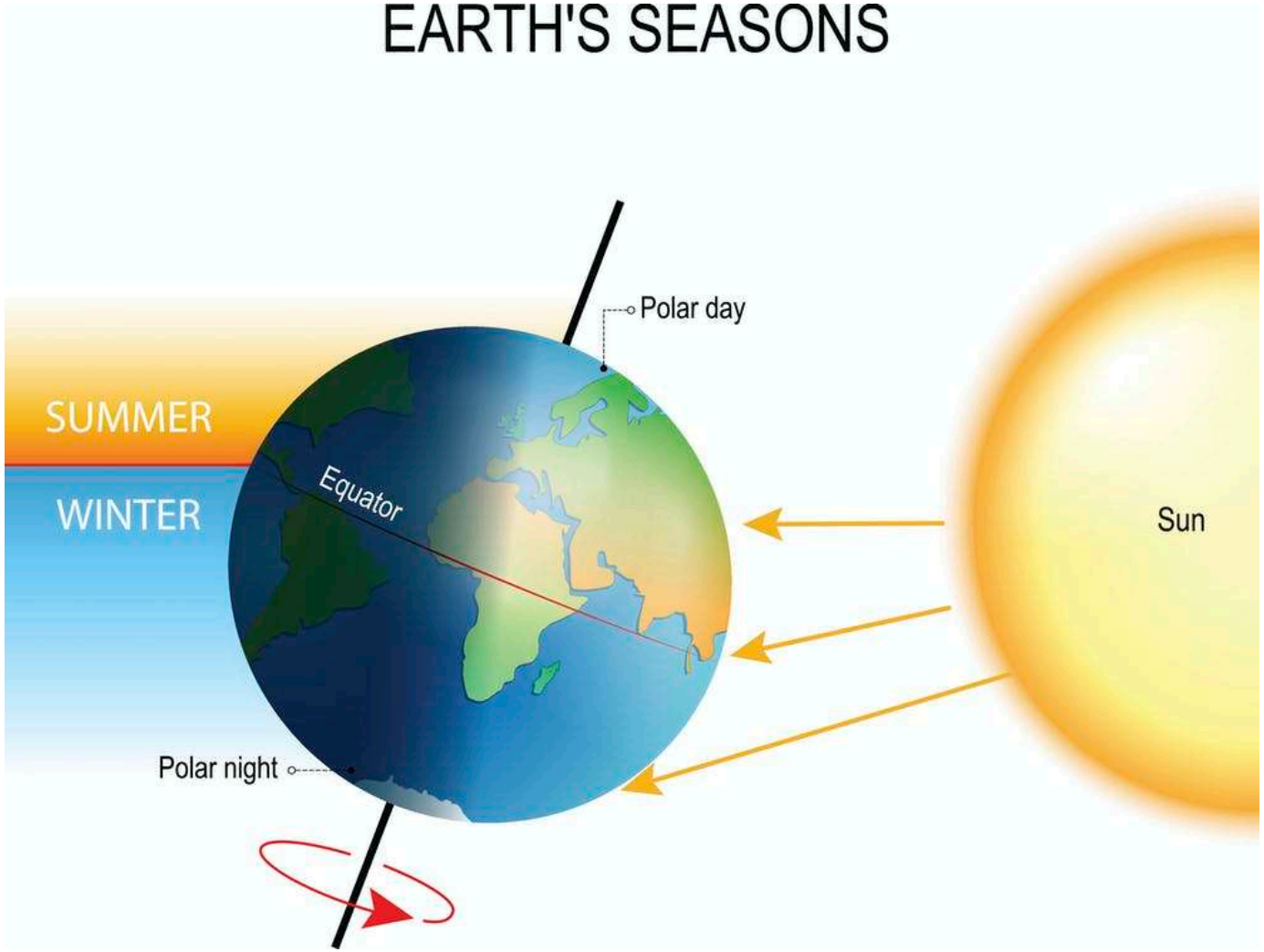
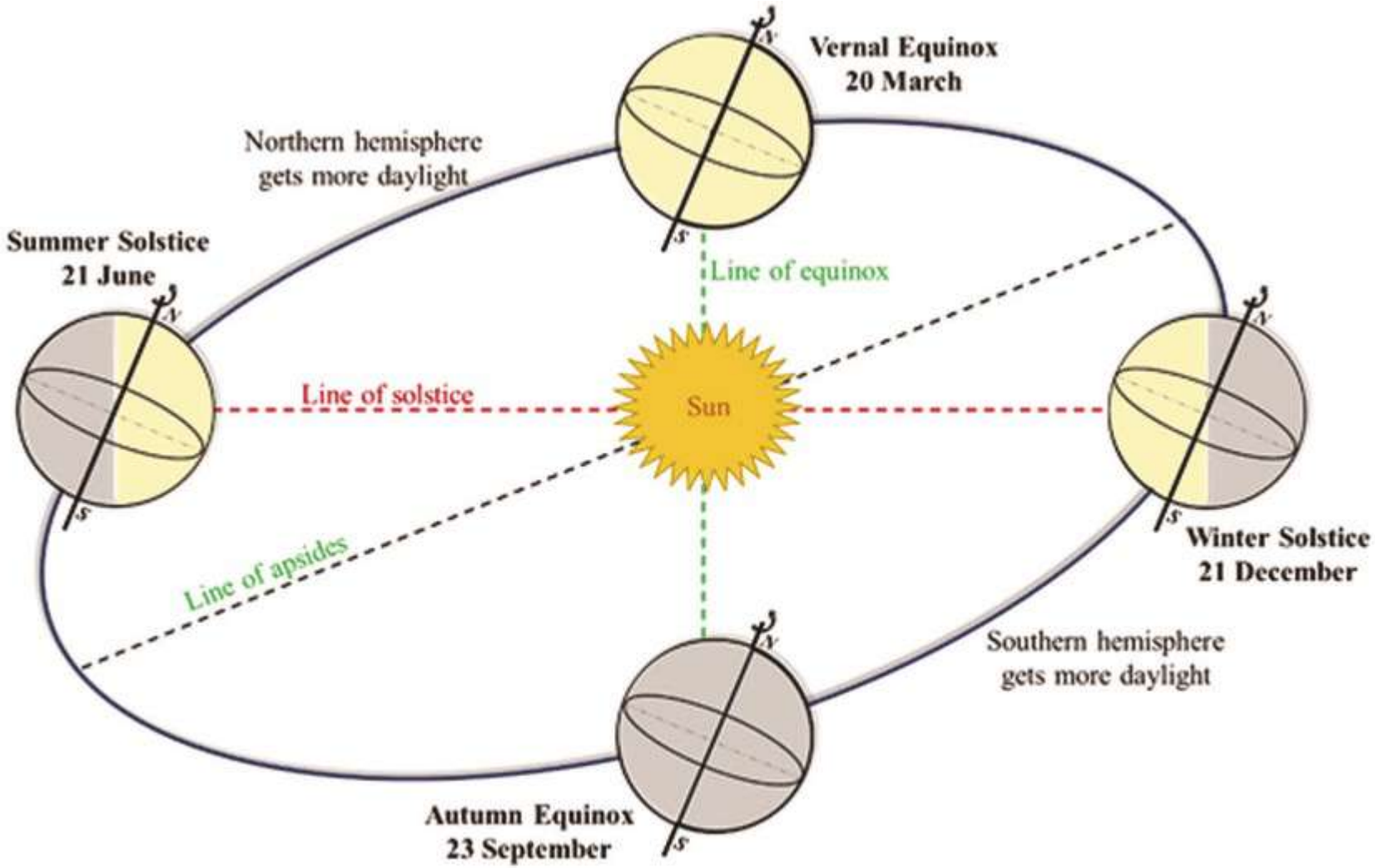

EARTH'S SEASONS
Polar day
SUMMER
WINTER
Equator
Sun
Polar night


Vernal Equinox
20 March
Northern hemisphere
gets more daylight
Summer Solstice
21 June
Line of equinox
Line of solstice
Sun
Line of apsides
Winter Solstice
21 December
Southern hemisphere
gets more daylight
Autumn Equinox
23 September
N
S

- Variations in the length of daytime and nighttime from season to season are due to the **revolution of the earth on a tilted axis.**
- On its path around the sun, t**he earth's axis always remains inclined to one side.** Because of this constant inclination in one direction, the Northern Hemisphere remains inclined towards the sun or faces the sun during one half of the year. Therefore, a **larger part of this hemisphere receives sunlight.**
- In contrast, the Southern Hemisphere is away from the sun. It, therefore, has shorter days and longer nights. During the other half of the year, the Southern Hemisphere is inclined towards the sun. Hence, it **has longer days and shorter nights.**

Q) Variations in the length of daytime and night time from season to season are due to (2013)

a) the earth's rotation on its axis

b) the earth's revolution round the sun in an elliptical manner

c) latitudinal position of the place

d) revolution of the earth on a tilted axis

Q) On 21st June, the Sun (2019)

a) does not set below the horizon at the Arctic Circle

b) does not set below the horizon at Antarctic Circle

c) shines vertically overhead at noon on the Equator

d) shines vertically overhead at the Tropic of Capricorn

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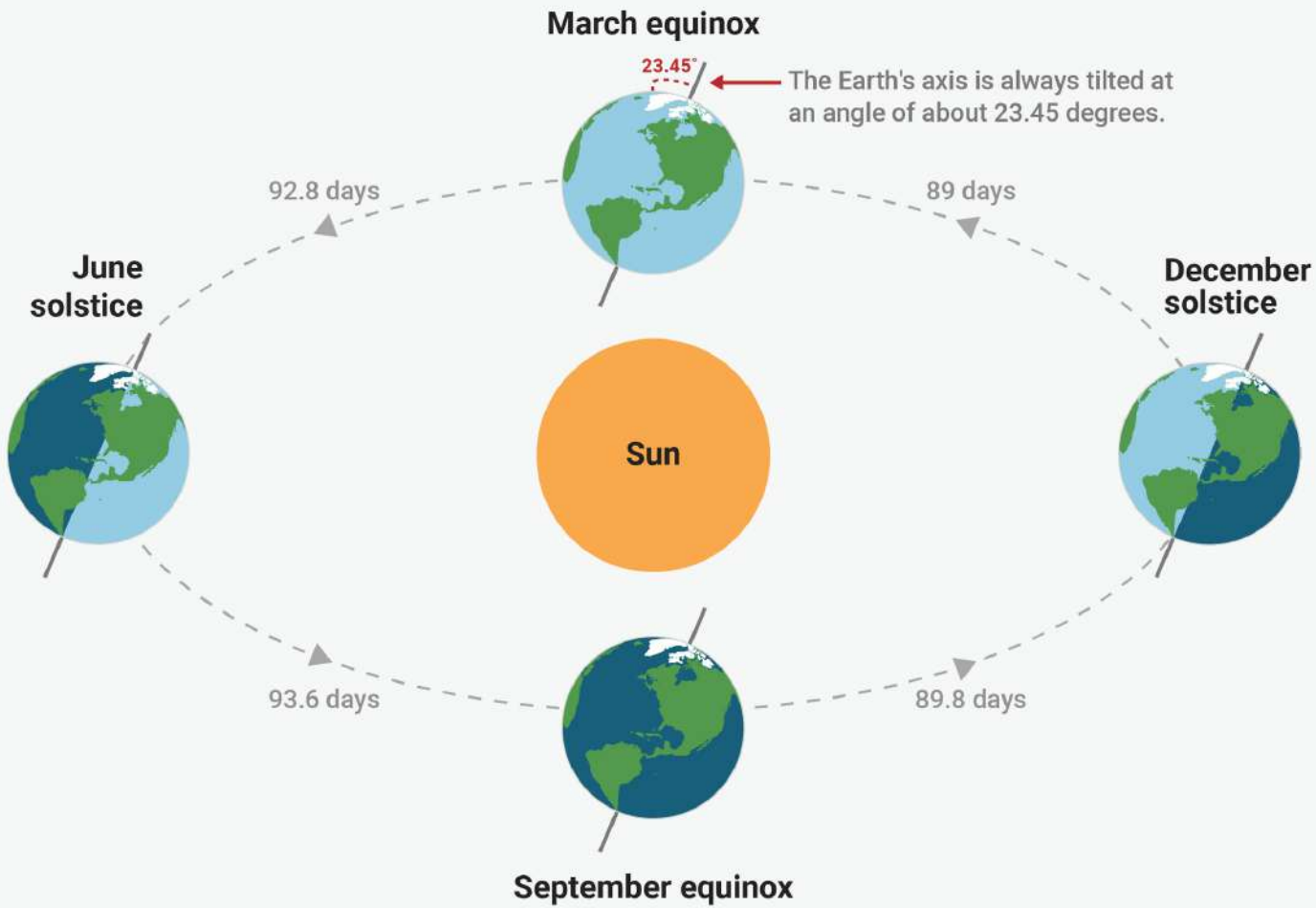
Earth's equinoxes and solstices



Source: TimeAndDate.com

BUSINESS INSIDER

- The **North Pole is inclined towards the sun and the places beyond the Arctic Circle** experience **continuous daylight for about six months**.
- Since a large portion of the Northern Hemisphere is getting light from the sun, **it is summer in the regions north of the equator.** The longest day and the shortest night at these places occur on 21st June.

Q) On 21st June, the Sun

a) does not set below the horizon at the Arctic Circle

b) does not set below the horizon at Antarctic Circle

c) shines vertically overhead at noon on the Equator

d) shines vertically overhead at the Tropic of Capricorn

Q. In the northern hemisphere, the longest day of the year normally occurs in the : (2022)

a) First half of the month of June

b) Second half of the month of June

c) First half of the month of July

d) Second half of the month of July

Q. In the northern hemisphere, the longest day of the year normally occurs in the : (2022)

a) First half of the month of June

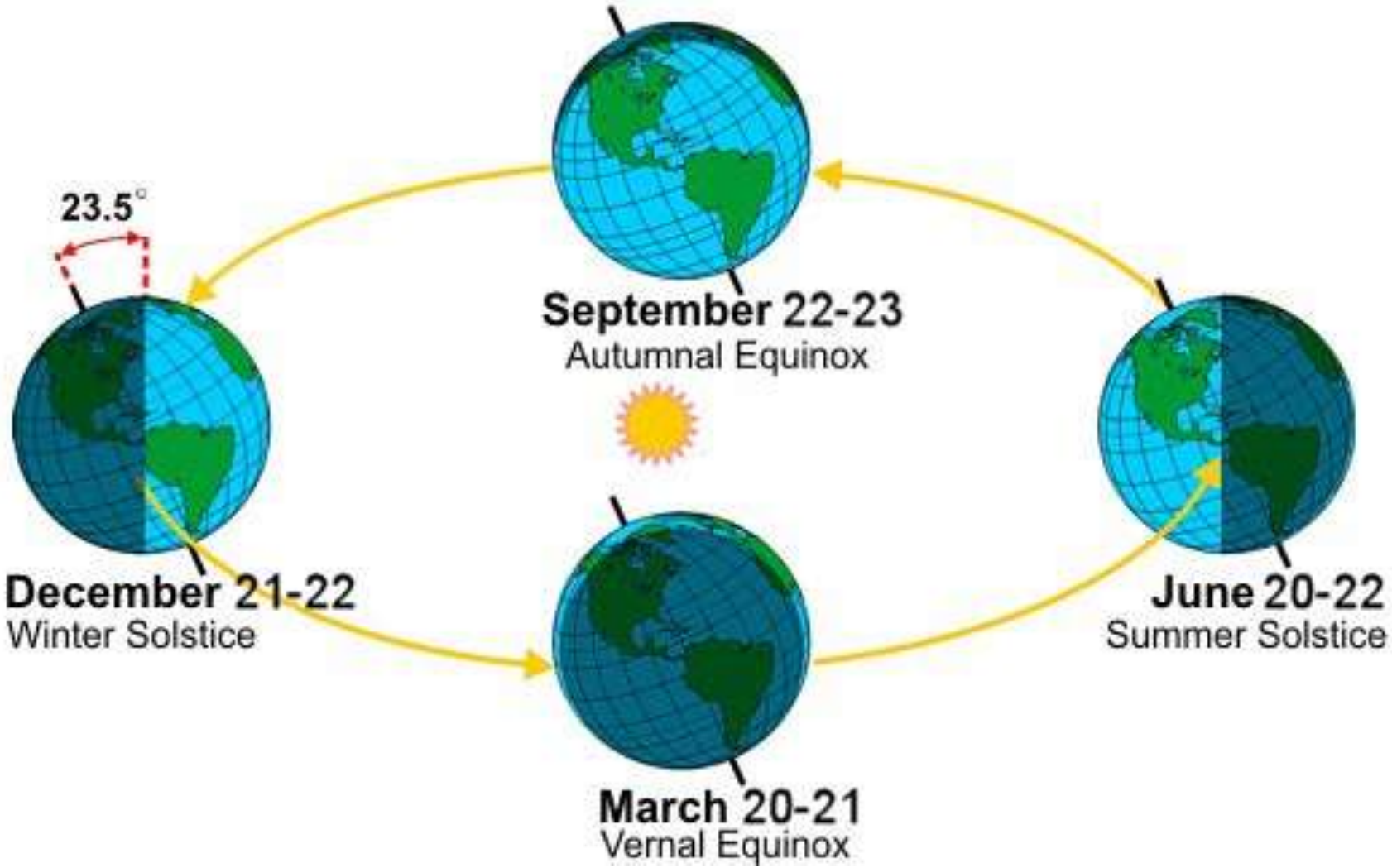
b) Second half of the month of June

c) First half of the month of July

d) Second half of the month of July

The summer solstice, also known as estival solstice or midsummer, occurs when one of Earth's poles has its maximum tilt toward the Sun

During the Northern Hemisphere's summer solstice—which always falls around June 21—the Southern Hemisphere gets its winter solstice.


23.5°
September 22-23
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Composition and Structure of Atmosphere

Q. The jet aircrafts fly very easily and smoothly in the lower stratosphere. What could be the appropriate explanation? (2011)

1. There are no clouds or water vapour in the lower stratosphere.
2. There are no vertical winds in the lower stratosphere.

Which of the statements given above is/are correct in this context?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

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- The **clouds and water vapour are limited to the troposphere.** They are not present in the stratosphere.
- Lower stratosphere, **unlike the troposphere, is also free from any vertical winds.**

Application Based Question

Q30) Consider the following: (2013)

1) Electromagnetic radiation
2) Geothermal energy
3) Gravitational force
4) Plate movements
5) Rotation of the earth
6) Revolution of the earth

Which of the above are responsible for bringing dynamic changes on the surface of the earth?

a) 1, 2, 3 and 4 only
b) 1, 3, 5 and 6 only
c) 2, 4, 5 and 6 only
d) 1, 2, 3, 4, 5 and 6

Q) Consider the following: (2013)

1) Electromagnetic radiation

2) Geothermal energy

3) Gravitational force

4) Plate movements - Start from this

5) Rotation of the earth

6) Revolution of the earth

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b) 1, 3, 5 and 6 only

c) 2, 4, 5 and 6 only

d) 1, 2, 3, 4, 5 and 6

1) Geothermal energy- Volcanoes – Mid Oceanic Ridges
2) Gravitational force – Tides – Gravitational Pull of Moon – Coastal Erosion
3) Plate movements –Earthquakes
4) Revolution of the earth - responsible for seasons + monsoon + landslides and soil erosion – Changes in surface

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2) Geothermal energy
3) Gravitational force
4) Plate movements
5) Rotation of the earth
6) Revolution of the earth

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OCEANOGRAPHY

Q) Consider the following factors: (2012)

1. Rotation of the Earth
2. Air pressure and wind
3. Density of ocean water
4. Revolution of the Earth

Which of the above factors influence the ocean currents?

a) 1 and 2 only
b) 1, 2 and 3
c) 1 and 4
d) 2, 3 and 4

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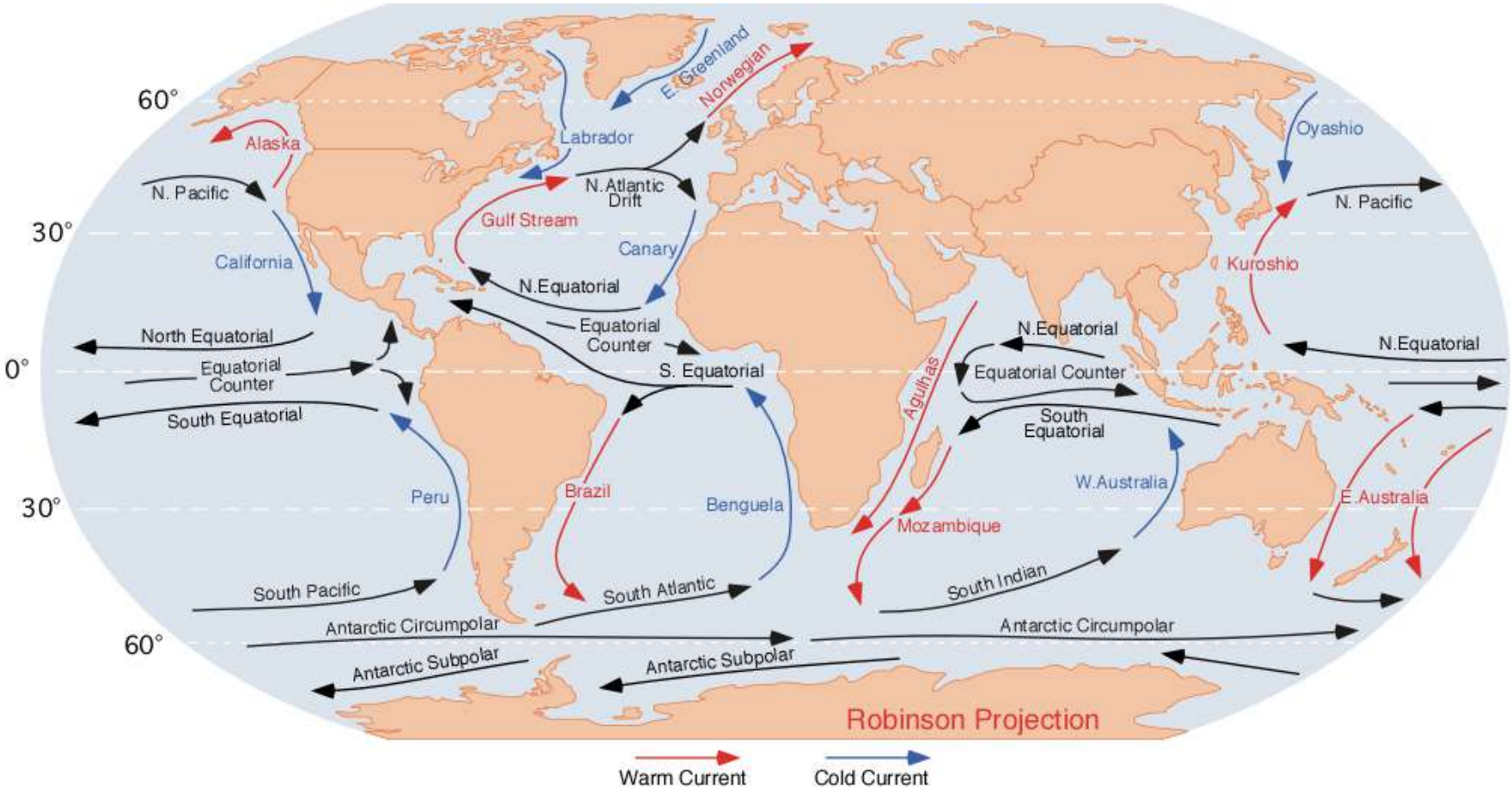
Ocean Currents



- **Factors affecting Ocean Currents**
- **Let us understand with relevant examples**

I. Salinity difference :

Point - area of high salinity will have a greater density than the area of low salinity.

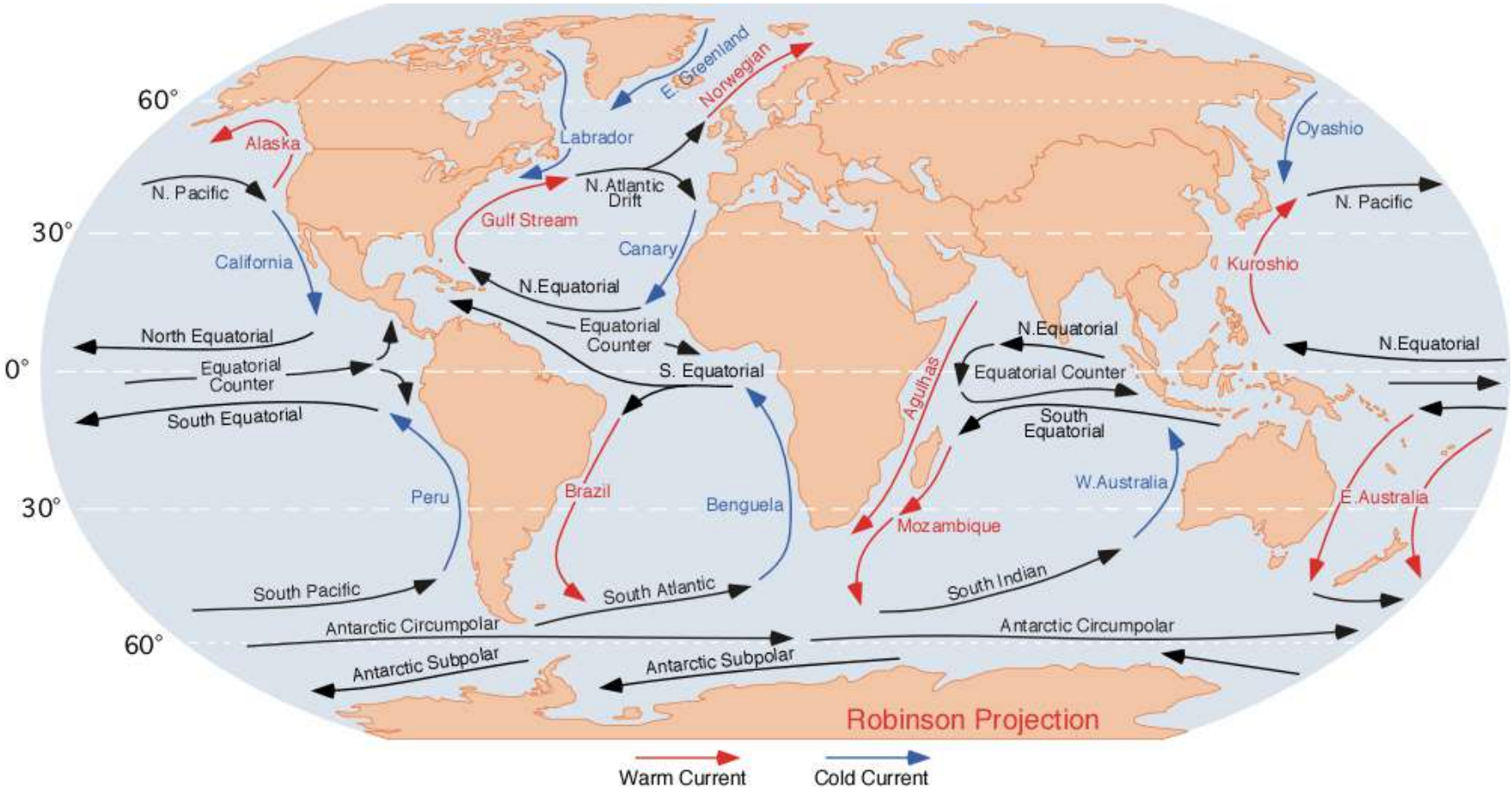
I. Density :

Point : Denser water tends to sink, while relatively lighter water tends to rise.

I. Physiography:

Example : Atlantic South Equatorial Current travels westward along the equator until it reaches South America. At Brazil, some of it goes north and some goes south.

Ocean Currents



- **Factors affecting Ocean Currents**
- **Let us understand with relevant examples**

I. Atmospheric Pressure and Planetary Winds :

Example - Gulf Stream in the Atlantic and the Kuroshio in the Pacific move in northeastern direction under the influence of the westerlies.

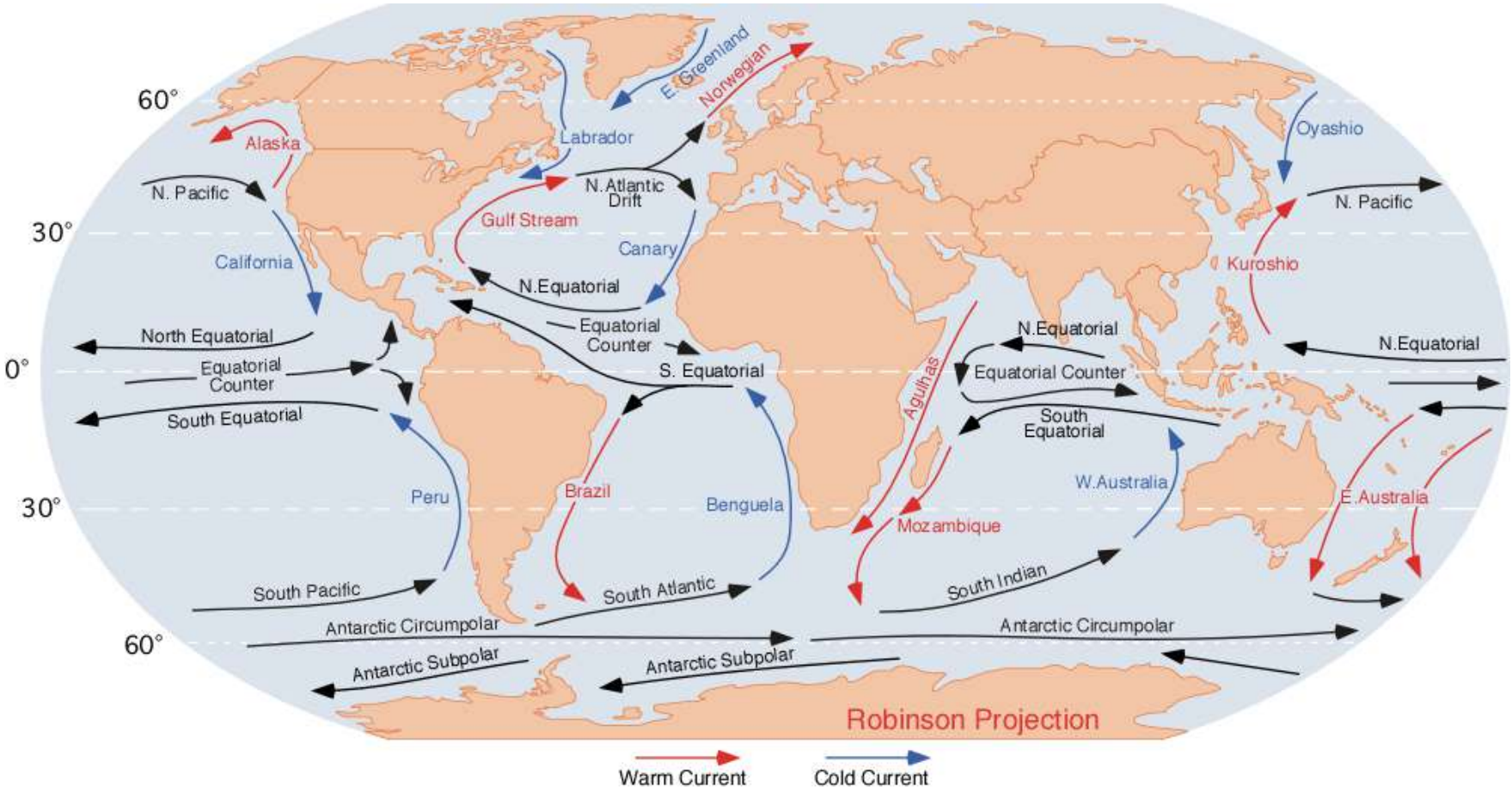
I. Coriolis Force - Rotation of the Earth :

Point - Clockwise direction in the northern hemisphere and in Anti-Clockwise direction in the southern hemisphere

I. Temperature difference :

Example : Equator the ocean water is about 8 cm higher in level than in the Middle latitudes.

Ocean Currents



Q) Consider the following factors: (2012)

1. Rotation of the Earth
2. Air pressure and wind
3. Density of ocean water
4. Revolution of the Earth

Which of the above factors influence the ocean currents?

a) 1 and 2 only

b) 1, 2 and 3

c) 1 and 4

d) 2, 3 and 4

Q) The most important fishing grounds of the world are found in the regions where (2013)

a) Warm and cold atmospheric currents meet

b) Rivers drain out large amounts of freshwater into the sea

c) Warm and cold oceanic currents meet

d) Continental shelf is undulating

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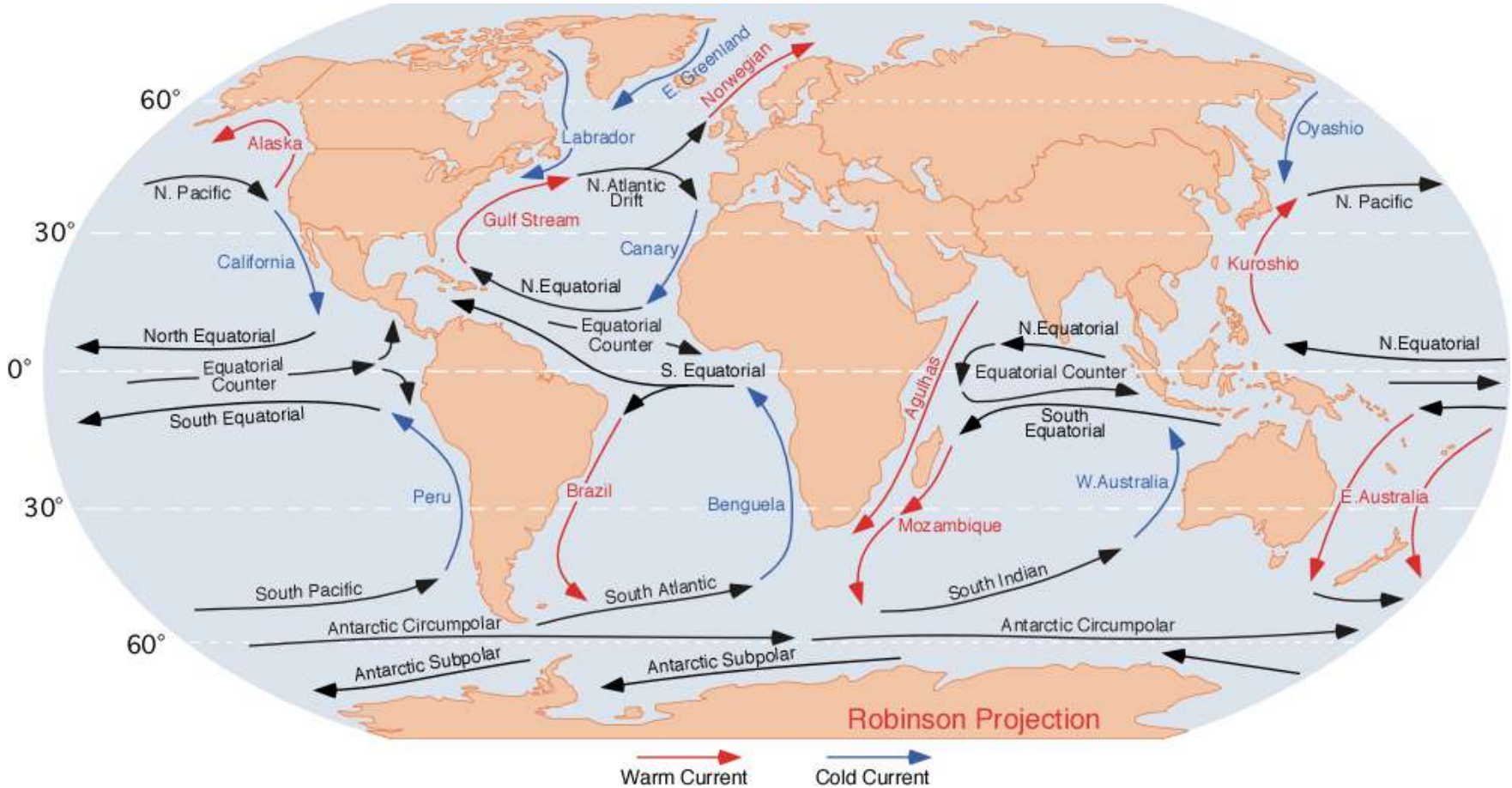
- Planktons are **abundant where warm and cold currents meet. That make these areas important fishing grounds of the world.**

- **Note : Best fishing Zones**
- Oyoshio – Kuroshio Current
- Brazilian – Falkland Current
- Labrador – Gulf Stream – New Foundland
- **Still Water** – Gyres – North Atlantic Ocean


60°
30°
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30°
60°
Alaska
N. Pacific
California
Labrador
E. Greenland
Norwegian
N. Atlantic Drift
Gulf Stream
Canary
N.Equatorial
North Equatorial
Equatorial Counter
South Equatorial
Peru
Brazil
Benguela
S. Equatorial
Equatorial Counter
South Pacific
South Atlantic
Antarctic Circumpolar
Antarctic Subpolar
Antarctic Subpolar
Agulhas
Mozambique
Oyashio
N. Pacific
Kuroshio
N.Equatorial
Equatorial Counter
South Equatorial
N.Equatorial
W.Australia
E.Australia
South Indian
Antarctic Circumpolar
Robinson Projection
Warm Current
Cold Current

- **Additional Information :**
- Phytoplanktons need **both sunlight and nutrients (such as nitrate and phosphate) to be able to photosynthesize**.
- **Sunlight is only available in the uppermost layers**.
- During photosynthesis, **the nutrients are quickly used up by phytoplankton so they are not available for long periods in the upper layers under normal circumstances**.
- This is indeed the case in tropical waters, **and as a result they are very unproductive**.
- To escape **this problem the seawater needs to be mixed regularly to bring the nutrient rich deep waters up to the sunlight zone where the phytoplankton can grow.**
- This is one of the reasons **why cold and warm currents convergence zones** [mixing happens – the collision of currents causes mixing] and **upwelling zones are very productive.**
- **Furthermore,** in surroundings where **atmospheric temperatures are often colder than oceanic temperatures, the top layers of the ocean are cooled by the atmosphere.**
- This increases the **density of the surface waters and causes them to sink and therefore causes mixing** [nutrient deficient water sinks and nutrient rich water is upwelled].
- Both of these factors play a role in **Icelandic waters, resulting in the very productive ocean environment around Iceland.**

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Q) What explains the eastward flow of the equatorial countercurrent? (2015)

a) The Earth's rotation on its axis

b) Convergence of the two equatorial currents

c) Difference in salinity of water

d) Occurrence of the belt of calm near the equator

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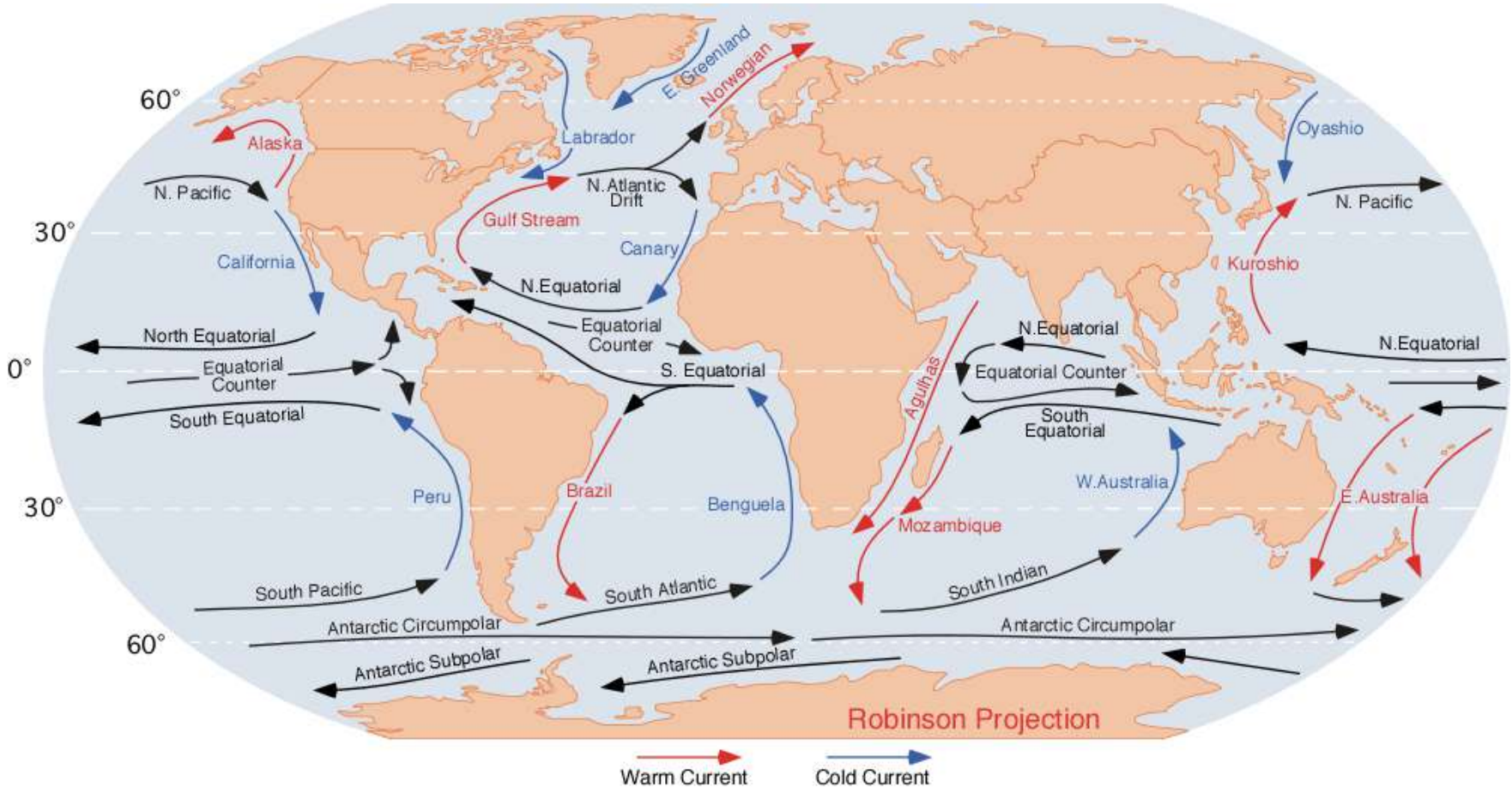
60°
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California
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Mozambique
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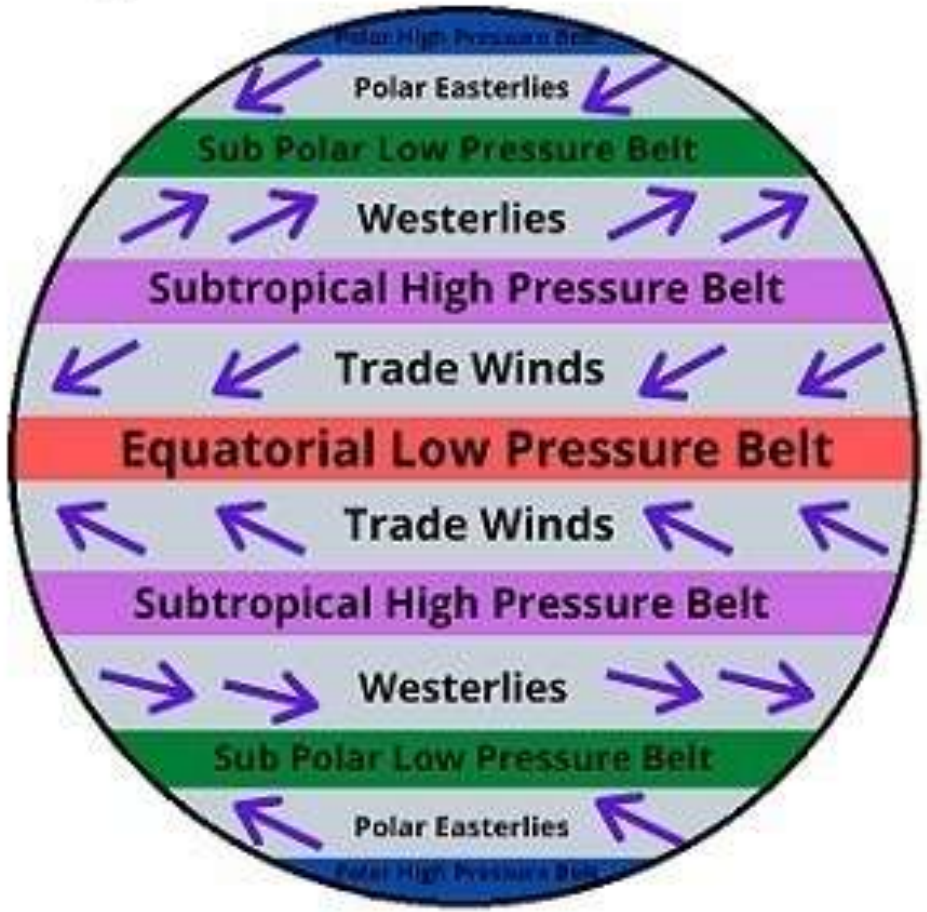
South Equatorial
N.Equatorial
W.Australia
E.Australia
South Indian
Antarctic Circumpolar
Robinson Projection
Warm Current
Cold Current

Pressure Belts and Planetary Winds



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Q) Consider the following statements: (2018)

1) Most of the world's coral reefs are in tropical waters.
2) More than one-third of the world's coral reefs are located in the territories of Australia, Indonesia and Philippines.
3) Coral reefs host far more number of animal phyla than those hosted by tropical rainforests.

Which of the statements given above is/are correct?

a) 1 and 2 only
b) 3 only
c) 1 and 3 only
d) 1, 2 and 3

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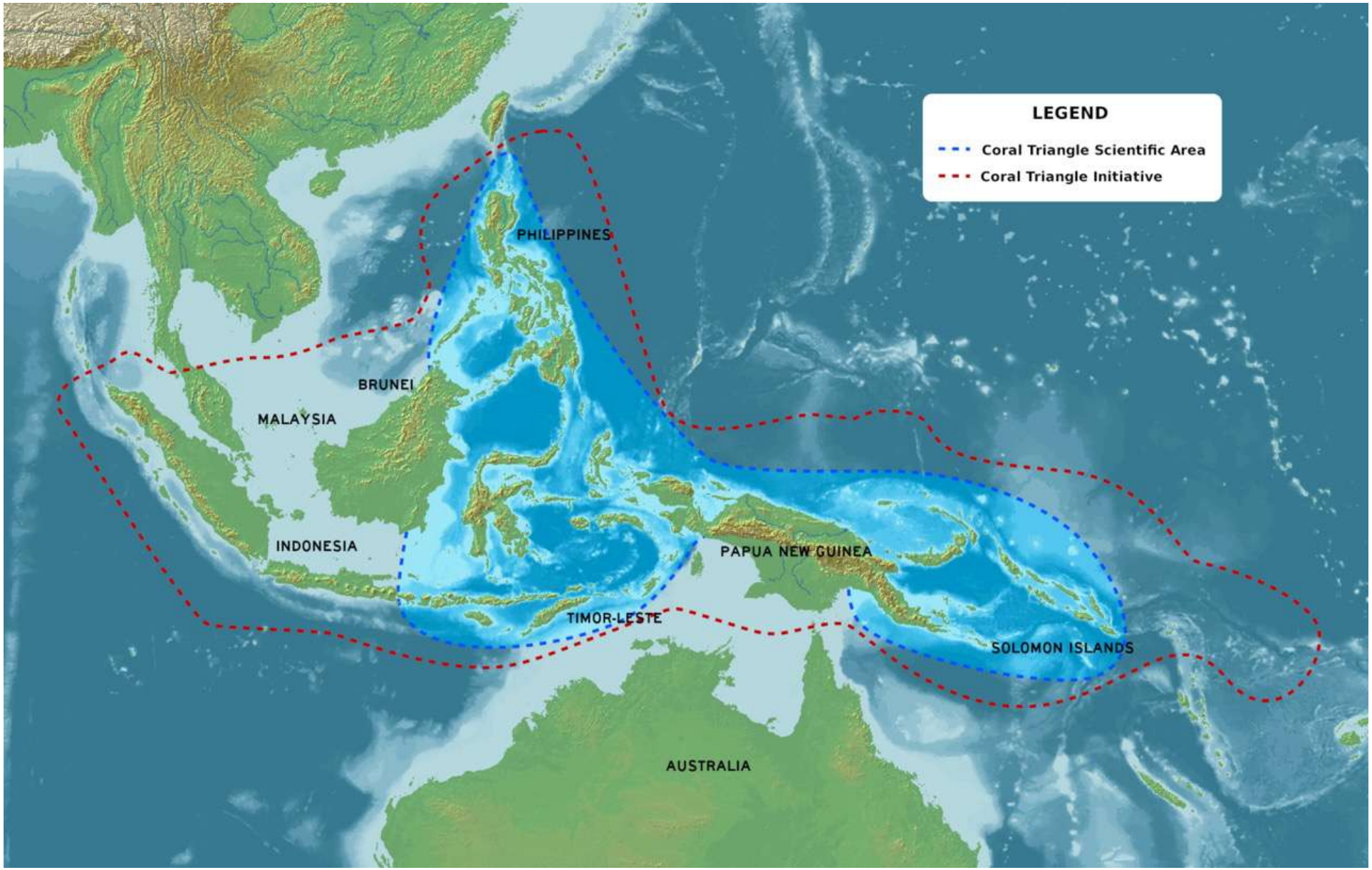
LEGEND
Coral Triangle Scientific Area
Coral Triangle Initiative
PHILIPPINES
BRUNEI
MALAYSIA
INDONESIA
PAPUA NEW GUINEA
TIMOR-LESTE
SOLOMON ISLANDS
AUSTRALIA

- Most coral reefs are located in tropical shallow waters less than 50 meters deep, in the western regions of the Indian ocean, Pacific Ocean and Greater Caribbean.

    - **Note :** The **Coral Triangle (CT) is a roughly triangular area in the tropical waters** around Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands and Timor-Leste. This area contains at least 500 species of reef-building corals in each ecoregion.

- **Global distribution of corals**
    - Australia-17%
    - Indonesia-16%
    - Philippines-9%
- 32 of the 34 recognised animal Phyla are found on coral reefs compared to only 9 Phyla in tropical rainforests.

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Q) With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct?

1) OMT is measured up to a depth of 26°C isotherm which is 129 meters in the south -western Indian Ocean during January –March.
2) OMT collected during January –March can be used in assessing whether the amount of rainfall in monsoon will be less or more than a certain long -term mean.

Select the correct using the code given below:

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- **The Hindu - Ocean mean temperature can better predict Indian summer monsoon. Compared with SST which has 60% success rate of predicting the Indian summer monsoon, OMT has 80% success rate.**

- The energy **created by the motion of molecules in the ocean is measured through Ocean Temperature.**
- Ocean Mean Temperature(OMT) is **measured up to a depth of 26 degrees isotherm.** It is measured with the help of satellites that orbit the earth.
- In the Indian ocean, OMT is analyzed by measuring **the ocean thermal energy during the period from January to March.**
- The 26 degrees isotherm is seen at **depths varying from 50–100 meters.**
- During **January–March**, the mean 26 degrees C isotherm depth in the Southwestern Indian Ocean **is 59 meters.**

- The **temperature of the ocean water on the surface is known as Sea Surface Temperature**
- **Sea surface temperature (SST)** is routinely used for predicting whether the total amount of rainfall that India receives during the monsoon season. Compared with SST which has 60% success rate of predicting the Indian summer monsoon, OMT has 80% success rate.

- **Ocean mean temperature(OMT) is a better indicator of monsoon rainfall than sea surface temperature (SST) because it measures ocean thermal.**

- This worked because the sea surface temperature is restricted to the skin of the ocean which doesn't have the kind of impact as that of the heat content of the upper ocean.

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Q) Tides occur in the oceans and seas due to which among the following? (2015)

1) Gravitational force of the Sun

2) Gravitational force of the Moon

3) Centrifugal force of the Earth

Select the correct answer using the code given below:

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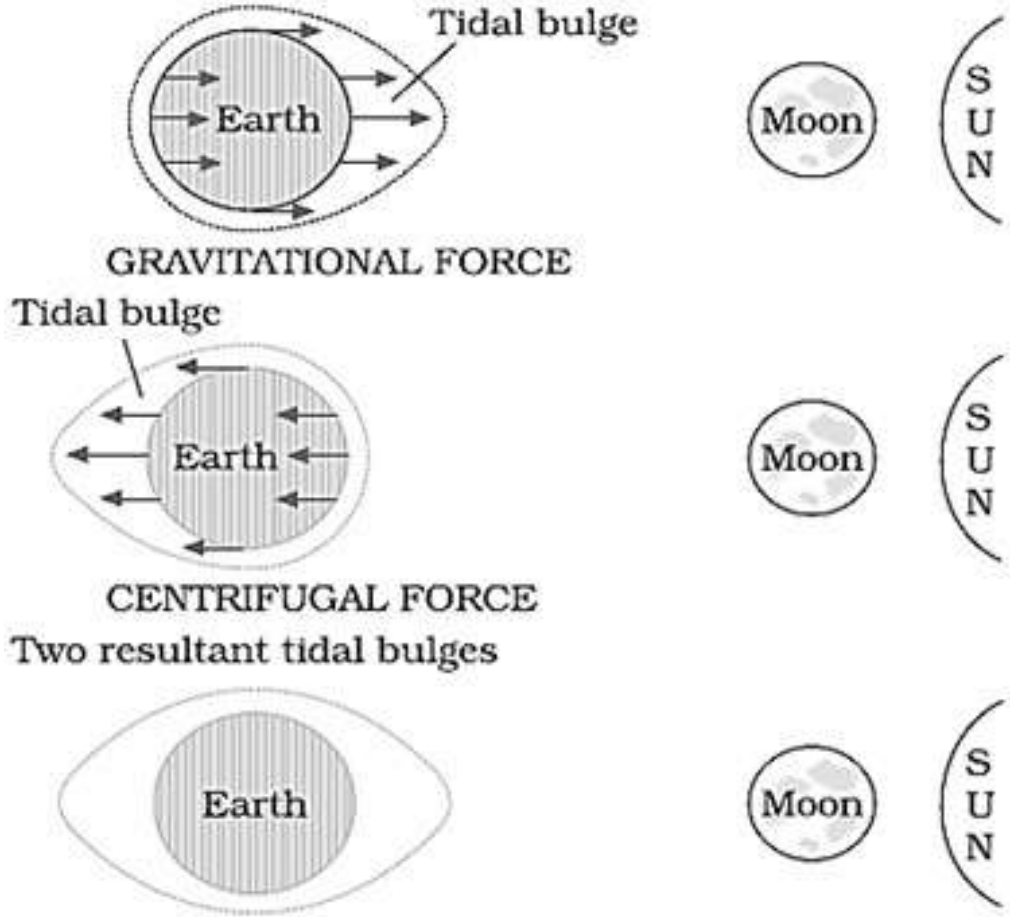

Figure14.2 : Relation between gravitational forces and tides

- The **periodical rise and fall of the sea level, once or twice a day ,mainly due to attraction of Sun and Moon**.
- Another factor is **centrifugal force, which is the force that acts to counter balance the gravity.**

Additional Information :

- **Semidiurnal Tide** - These are tides occurring twice a day.
- **Diurnal Tide** - These tides occur once a day.
- **Mixed Tide** - where a single low tide follows two high tides.

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Q) With reference to the water on the planet Earth, consider the following statements: (2021)

1) The amount of water in the **rivers and lakes** is **more than** the **amount of groundwater.**
2) The amount of water in **polar ice caps and glaciers** is **more t**han the **amount of groundwater.**

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Table 13.1 : Water on the Earth's surface

Reservoir	*Volume (Million Cubic km)*	*Percentage of the Total*
Oceans	1,370	97.25
Ice Caps and Glaciers	29	2.05
Groundwater	9.5	0.68
Lakes	0.125	0.01
Soil Moisture	0.065	0.005
Atmosphere	0.013	0.001
Streams and Rivers	0.0017	0.0001
Biosphere	0.0006	0.00004

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Q . **On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion (2013)**

(a) is found in the atmosphere as moisture and clouds

(b) is found in freshwater lakes and rivers

(c) exists as groundwater

(d) exists as soil moisture

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Q. The 2004 Tsunami made people realize that mangroves can serve as a reliable safety hedge against coastal calamities. How do mangroves function as a safety hedge? (2011)

a) The mangrove swamps separate the human settlements from the sea by a wide zone in which people neither live not venture out

b) The mangroves provide both food and medicines which people are in need of after any natural disaster.

c) The mangrove trees are tall with dense canopies and serve as an excellent shelter during a cyclone or tsunami

d) The mangrove trees do not get uprooted by storms and tides because of their extensive roots

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- The vast mangrove forests on the seaward side of an estuary act as a barrier for the **coastal habitat to check the wind speed during cyclones and high velocity landward winds.**


Mangroves
of Gujarat
Sundarbans
mangroves
Mahanadi
mangroves
Krishna Godavari
mangroves
Ratnagiri
mangroves
Goa
mangroves
Cauvery
deltaic
mangroves
Andaman and
Nicobar Islands
mangroves

Q.) Consider the following statements: (2021)

1. In the tropical zone, the western sections of the oceans are warmer than the eastern sections owing to the influence of trade winds.
2. In the temperate zone, westerlies make the eastern sections of oceans warmer than the western sections.

Which of the statements given above is/are correct?

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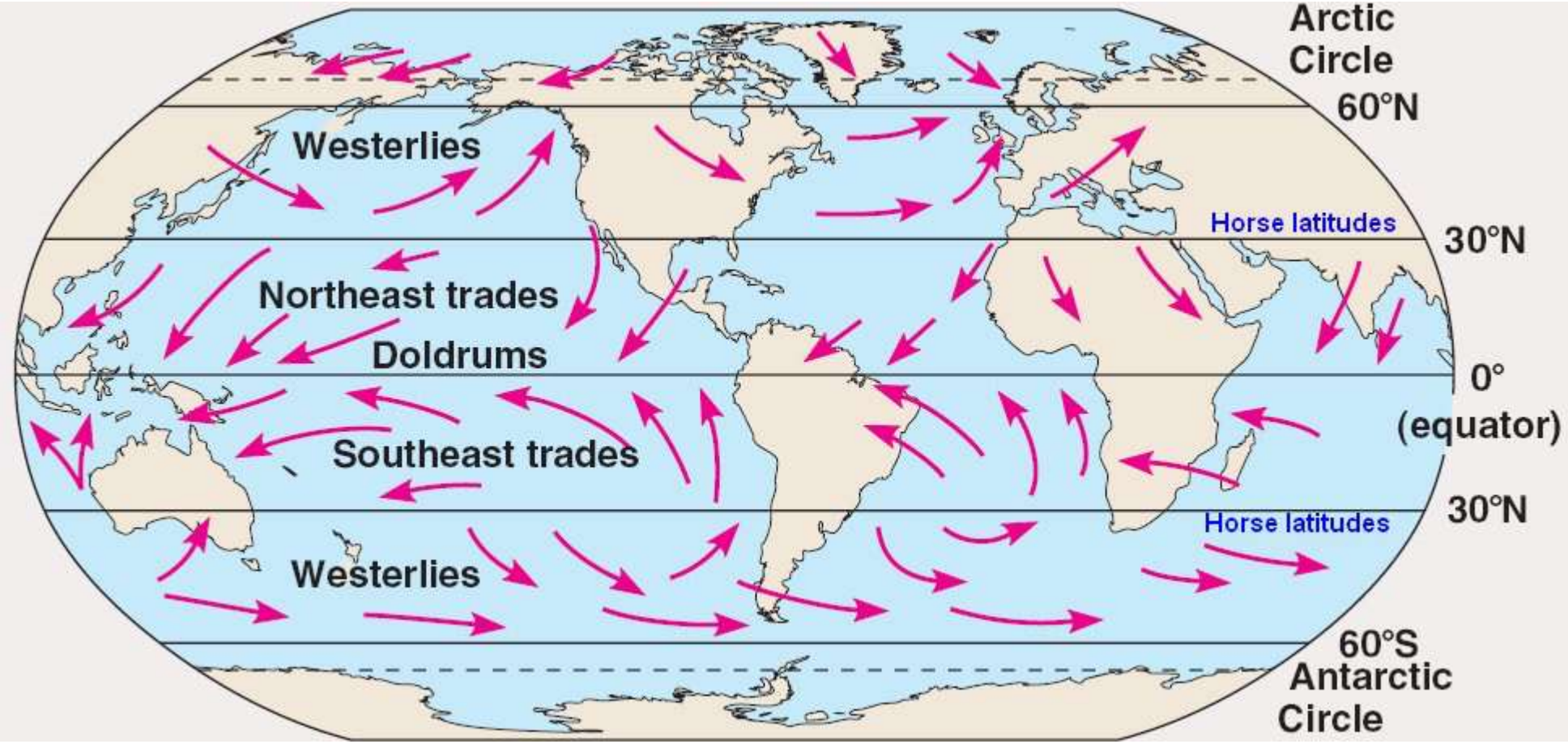
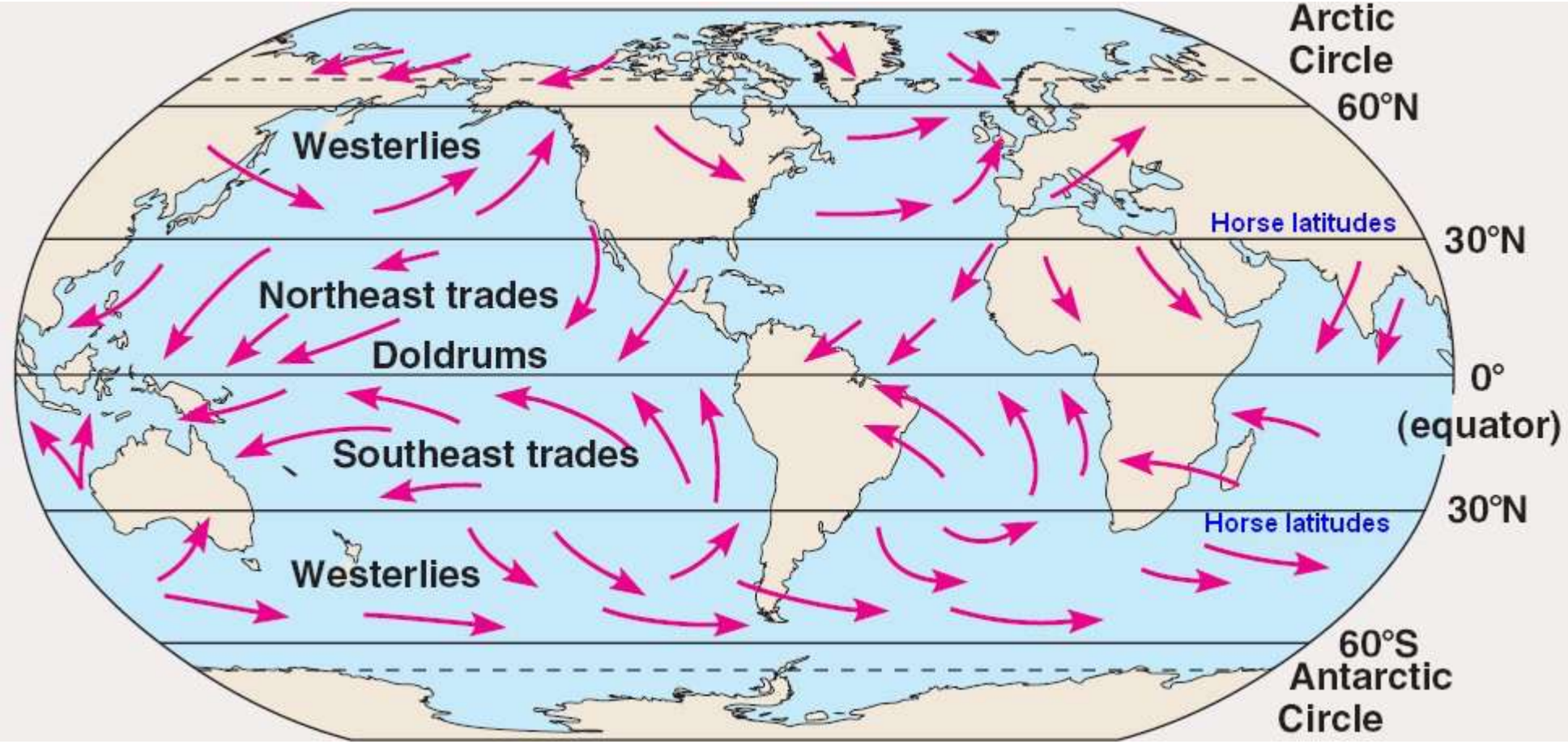

Arctic Circle
60°N
Westerlies
Horse latitudes
30°N
Northeast trades
Doldrums
0°
(equator)
Southeast trades
30°N
Horse latitudes
Westerlies
60°S
Antarctic Circle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0°
(equator)
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30°N
Horse latitudes
Westerlies
60°S
Antarctic Circle

- **Statement 1 is correct.** Warmer water is transported westward in the ocean by the Northeast trade winds in the Northern hemisphere of the tropical zone . So, in tropical zones, the western section of ocean is warmer than eastern sections due to trade winds.
- **Statement 2 is correct.** Similarly, the Westerlies play an important role in carrying the warm, equatorial waters and winds to the western coasts of continents (that is eastern section of the Oceans in temperate zone). Thus, in temperate zones, westerlies make the eastern section of the ocean warmer than the western sections.

INDIAN GEOGRAPHY

Basics

Q) Which one of the following pairs of States of India indicates the easternmost and westernmost State ? (2015)

a) Assam and Rajasthan

b) Arunachal Pradesh and Rajasthan

c) Assam and Gujarat

d) Arunachal Pradesh and Gujarat

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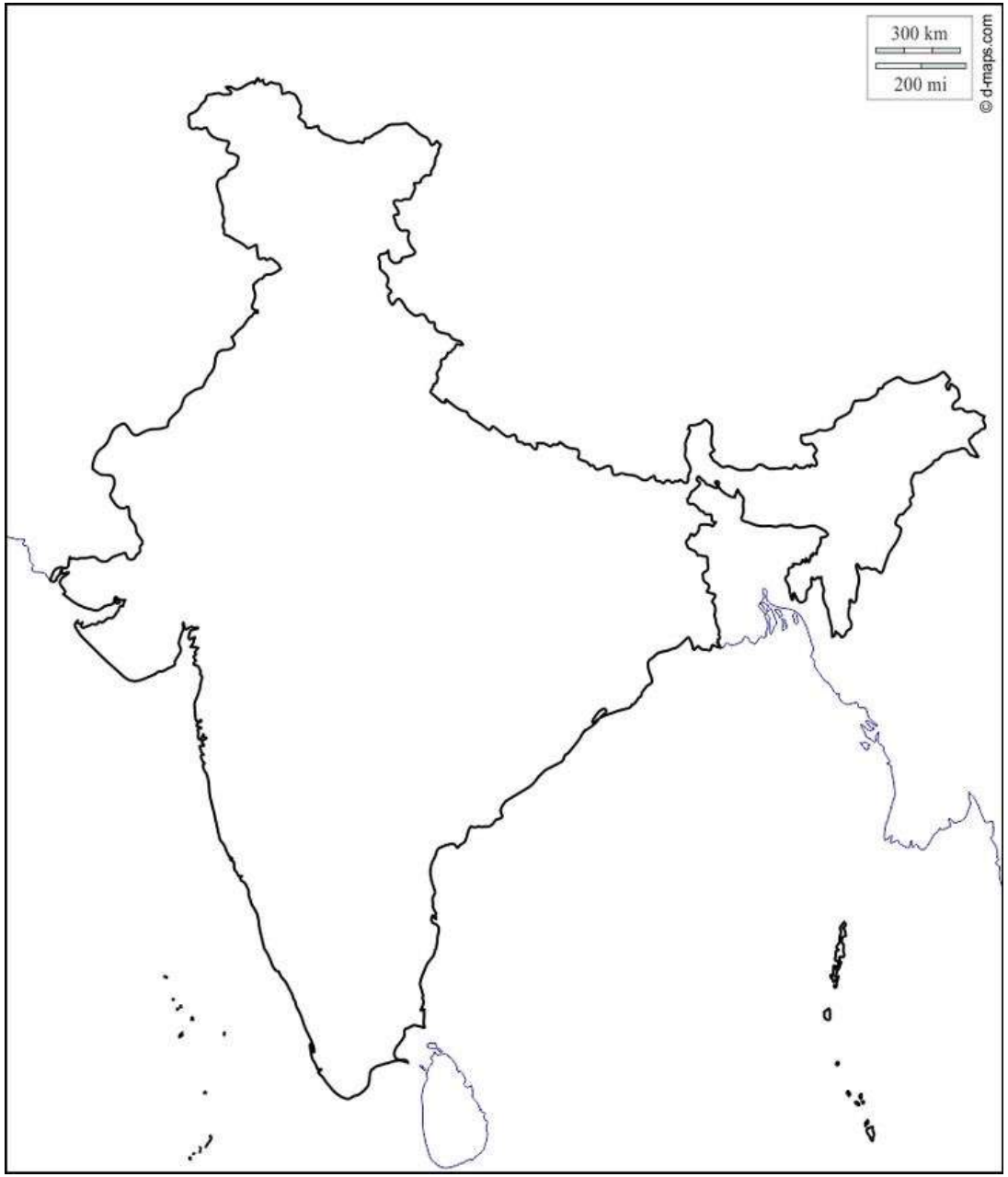
300 km
200 mi
© d-maps.com

- The mainland of India, extends from Kashmir in the north to Kanniyakumari in the south and Arunachal Pradesh in the east to Gujarat in the west.

Q) If you travel by road from Kohima to Kottayam, what is the minimum number of States within India through which you can travel, including the origin and the destination? (2017)

a) 6

b) 7

c) 8

d) 9

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Punjab
Haryana
Uttarakhand
CHINA
Delhi
NEPAL
Sikkim
Arunachal Pradesh
BHUTAN
Rajasthan
Uttar Pradesh
Bihar
Assam
Meghalaya
BANGLADESH
Manipur
Tripura
Mizoram
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Myan
Diu & Daman
Dadra & Nagar Haveli
Maharashtra
Telangana
BAY OF BENGAL
ARABIAN SEA
Andhra Pradesh
Karnataka
Andaman & nicobar islands (India)
Pondicherry
Tamil Nadu
Kerala
LAKSHADWEEP
MALDIVES
INDIAN OCEAN

- Kohima (Nagaland) to Kottayam (Kerala) passes - Nagaland-Assam-West Bengal -Odisha-Andhra Pradesh-Tamil Nadu-Kerala

Indian Monsoon

Q) Consider the following statements: (2012)

1. The duration of the monsoon decreases from southern India to northern India.

2. The amount of annual rainfall in the northern plains of India decreases from east to west.

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

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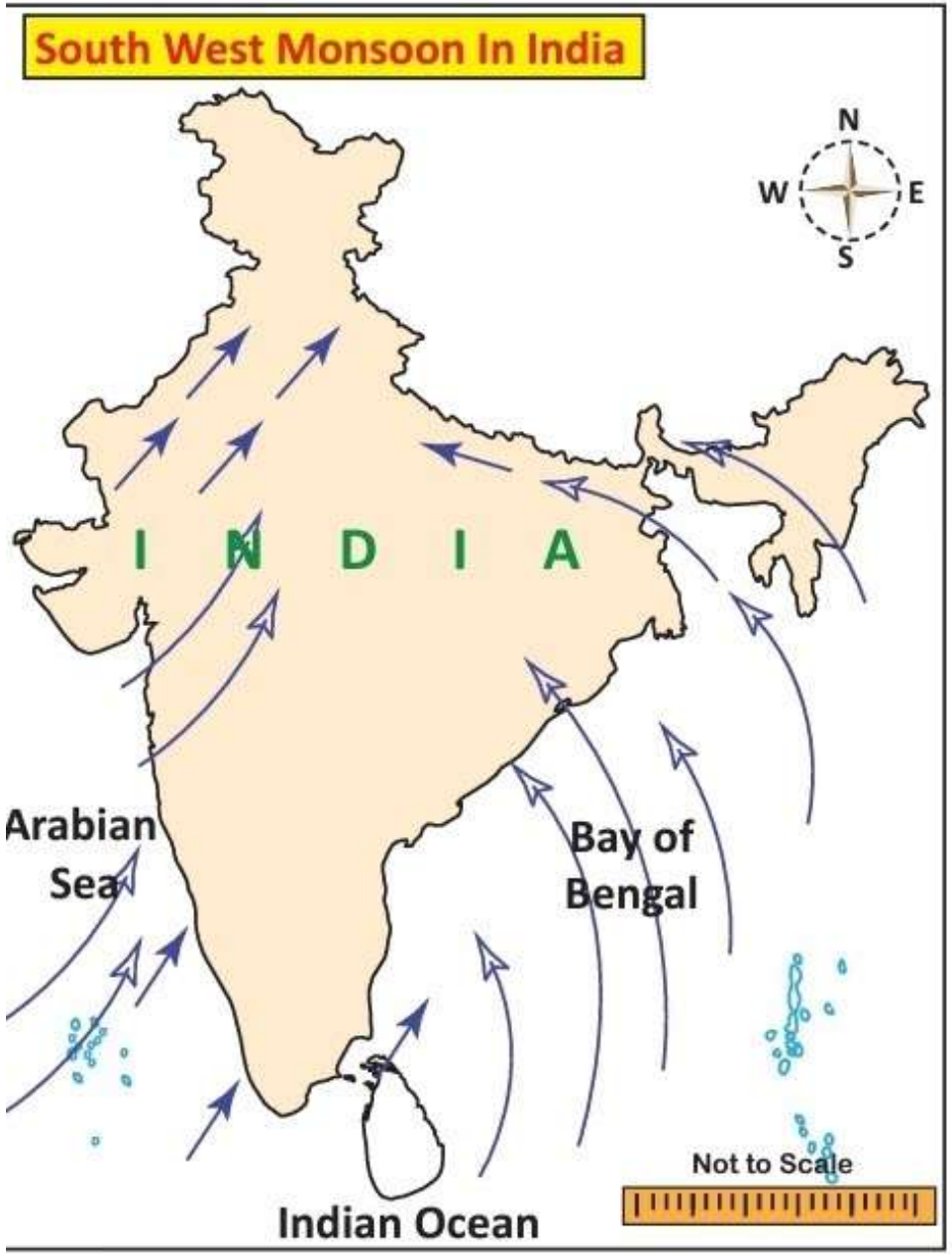
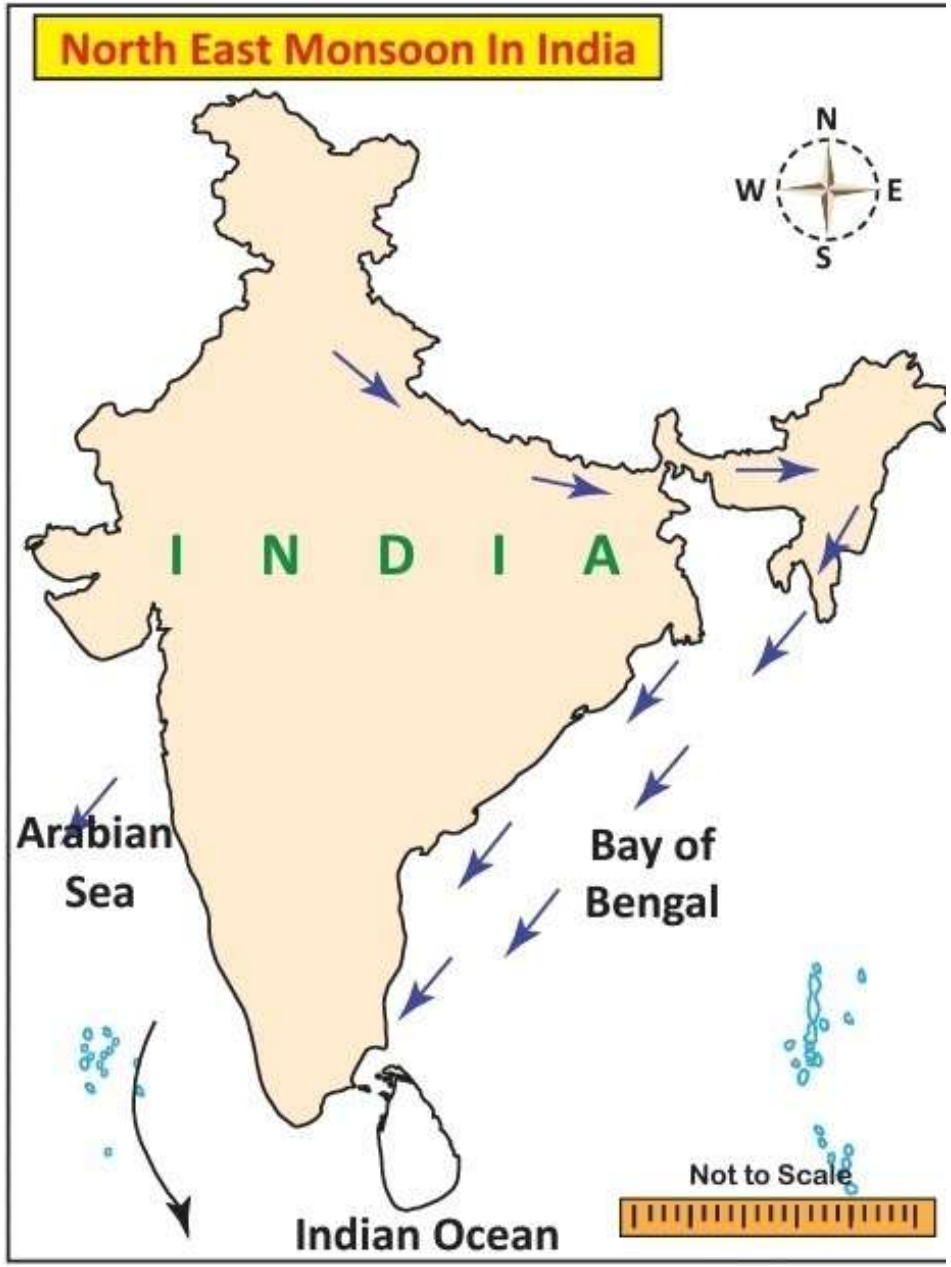
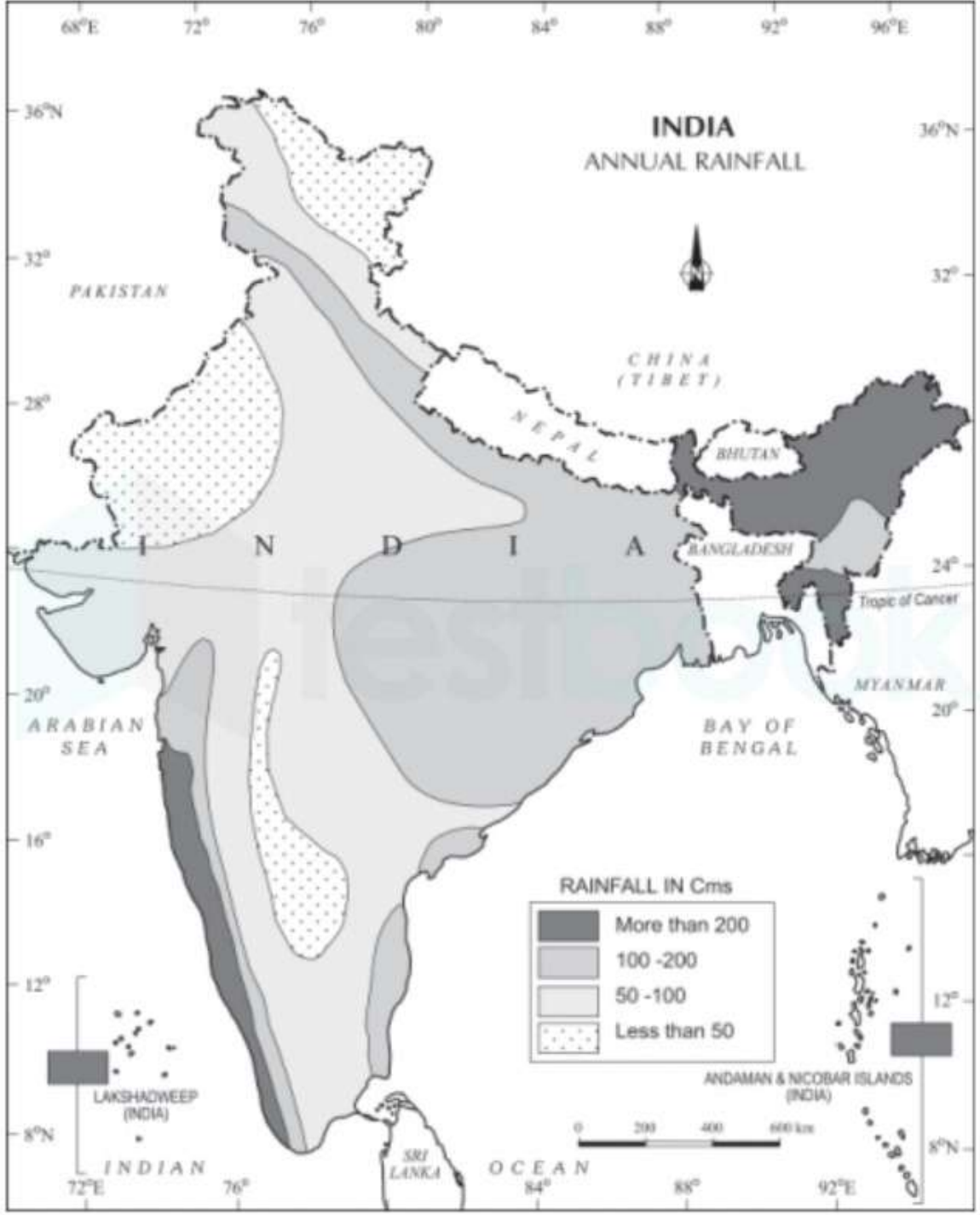

South West Monsoon In India
N
W
E
S
I N D I A
Arabian Sea
Bay of Bengal
Indian Ocean
Not to Scale


North East Monsoon In India
N
W
E
S
I N D I A
Arabian Sea
Bay of Bengal
Indian Ocean
Not to Scale



The amount of annual rainfall in the **northern plains of India decreases from east to west.**

The duration of the monsoon decreases from southern India to northern India.

Southern Part of India:

Southwest Monsoon + Retreating Monsoon

Early Monsoon + Proximity to sea

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Q) With reference to 'Indian Ocean Dipole (IOD)' sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct? (2017)

1) IOD phenomenon is characterized by a difference in sea surface temperature between **tropical Western Indian Ocean and tropical Eastern Pacific Ocean.**
2) An IOD phenomenon can influence an El Nino's impact on the monsoon.

Select the correct answer using the code given below:

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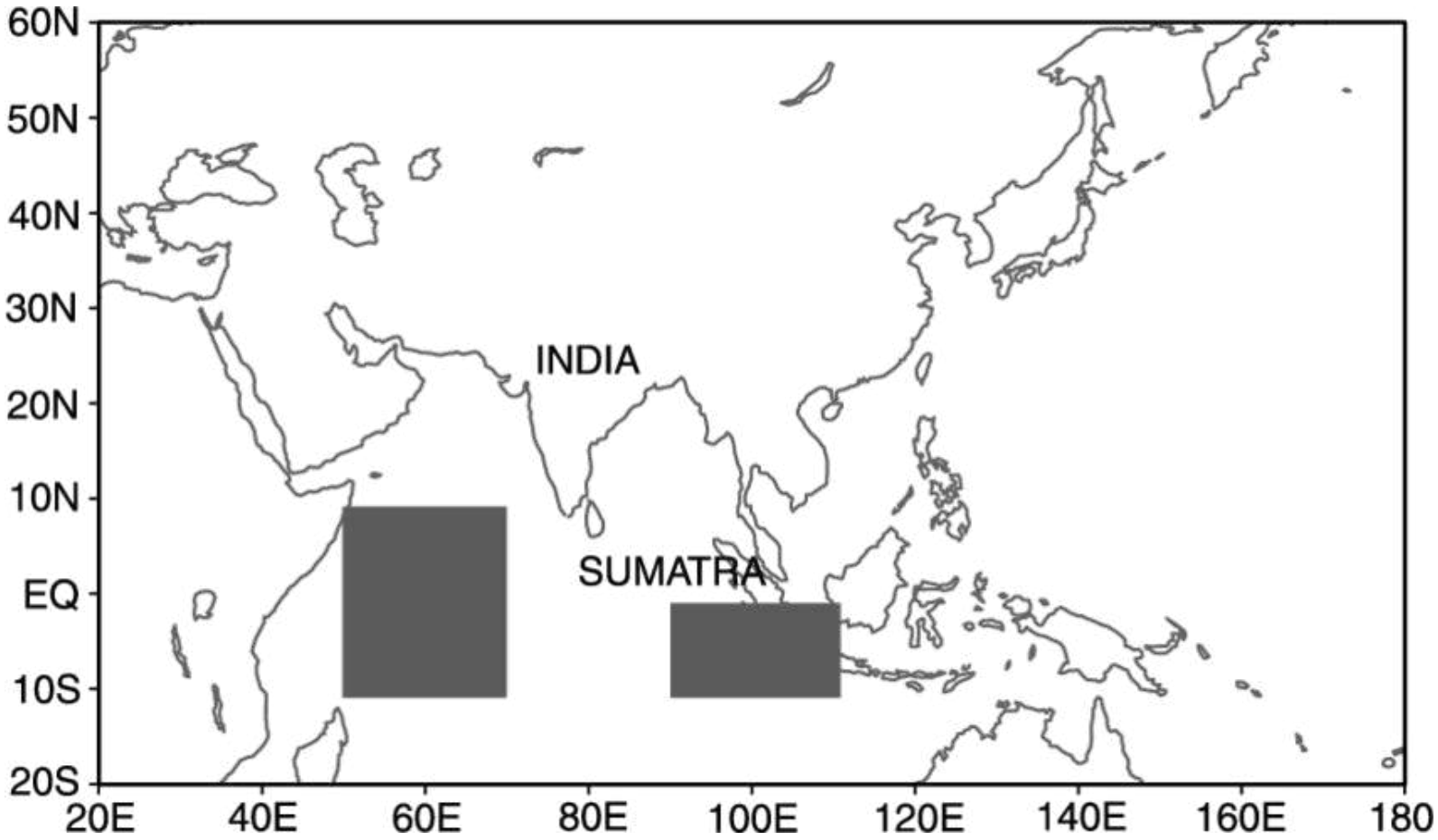
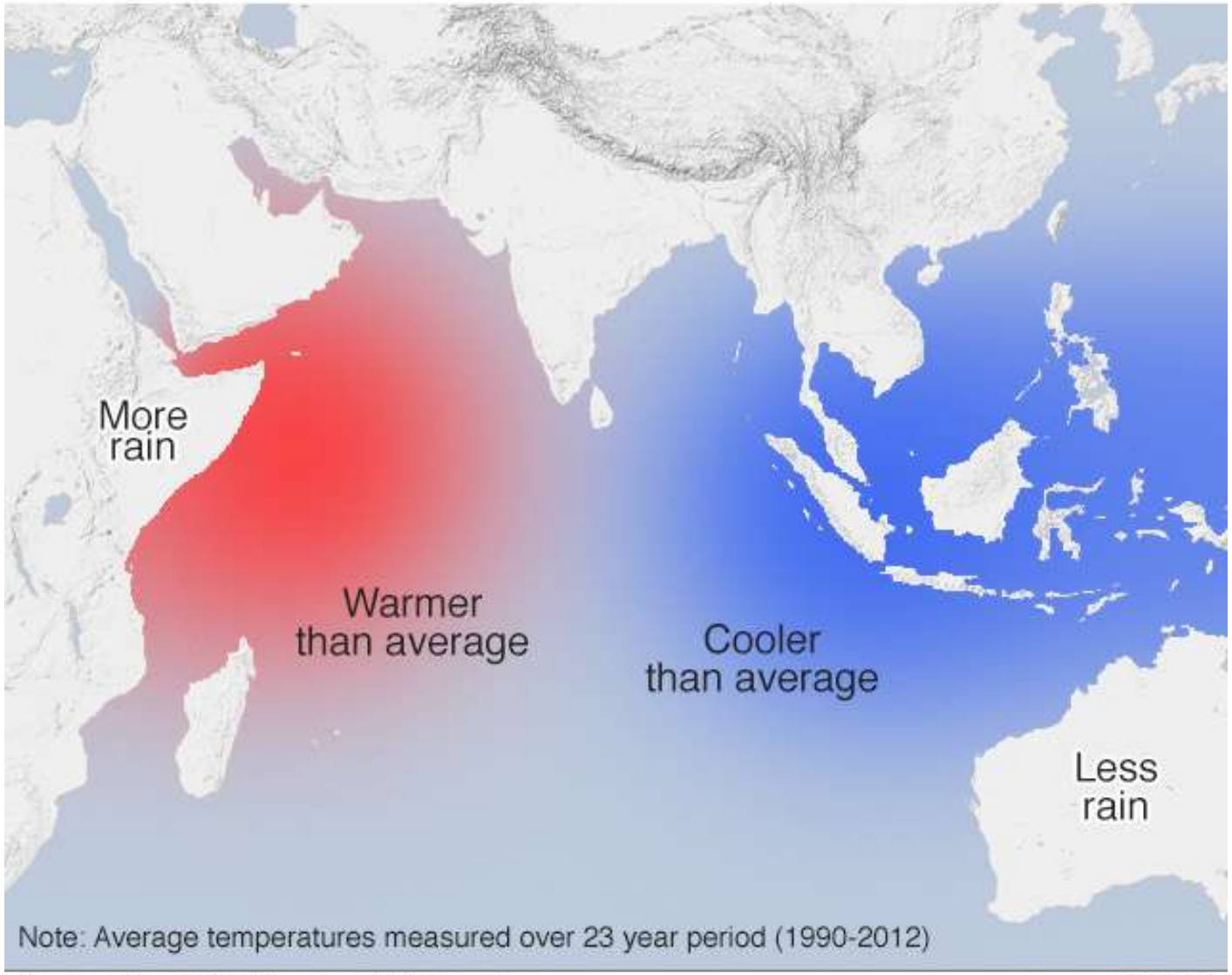

60N
50N
40N
30N
20N
10N
EQ
10S
20S
20E
40E
60E
80E
100E
120E
140E
160E
180
INDIA
SUMATRA

- The Indian Ocean Dipole is an irregular oscillation of sea-surface temperatures in which the **western Indian Ocean becomes alternately warmer and then colder than the eastern part of the ocean.**
- An IOD can **either aggravate or weaken the impact of El Nino on Indian monsoon.**

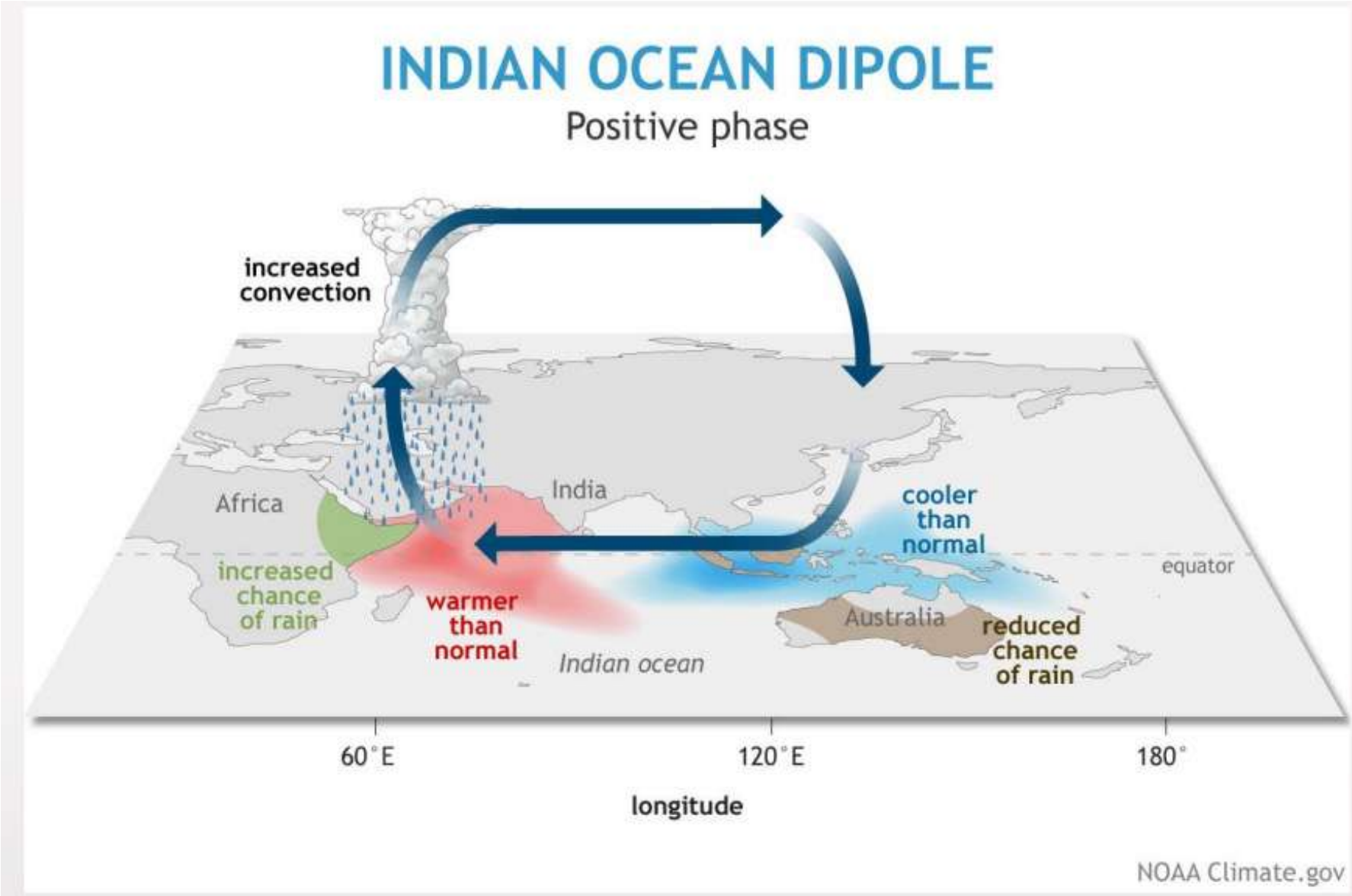
Note - Positive IOD events are often associated with El Niño and negative events with La Niña

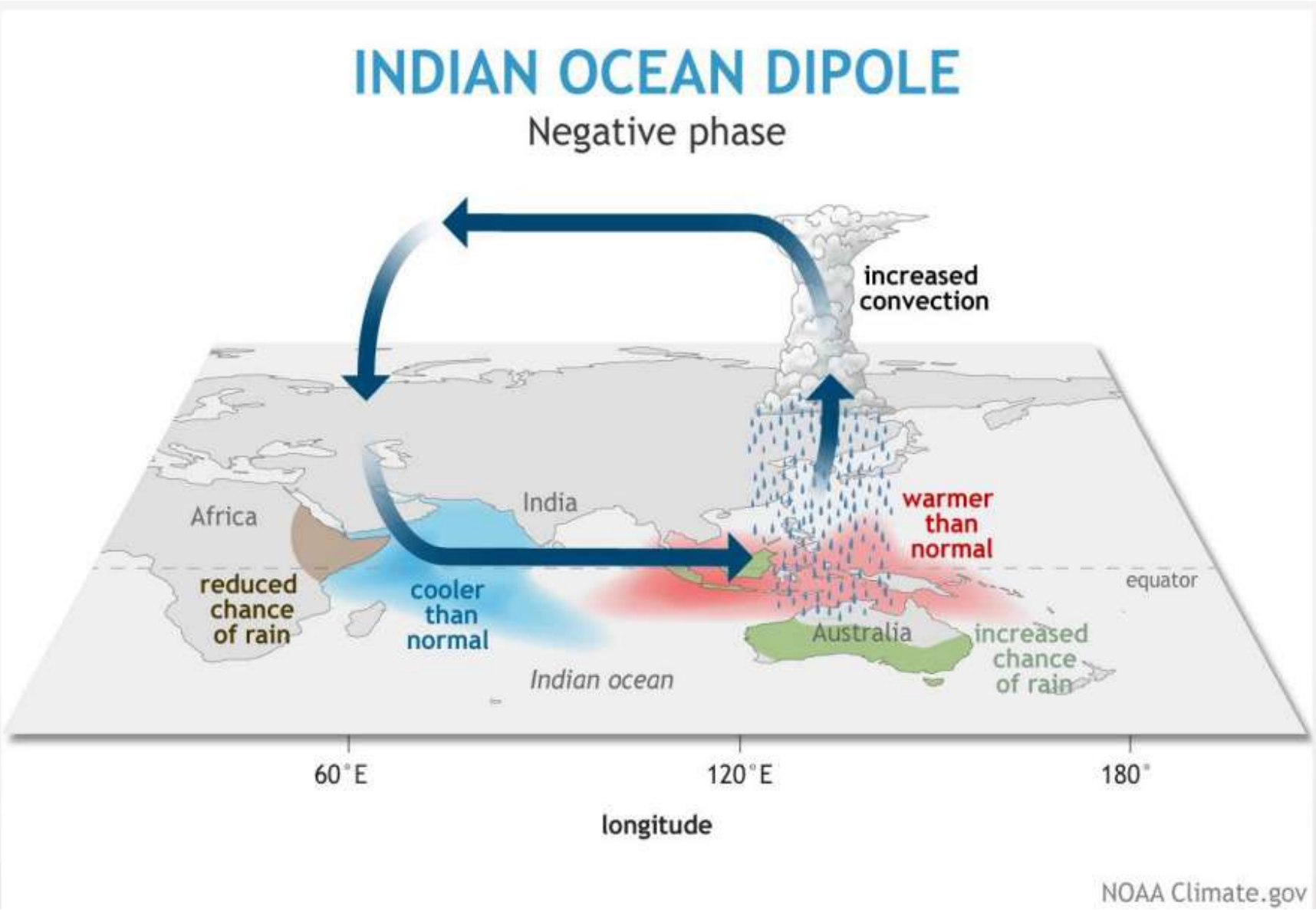
A positive Indian Ocean Dipole means a wetter west and drier east



Source: Australian Bureau of Meteorology

BBC


INDIAN OCEAN DIPOLE
Positive phase
increased convection
Africa
India
cooler than normal
equator
increased chance of rain
warmer than normal
Indian ocean
Australia
reduced chance of rain
60°E
120°E
180°
longitude
NOAA Climate.gov


INDIAN OCEAN DIPOLE
Negative phase
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Africa
India
warmer than normal
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equator
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60°E
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NOAA Climate.gov

Physiography – Basics

Q) When you travel in Himalayas, you will see the following: (2012)

1. Deep gorges
2. U-turn river courses
3. Parallel mountain ranges
4. Steep gradients causing land-sliding.

Which of the above can be said to be the evidence for Himalayas being young fold mountains?

a) 1 and 2 only

b) 1, 2 and 4 only

c) 3 and 4 only

d) 1, 2, 3 and 4

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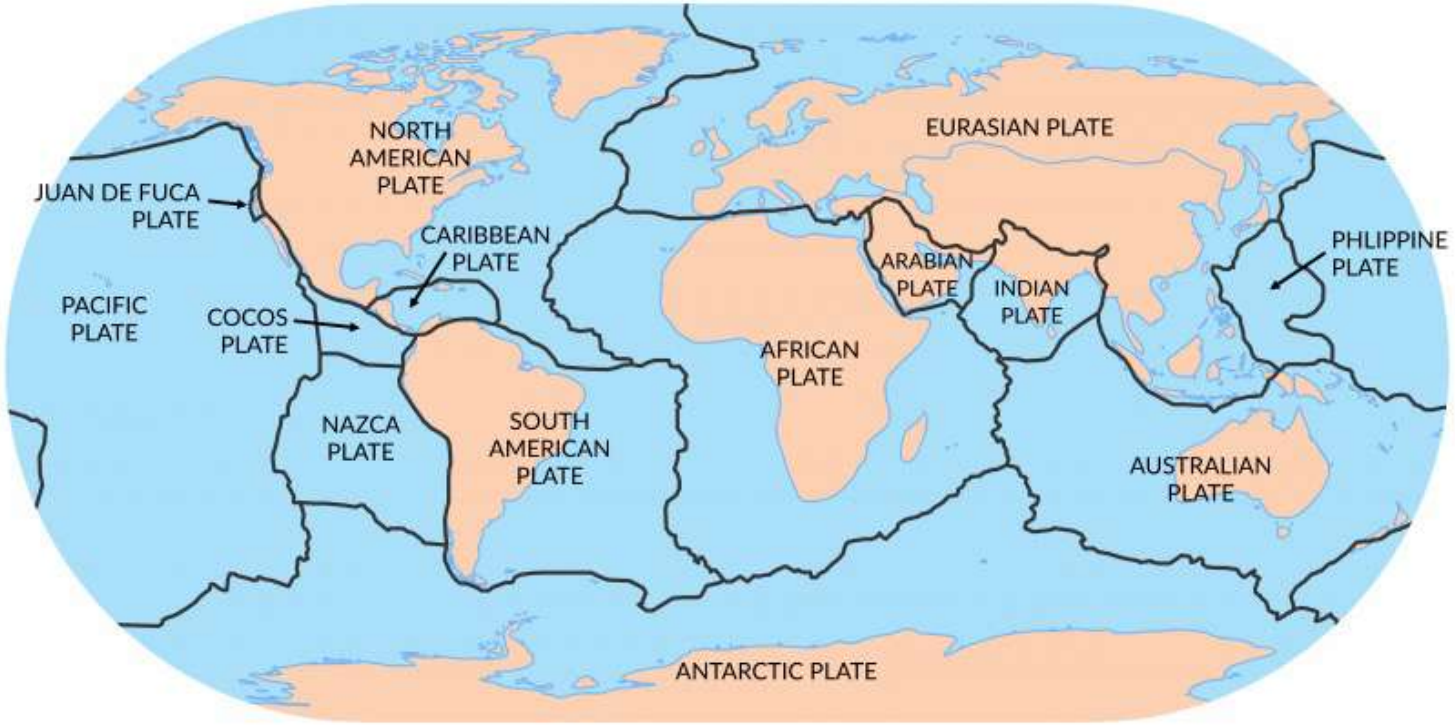
Plate Tectonics



1. Parallel mountain ranges – Himachal, Himadri and Shivaliks

2. U-turn river courses – Rivers shifting their courses .

3. Steep gradients causing land-sliding – Recent Landslide in Chamoli district of Himachal Pradesh

4. Deep gorges- Indus Gorge

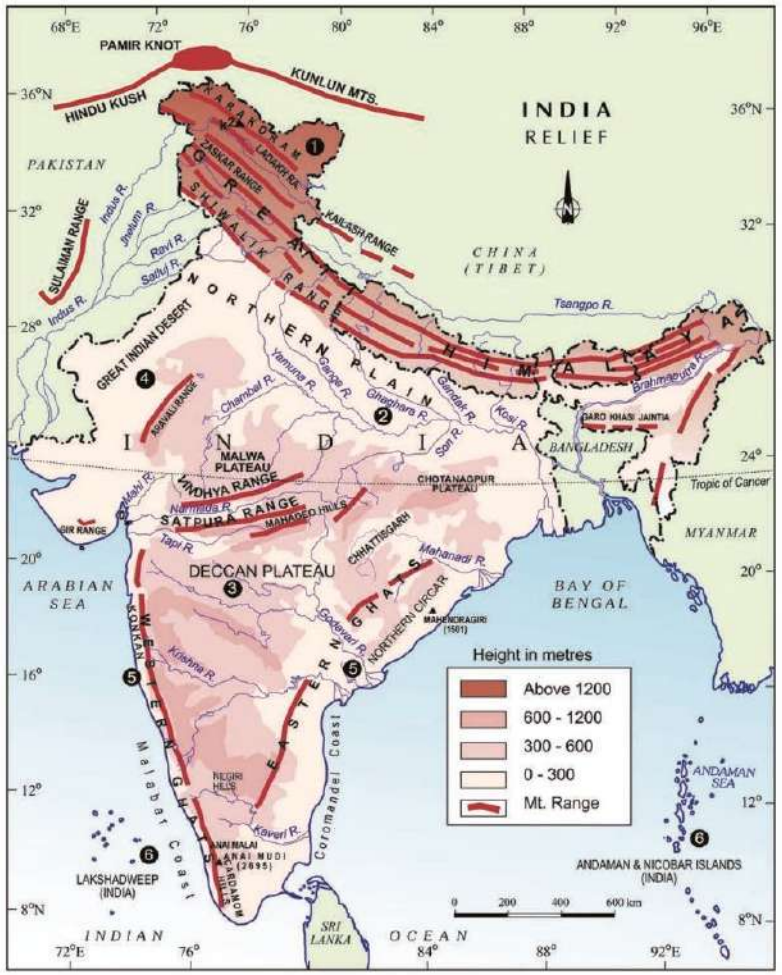


Figure 2.2 : Relief

Q6) When you travel in Himalayas, you will see the following:

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2. U-turn river courses
3. Parallel mountain ranges
4. Steep gradients causing land-sliding.

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Q) The Narmada river flows to the west, while most other large peninsular rivers flow to the east. Why? (2013)

1) It occupies a linear rift valley.

2) It flows between the Vindhyas and the Satpuras.

3) The land slopes to the west from Central India.

Select the correct answer using the codes given below:

a) 1 only

b) 2 and 3

c) 1 and 3

d) None

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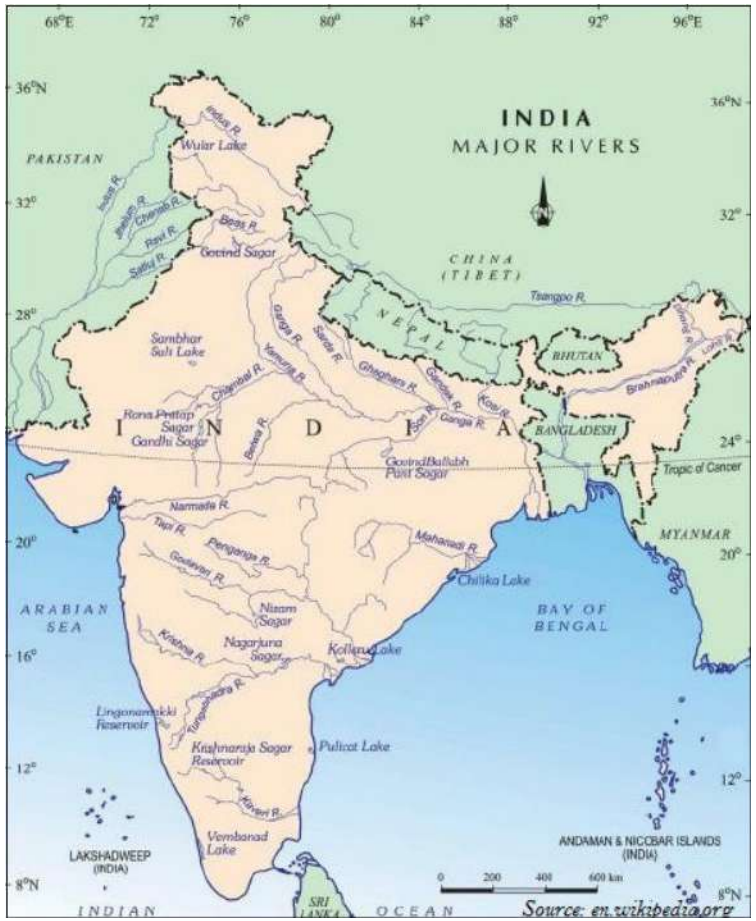
c) 1 and 3

d) None

Note : The slopes of central highlands are from southwest to northeast.



- The Narmada and the Tapi flow through the rift valley.
- The Narmada originates in eastern Madhya Pradesh and flows west across the state, through a narrow valley between the Vindhya Range and spurs of the Satpura Range.
- The land slopes to the east from Central India

Map of Narmada River

Rivers that flow in rift valley

- Narmada
- Tapi
- Mahi
- Damodar

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Q. The Brahmaputra, Irrawady and Mekong rivers originate in Tibet and flow through narrow and parallel mountain ranges in their upper reaches. Of these rivers, Brahmaputra makes a "U" turn in its course to flow into India. This "U" turn is due to (2011)

a) Uplift of folded Himalayan series

b) Syntaxial bending of geologically young Himalayas

c) Geo-Tectonic disturbance in the tertiary folded mountain chains

d) Both (a) and (b) above

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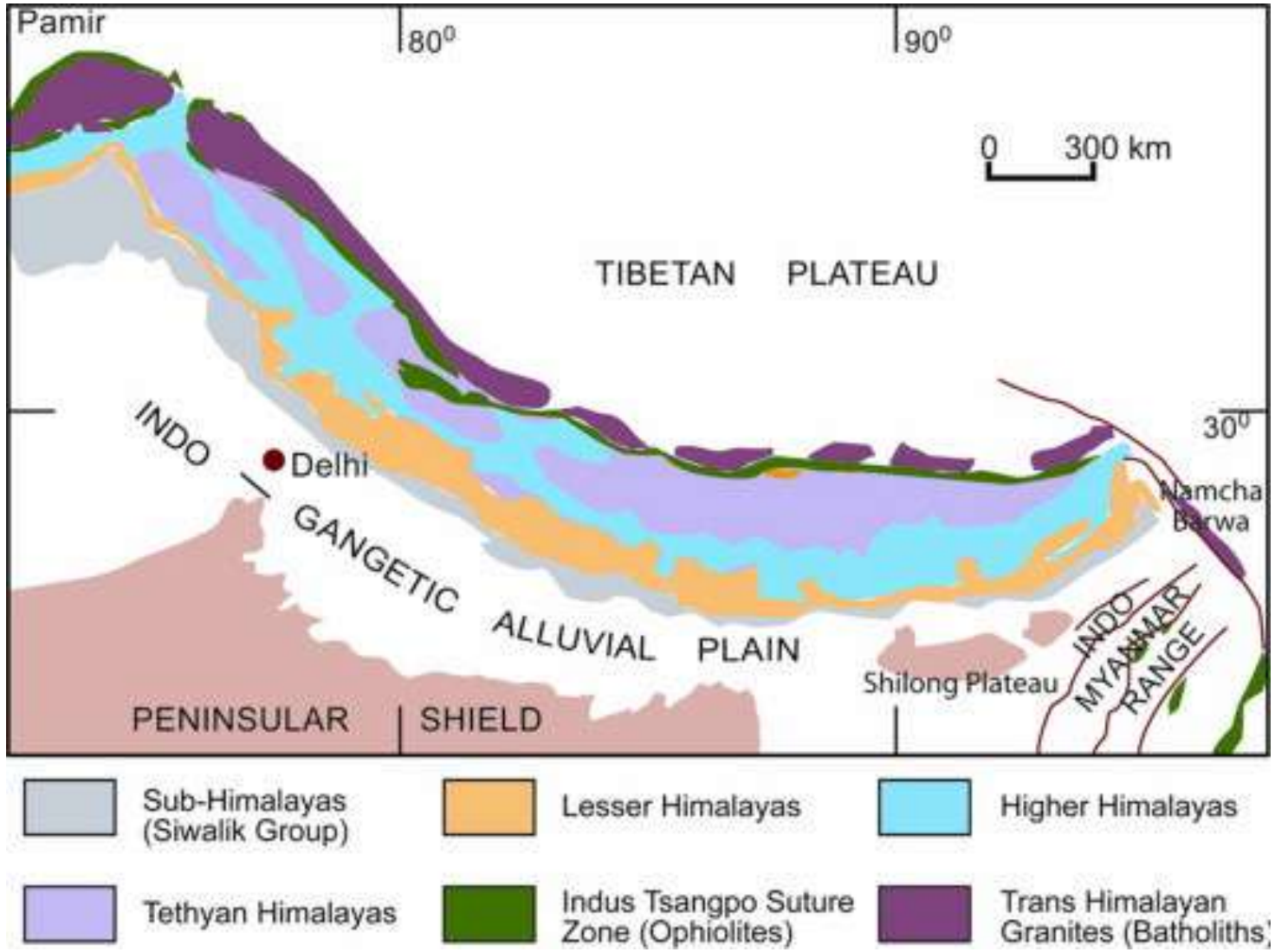
Pamir
80⁰
90⁰
0 300 km
TIBETAN PLATEAU
INDO
Delhi
GANGETIC ALLUVIAL PLAIN
30⁰
Namcha Barwa
INDO MYANMAR RANGE
Shilong Plateau
PENINSULAR SHIELD
Sub-Himalayas (Siwalik Group)
Lesser Himalayas
Higher Himalayas
Tethyan Himalayas
Indus Tsangpo Suture Zone (Ophiolites)
Trans Himalayan Granites (Batholiths)

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Q.) The black cotton soil of India has been formed due to the weathering of (2021)

a) brown forest soil

b) fissure volcanic rock

c) granite and schist

d) shale and limestone

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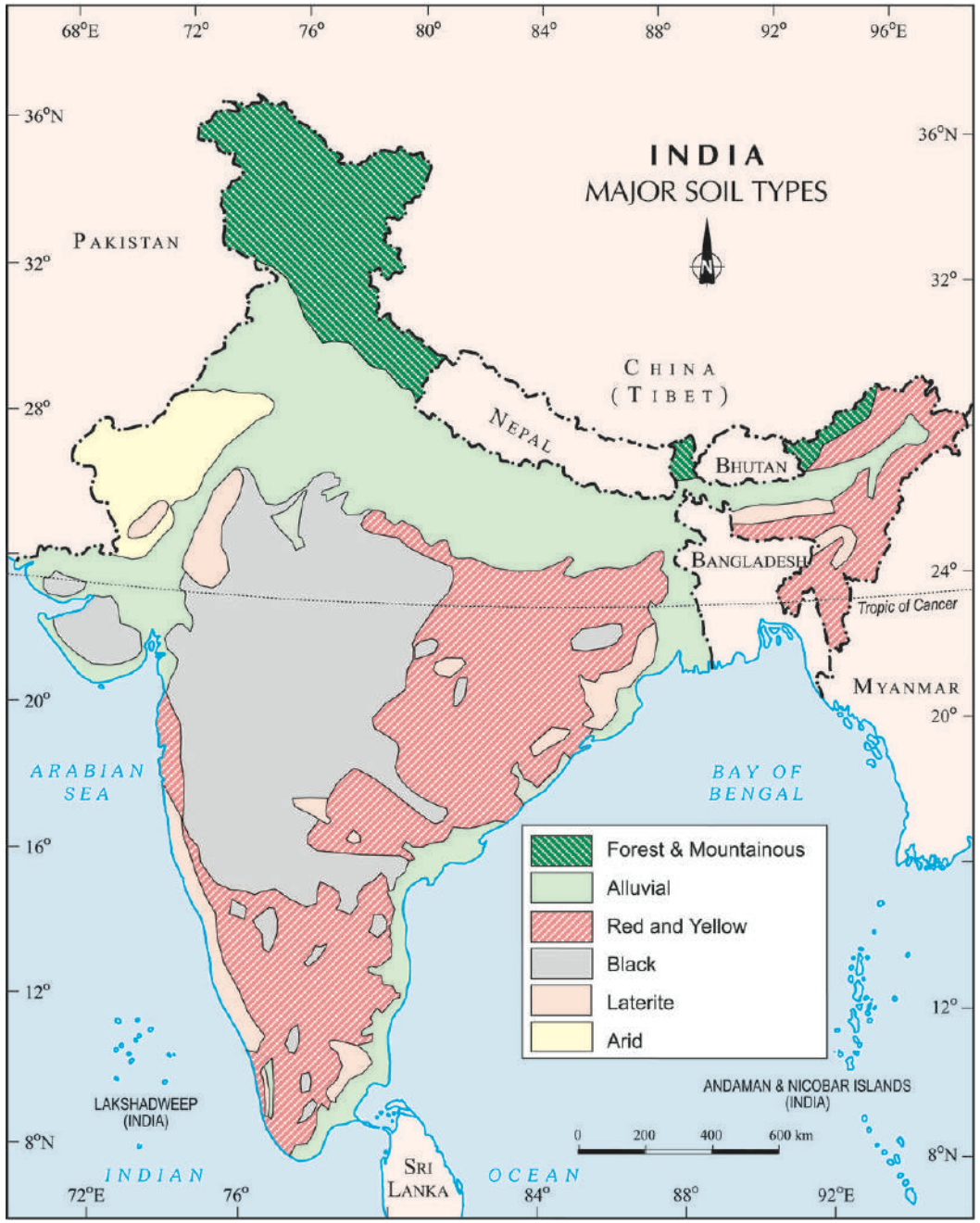
- Deccan Plateau was as formed by volcanic activity that lasted millions of years, causing the deposition of lava.
- **Black soil is formed due to the weathering or erosion of the basalt rocks.**


INDIA
MAJOR SOIL TYPES
68°E
72°
76°
80°
84°
88°
92°
96°E
36°N
32°
28°
24°
20°
16°
12°
8°N
PAKISTAN
CHINA (TIBET)
NEPAL
BHUTAN
BANGLADESH
MYANMAR
Tropic of Cancer
ARABIAN SEA
BAY OF BENGAL
INDIAN OCEAN
LAKSHADWEEP (INDIA)
ANDAMAN & NICOBAR ISLANDS (INDIA)
SRI LANKA
Forest & Mountainous
Alluvial
Red and Yellow
Black
Laterite
Arid
0 200 400 600 km

Q.) 'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to (2016)

a) constitutional reforms

b) Ganga Action Plan

c) linking of rivers

d) protection of Western Ghats

Q.) 'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to (2016)

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GHATS:

SPREAD OVER SIX STATES
Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala

Covers distance of **1,500** km along western coast

State & Area (in sq km)	
Karnataka	20,668
Maharashtra	17,340
Kerala	9,993
Tamil Nadu	6,914
Goa	1,461
Gujarat	449

NOTIFIED THRICE, BUT REMAIN ON PAPER

First	**March 10, 2014**
Second	**September 4, 2015**
Third	**February 27, 2017**

- To conserve and protect the bio diversity of Western Ghats while allowing for sustainable and inclusive development of the region, Government of India had constituted a High Level Working Group under the Chairmanship of Dr. Kasturirangan.
- The Committee had recommended that identified geographical areas falling in the six States of Kerala, Karnataka, Goa, Maharashtra, Gujarat and Tamil Nadu may be declared as Ecologically Sensitive Areas.
- The Committee recommended bringing just 37% of the Western Ghats under the Ecologically Sensitive Area (ESA) zones — downing from the 64% suggested by the Gadgil Committee report.

Q) Consider the following statements: (2017)

1) In India, the Himalayas are spread over five states only.

2) Western Ghats are spread over five states only.

3) Pulicat Lake is spread over two States only.

Which of the statements given above is/are correct?

a) 1 and 2 only

b) 3 only

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NOTIFIED THRICE, BUT REMAIN ON PAPER

First	**March 10, 2014**
Second	**September 4, 2015**
Third	**February 27, 2017**


Wular lake
Sambar lake
Chilka lake
Kolleru lake
Pulicat lake

- the Himalayas are spread over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Assam, West Bengal, Arunachal Pradesh. Some extensions of Shiwaliks are also present in Punjab and Haryana.
- Western Ghats are spread over six states - **Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu.**
- Pulicat -lies on the border of **Andhra Pradesh and Tamil Nadu.**

- **Note : Western Ghat Committees :**
- **Gadgil Report and Kasturirangan Committee on Western Ghats**

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Soil

Q) Which of the following statements regarding laterite soils of India are correct? (2013)

1) They are generally red in colour.

2) They are rich in nitrogen and potash.

3) They are well-developed in Rajasthan and UP.

4) Tapioca and cashew nuts grow well on these soils.

Select the correct answer using the codes given below:

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- Laterite has been derived from the Latin word 'Later' which means brick. The **laterite soils develop in areas with high temperature and high rainfall**. These are the **result of intense leaching due to tropical rains**
- These soils are poor in organic matter, nitrogen, phosphate and calcium, while iron oxide and potash are in excess. Hence, **laterites are not suitable for cultivation; however, application of manures and fertilisers are required for making the soils fertile for cultivation.**
- Red laterite soils in Tamil Nadu, Andhra Pradesh and Kerala are more suitable for tree crops like cashewnut.
- Laterite soils are **widely cut as bricks** for use in house construction. These soils have mainly developed in the higher areas of the Peninsular plateau. The laterite soils are commonly found in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh and the hilly areas ofOdisha and Assam


INDIA
MAJOR SOIL TYPES
PAKISTAN
CHINA (TIBET)
NEPAL
BHUTAN
BANGLADESH
MYANMAR
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ANDAMAN & NICOBAR ISLANDS

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Q) In India, the problem of soil erosion is associated with which of the following?

1) Terrace cultivation
2) Deforestation
3) Tropical climate

Select the correct answer using the code given below:

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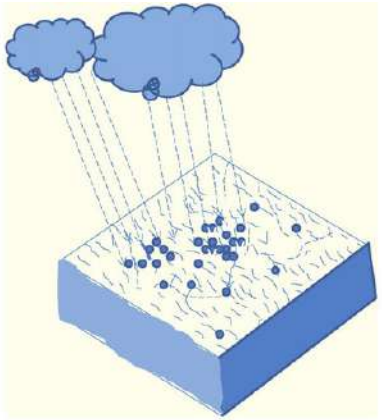
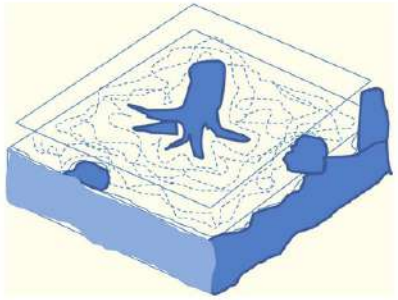
Terrace Cultivation

- Terrace cultivation is **for preventing soil erosion on hill slopes .**
- Tropical climate **has nothing to do with soil erosion.**
- **Deforestation is one of the leading causes of Soil Erosion.**

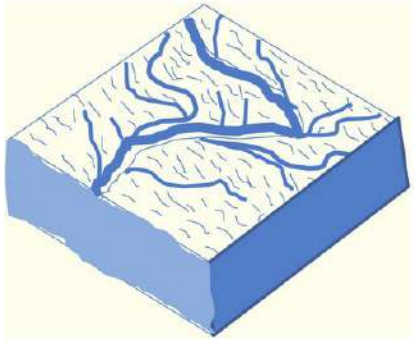
Additional Information - Types of Soil Erosion



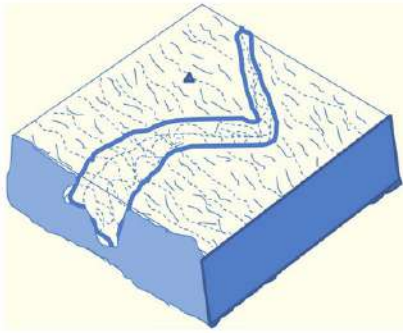
1. Splash Erosion



2. Sheet Erosion



3. Rill Erosion



4. Gully Erosion

Natural Vegetation

Q) In India, in which one of the following types of forests is teak a dominant tree species? (2015)

a) Tropical moist deciduous forest

b) Tropical rain forest

c) Tropical thorn scrub forest

d) Temperate forest with grasslands

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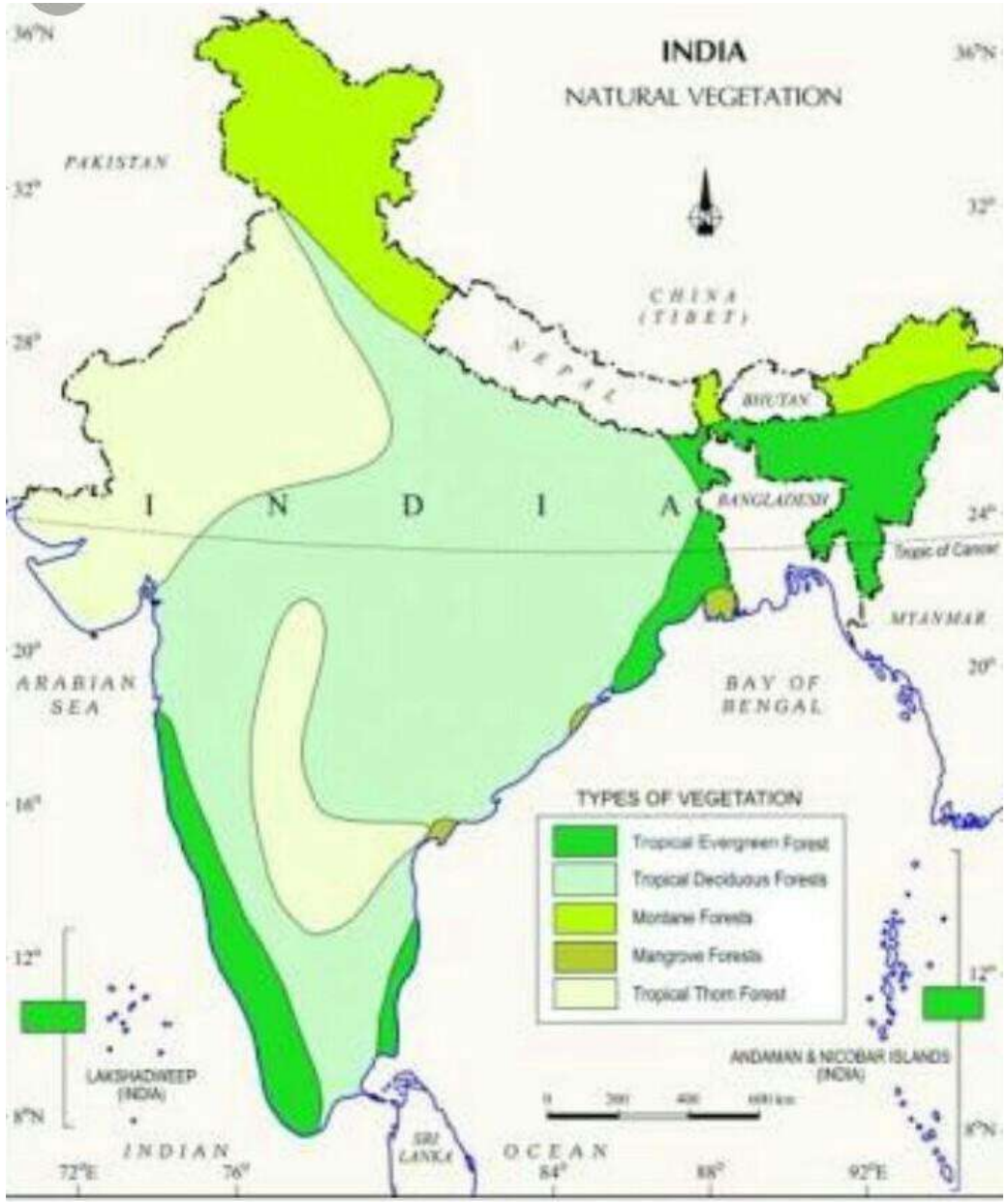
INDIA
NATURAL VEGETATION
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NEPAL
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BANGLADESH
MYANMAR
I N D I A
Tropic of Cancer
ARABIAN SEA
BAY OF BENGAL
TYPES OF VEGETATION
Tropical Evergreen Forest
Tropical Deciduous Forests
Montane Forests
Mangrove Forests
Tropical Thorn Forest
LAKSHADWEEP (INDIA)
ANDAMAN & NICOBAR ISLANDS (INDIA)
SRI LANKA
INDIAN OCEAN
36°N
32°
28°
24°
20°
16°
12°
8°N
72°E
76°
84°
88°
92°E

- The Moist deciduous forests are more pronounced in the regions which record **rainfall between 100-200 cm.**
- These forests are found in the northeastern states along the foothills of Himalayas, eastern slopes of the Western Ghats and Odisha.
- **Teak, sal, shisham, hurra, mahua, amla, semul, kusum, and sandalwood** etc. are the main species of these forests.

Q.) Which one of the following regions of India has a combination of mangrove forest, evergreen forest and deciduous forest?

a) North Coastal Andhra Pradesh

b) South-West Bengal

c) Southern Saurashtra

d) Andaman and Nicobar Islands

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Q) If you travel through the Himalayas, you are likely to see which of the following plants naturally growing there ? (2014)

1) Oak

2) Rhododendron

3) Sandalwood

Select the correct answer using the code given below:

a) 1 and 2 only

b) 3 only

c) 1 and 3 only

d) 1, 2 and 3

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- **Montane Forest+ Himalayan Forest**
- On the higher slope, temperate conifer trees like pine, fir, and oak grow. At the higher elevation of the Himalayas, rhododendrons and junipers are found. They can be seen while traveling through the Himalayas as they are part of the natural vegetation of the region.

- **Deciduous Forest**
- Sandalwood is found in tropical deciduous forests or monsoon forests which are found in Western Ghats, Deccan plateau, northern plains and foot hills of Himalayas. . Thus, sandalwood grows naturally in Himalaya foothills and not in the Himalayas.

Q) If you travel through the Himalayas, you are likely to see which of the following plants naturally growing there ?(2014)

1) Oak

2) Rhododendron

3) Sandalwood

Select the correct answer using the code given below:

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Q. <u>Consider the following trees(2023)</u>

1. Jackfruit (Artocarpus heterophyllus)
2. Mahua (Madhuca indica)
3. Teak (Tectona grandis)

How many of the above are deciduous trees?

a) Only one
b) Only two
c) All three
d) None

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Explanation

- **Tropical Deciduous Forests - . Teak (Tectona grandis) , sal, shisham, hurra, mahua (Madhuca indica), amla, semul, kusum, and sandalwood etc.**
- **Jackfruit, (Artocarpus heterophyllus), evergreen tree (family Moraceae) native to tropical Asia -** wetland tropics + evergreen

Islands

Q) Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (2022)

a) Andaman and Nicobar
b) Nicobar and Sumatra
c) Maldives and Lakshadweep
d) Sumatra and Java

Q) Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (2022)

a) **Andman and Nicobar**

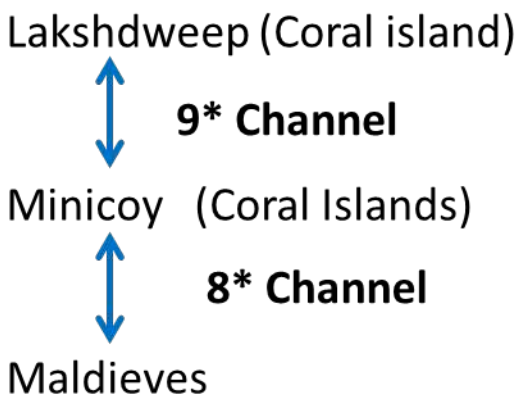
b) Nicobar and Sumatra

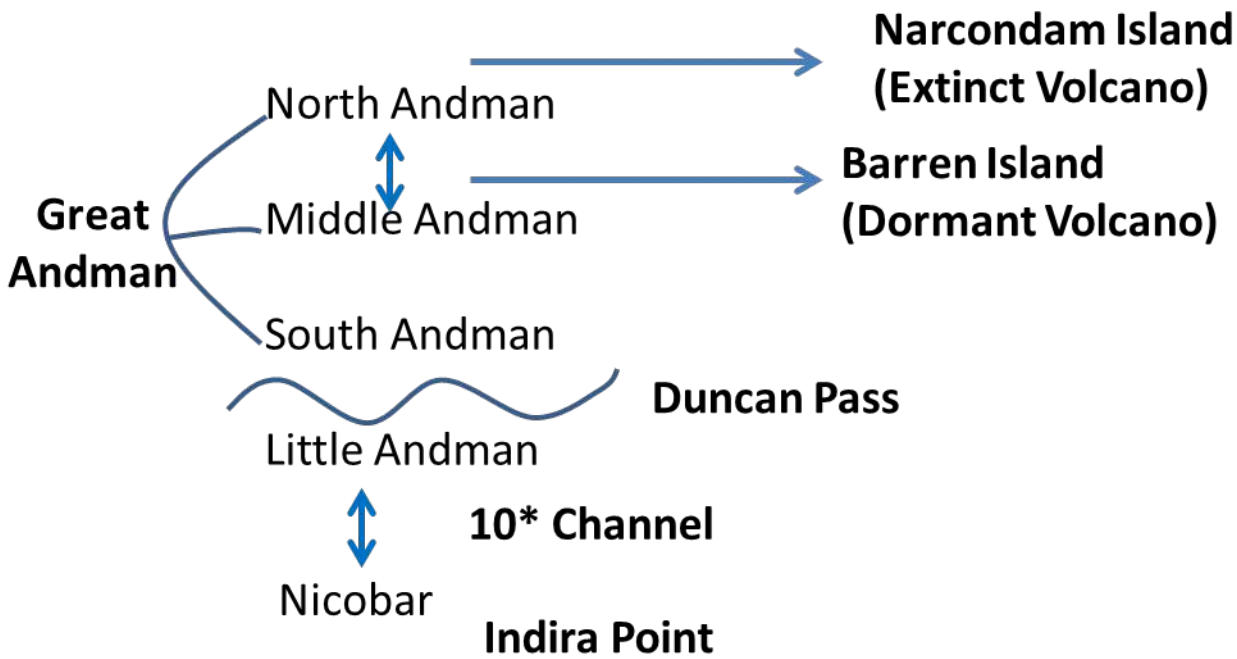
c) Maldives and Lakshadweep

d) Sumatra and Java

- The entire group of island is divided into two broad categories – the Andaman in the north and the Nicobar in the south. They are separated by a water body which is called the Ten degree channel.

ISLANDS


Lakshdweep (Coral island)
9* Channel
Minicoy (Coral Islands)
8* Channel
Maldieves


Great Andman
North Andman
Middle Andman
South Andman
Little Andman
Nicobar
Narcondam Island (Extinct Volcano)
Barren Island (Dormant Volcano)
Duncan Pass
10* Channel
Indira Point

- **Note :**
- The Eight Degree Channel separates the islands of Minicoy and Maldives, the Nine Degree Channel separates the island of Minicoy from the main Lakshadweep archipelago and the Ten Degree Channel separates the Andaman Islands and the Nicobar Islands from each other in the Bay of Bengal.

Q) Consider the following statements: (2018)

1) The Barren Island volcano is an active volcano located in the Indian territory.
2) Barren Island lies about 140 km east of Great Nicobar.
3) The last time the Barren Island volcano erupted was in 1991 and it has remained inactive since then.

Which of the statements given above is/are correct?

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b) 2 and 3
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Q82) Consider the following statements: (2018)

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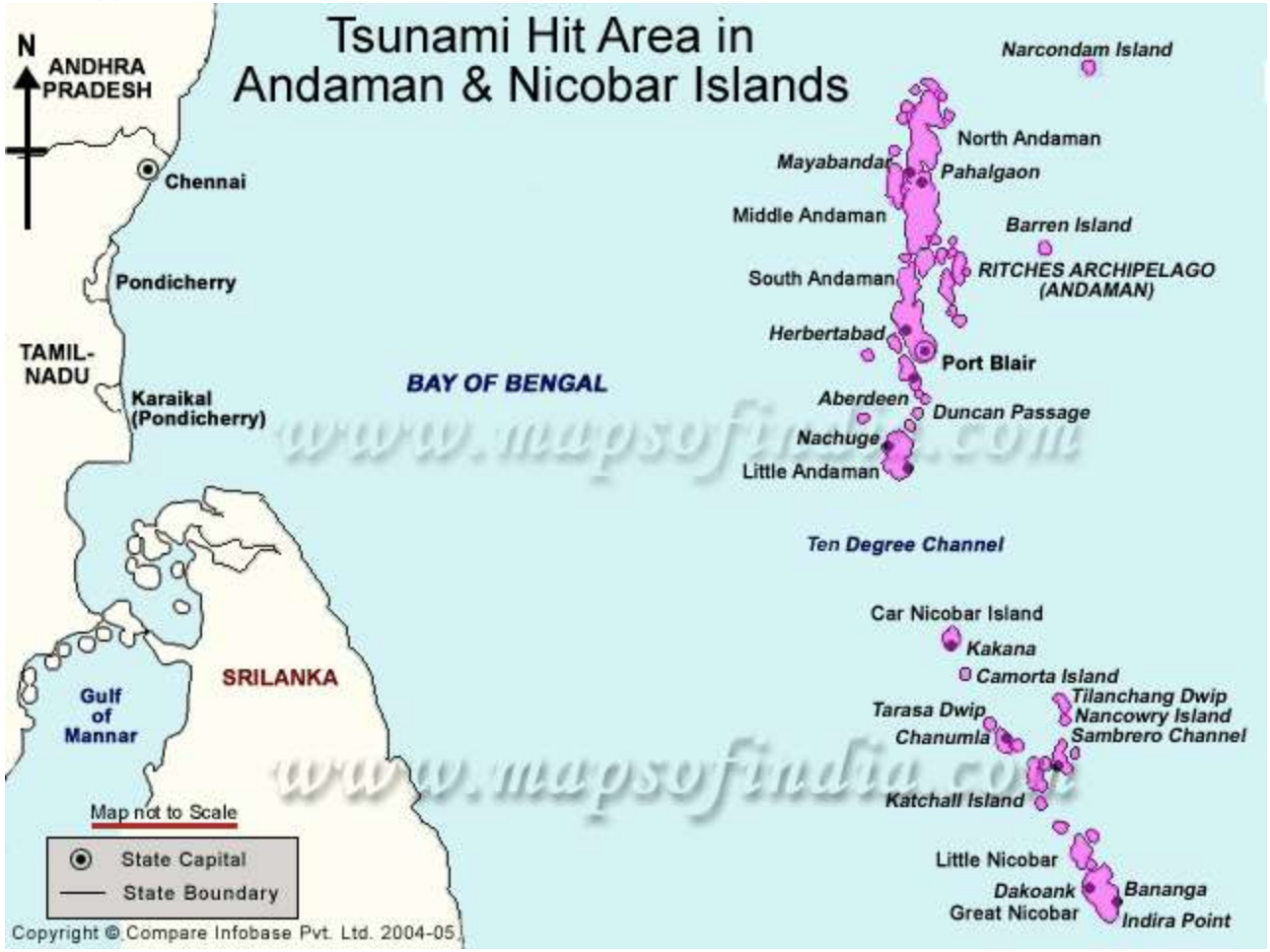
- Barren Island is India's only active volcano.
- The Barren Island volcano saw a major eruption in 1991. Since then it has shown intermittent activity, including eruptions in 1995, 2005 and 2017.



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1) The Barren Island volcano is an active volcano located in the Indian territory.
2) Barren Island lies about 140 km east of Great Nicobar.
3) The last time the Barren Island volcano erupted was in 1991 and it has remained inactive since then.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3

c) 3 only

d) 1 and 3

Q) Which of the following have coral reefs ? (2014)

1) Andaman and Nicobar Islands
2) Gulf of Kachchh
3) Gulf of Mannar
4) Sunderbans

Select the correct answer using the code given below:

a) 1, 2 and 3 only
b) 2 and 4 only
c) 1 and 3 only
d) 1, 2, 3 and 4

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2) Gulf of Kachchh
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b) 2 and 4 only
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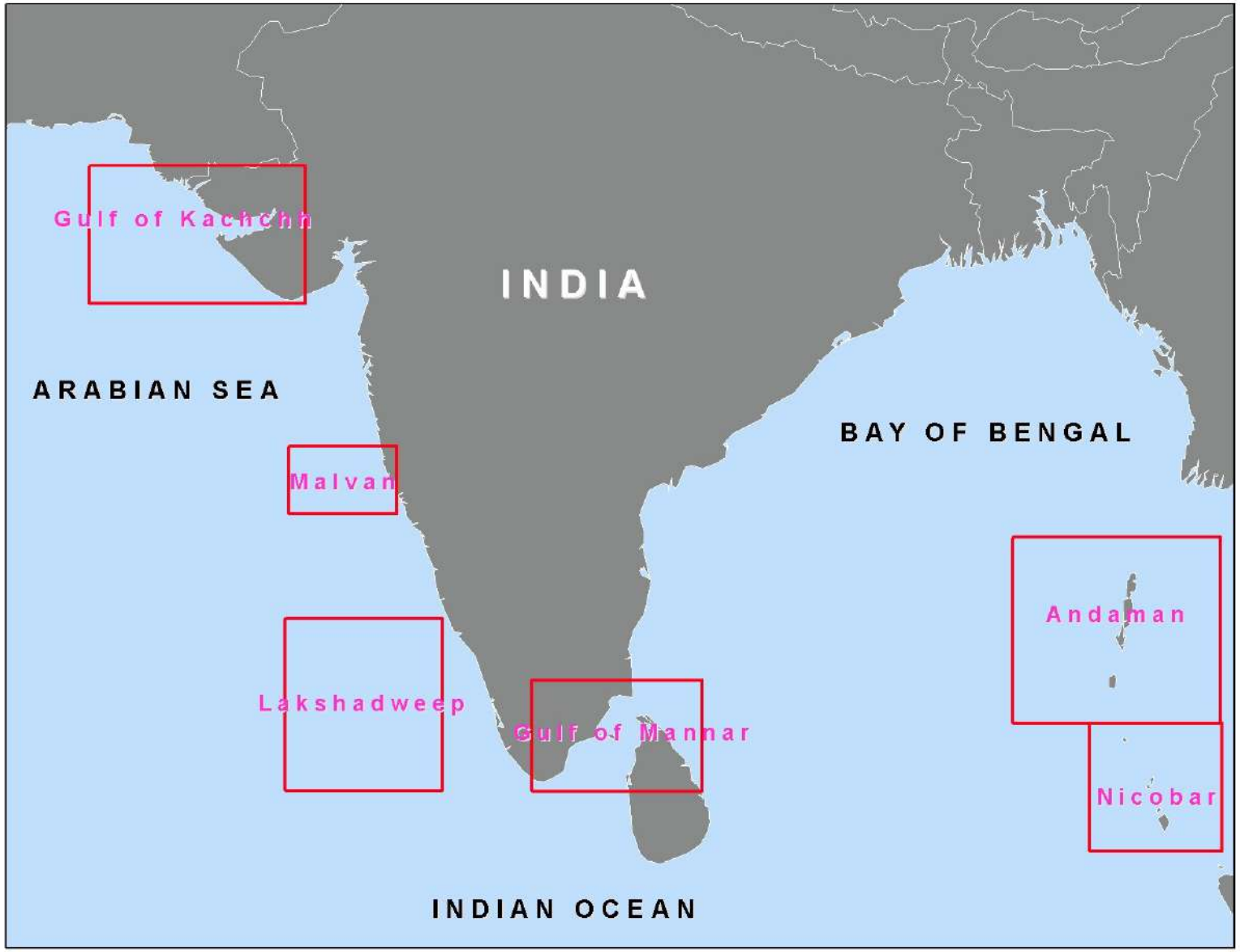
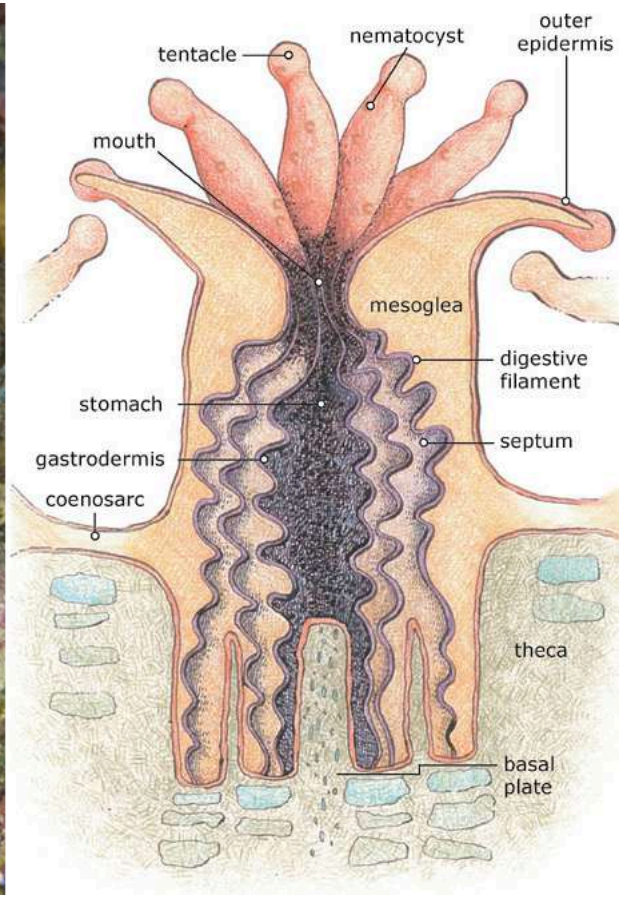
d) 1, 2, 3 and 4


Gulf of Kachchh
INDIA
ARABIAN SEA
BAY OF BENGAL
Malvan
Andaman
Lakshadweep
Gulf of Mannar
Nicobar
INDIAN OCEAN

Additional Information - Ideal Conditions of Coral Reefs

- **Stable climatic conditions + Perpetually warm waters:** tropical waters [30°N and 30°S latitudes, The temperature of water is around 20°C]
- **Shallow water:** Coral require fairly good amount of sunlight to survive.
- **Clear salt water + Little or no pollution**
- **Abundant Plankton:** Adequate supply of oxygen and microscopic marine food, called plankton [phytoplankton], is essential for growth. **As the plankton is more abundant on the seaward side, corals grow rapidly on the seaward side.**

Tentacles


tentacle
nematocyst
outer epidermis
mouth
mesoglea
digestive filament
stomach
septum
gastrodermis
coenosarc
theca
basal plate

Q) Which of the following have coral reefs ?

1) Andaman and Nicobar Islands
2) Gulf of Kachchh
3) Gulf of Mannar
4) Sunderbans

Select the correct answer using the code given below:

a) 1, 2 and 3 only

b) 2 and 4 only
c) 1 and 3 only
d) 1, 2, 3 and 4

Q) Which of the following is geographically closest to Great Nicobar? (2017)

a) Sumatra

b) Borneo

c) Java

d) Sri Lanka

Q) Which of the following is geographically closest to Great Nicobar? (2017)

a) Sumatra

b) Borneo

c) Java

d) Sri Lanka


Karāchi
Jaipur
Lucknow
Kānpur
NEPAL
Kathmandu
BHUTAN
Thimphu
ZHONG GUO
Guiyang
Taipei
TAIWAN
Ahmadābād
INDIA
BHARAT
BANGLADESH
Dhaka
Kunming
Xi Jiang
Guangzhou
Hong Kong S.A.R.
Macau S.A.R.
Philippine Sea
Surat
Nāgpur
Kolkata (Calcutta)
Chittagong
MYANMAR (BURMA)
Nanning
Hanoi
Mumbai (Bombay)
Pune
DECCAN
Mandalay
LAOS
Haiphong
Luzon
Arabian Sea
Hyderābād
WESTERN GHATS
EASTERN GHATS
Nay Pyi Taw
Vientiane
Yangon
Hue
South China Sea
Manila
Bay of Bengal
THAILAND
PRATHET THAI
Bangkok
PHILIPPINES
Bangalore
Chennai (Madras)
VIET NAM
CAMBODIA
Cebu
LAKSHADWEEP (INDIA)
Andaman Sea
SPRATLY ISLANDS
Mindanao
ANDAMAN ISLANDS (INDIA)
Sulu Sea
Cochin
Phnom Penh
Davao
Jaffna
Hồ Chí Minh City (Saigon)
Laccadive Sea
SRI LANKA
Gulf of Thailand
Bandar Seri Begawan
BRUNEI
Colombo
NICOBAR ISLANDS (INDIA)
Celebes Sea
Male
MALAYSIA
MALAYSIA
MALDIVES
Medan
Kuala Lumpur
Singapore
SINGAPORE
Borneo
Pontianak
Equator
Celebes
Sumatra
INDONESIA
Banda Sea
Palembang
Makassar
Java Sea
Jakarta
Dili
EAST TIMOR
Surabaya
Timor
Semarang
Bandung
Timor Sea
Indian
National Capital
Major Cities
Azimuthal Equal-Area Projection
0
800 Kilometer
0
800 Miles

Additional Information

Q) Which of the following is geographically closest to Great Nicobar?

a) Sumatra

b) Borneo

c) Java

d) Sri Lanka

Physiography

Q. Consider the following statements: (2023)

1. Amarkantak Hills are at the confluence of Vidhya and Sahyadri Ranges.
2. Biligirirangan Hills constitute the easternmost part of Satpura Range.
3. Seshachalam Hills constitute the southernmost part of Western Ghats.

How many of the statements given above are correct?

a) Only one
b) Only two
c) All three
d) None

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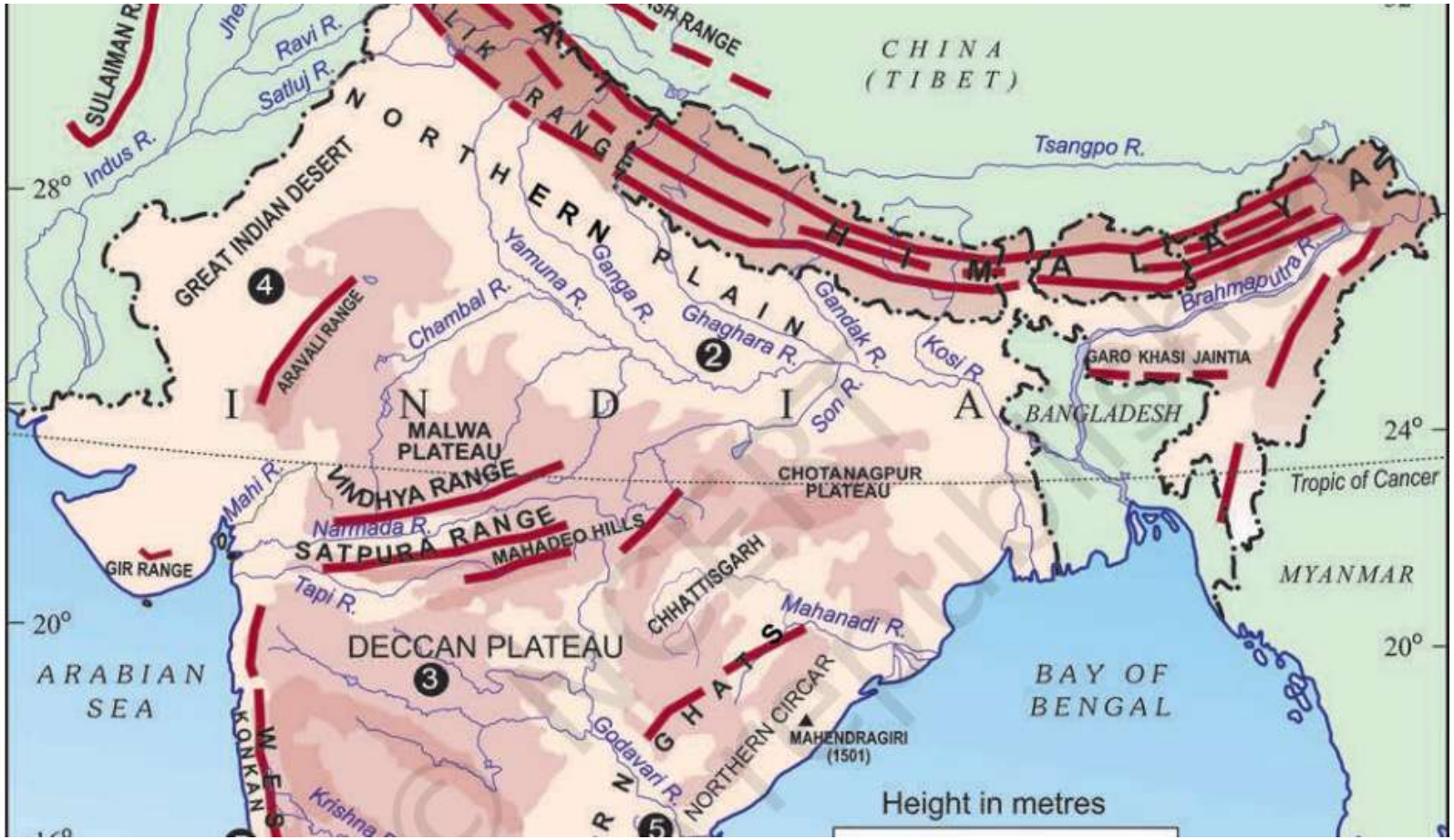
d) None

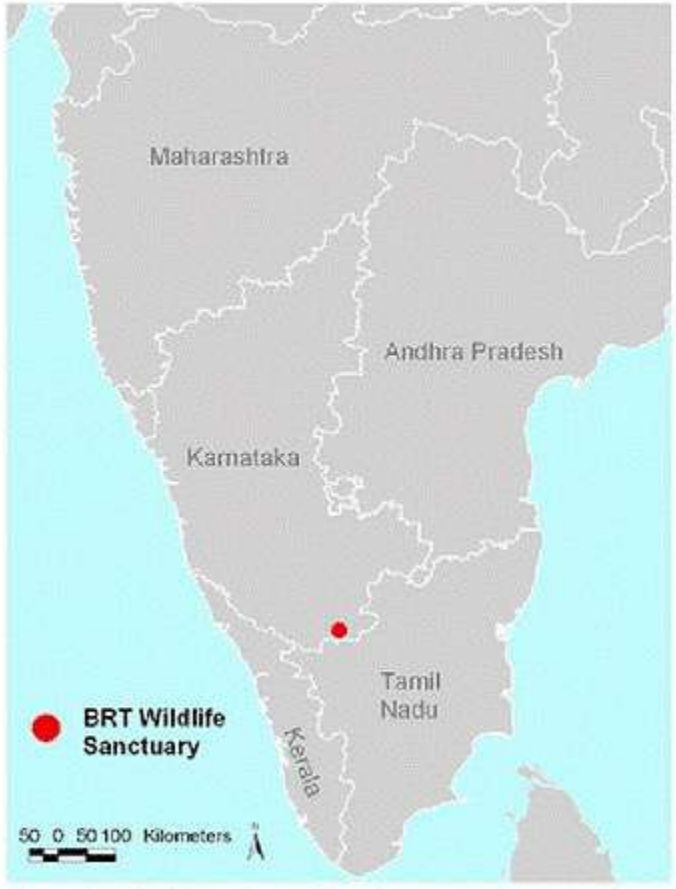
Amarkantak –Madhya Pradesh - at the meeting place of the Vindhya and Satpura mountain ranges



Seshachalam Hills - Tirumala Range - Eastern Ghats in - Andhra Pradesh – Tirupati district

Seshachalam Hills - Tirumala Range - Eastern Ghats in - Andhra Pradesh – Tirupati district

- **The Biligiririrangana Hills Karnataka -** at its border with Tamil Nadu - Biligiri Ranganatha Swamy Temple Wildlife Sanctuary or simply BRT Wildlife Sanctuary.



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Q) Consider the following pairs : (2014)

Hills : Region

1) Cardamom Hills : Coromandel Coast
2) Kaimur Hills : Konkan Coast
3) Maadeo Hills : Central India
4) Mikir Hills : North-East India

Which of the above pairs are correctly matched?

a) 1 and 2
b) 2 and 3
c) 3 and 4
d) 2 and 4

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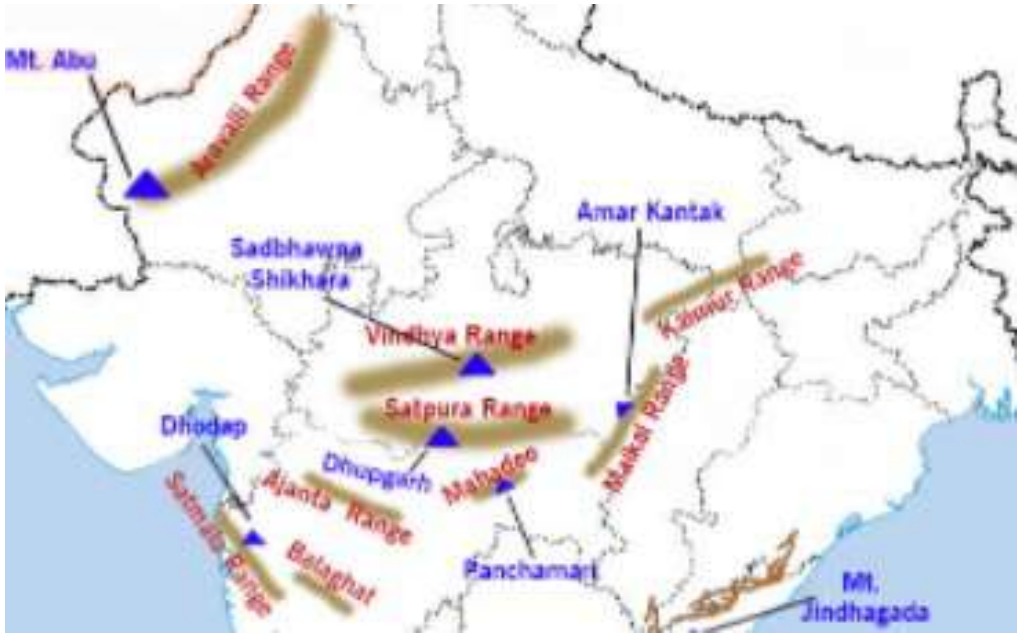
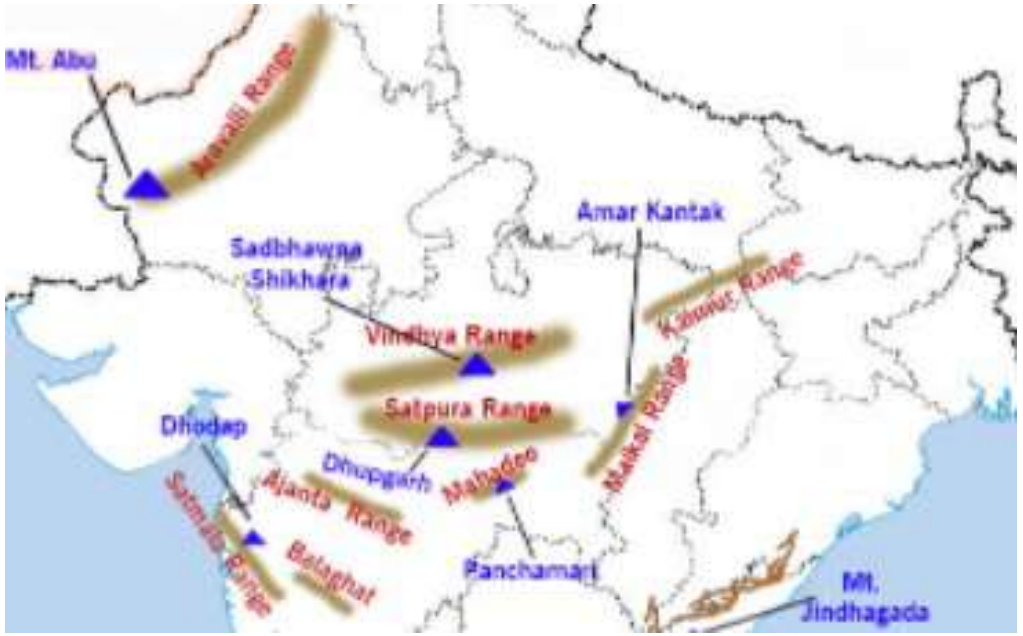
1) Cardamom Hills : Coromandel Coast
2) Kaimur Hills : Konkan Coast
3) Maadeo Hills : Central India
4) Mikir Hills : North-East India

Cardamom Hills : Coromandel Coast - Incorrect

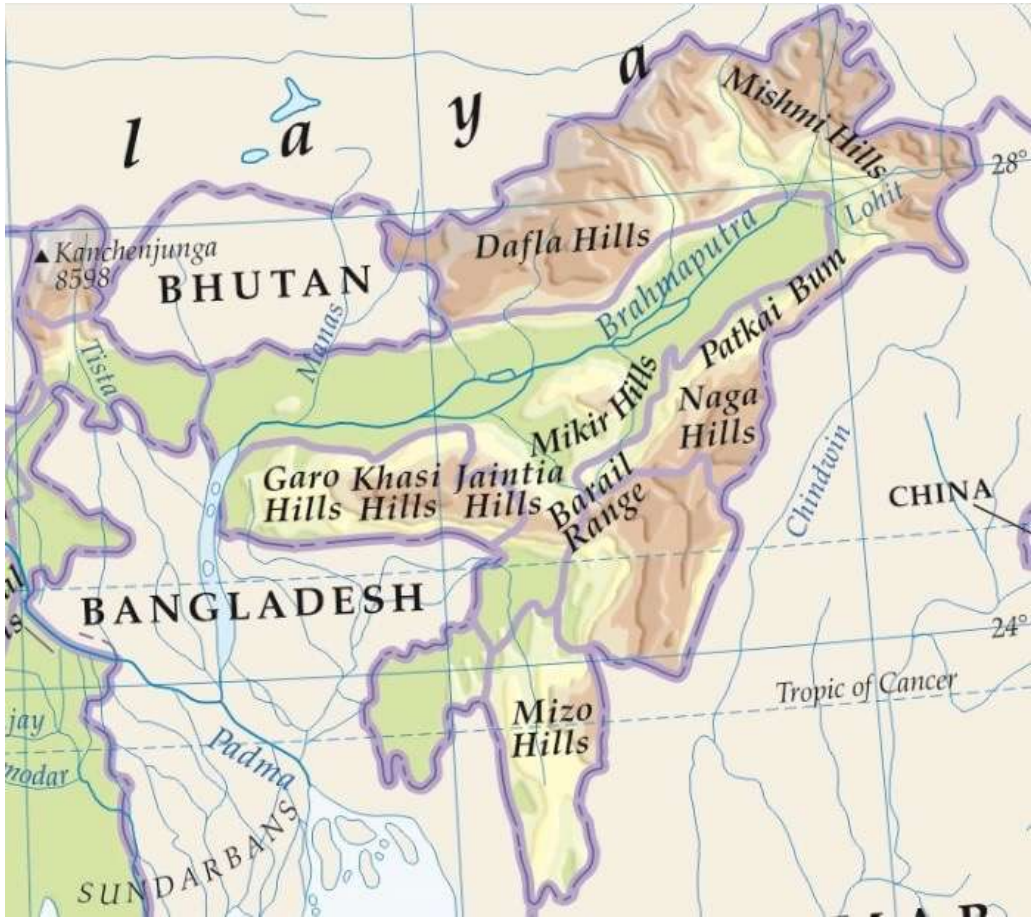
Kaimur Hills - Konkan Coast - Incorrect



Maadeo Hills : Central India- Correct



Mikir Hills : North-East India- Correct



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Which of the above pairs are correctly matched?

a) 1 and 2
b) 2 and 3
c) **3 and 4**
d) 2 and 4

Q) Consider the following pairs: (2016)

Famous Place : Region

1) Bodhgaya : Baghelkhand
2) Khajuraho : Bundelkhand
3) Shirdi : Vidarbha
4) **Nasik (Nashik) : Malwa**
5) Tirupati : Rayalaseema

Which of the pairs given above are correctly matched?

a) 1, 2 and 4
b) 2, 3, 4 and 5
c) 2 and 5 only
d) 1, 3, 4 and 5

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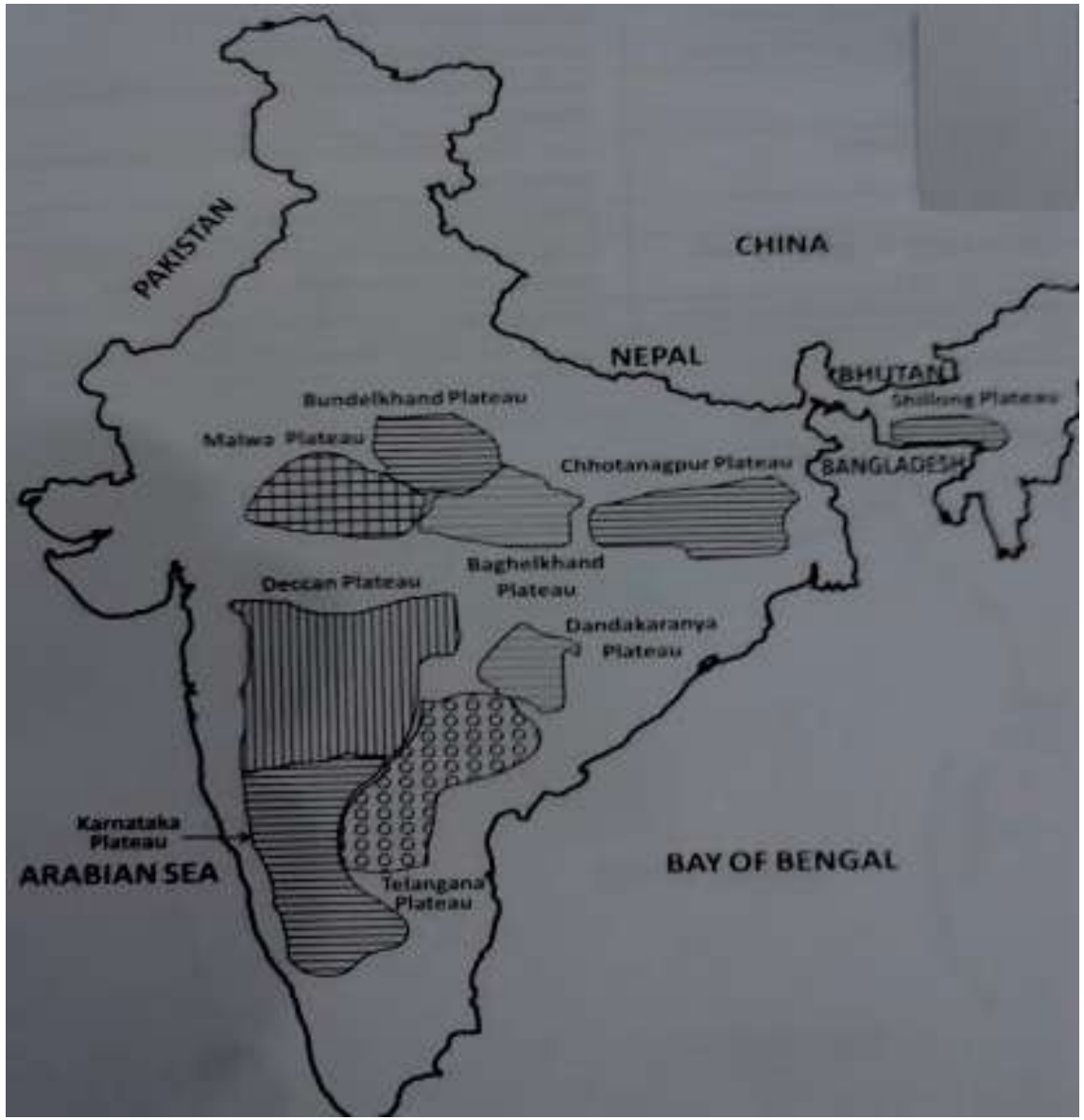
PAKISTAN
CHINA
NEPAL
BHUTAN
Shillong Plateau
BANGLADESH
Bundelkhand Plateau
Malwa Plateau
Chhotanagpur Plateau
Baghelkhand Plateau
Deccan Plateau
Dandakaranya Plateau
Karnataka Plateau
ARABIAN SEA
BAY OF BENGAL
Telangana Plateau

Q. Consider the following pairs : Peak Mountains (2022)

1. Namcha Barwa — Garhwal Himalaya
2. Nanda Devi — Kumaon Himalaya
3. Nokrek — Sikkim Himalaya

Which of the pairs given above is/are correctly matched ?

a) 1 and 2
b) 2 only
c) 1 and 3
d) 3 only

Q. Consider the following pairs : Peak Mountains (2022)

1. **Namcha Barwa — Garhwal Himalaya - Giveway**
2. Nanda Devi — Kumaon Himalaya - **The part of the Himalayas lying between Satluj and Kali rivers is known as Kumaon Himalayas.**
3. Nokrek — Sikkim Himalaya

Which of the pairs given above is/are correctly matched ?

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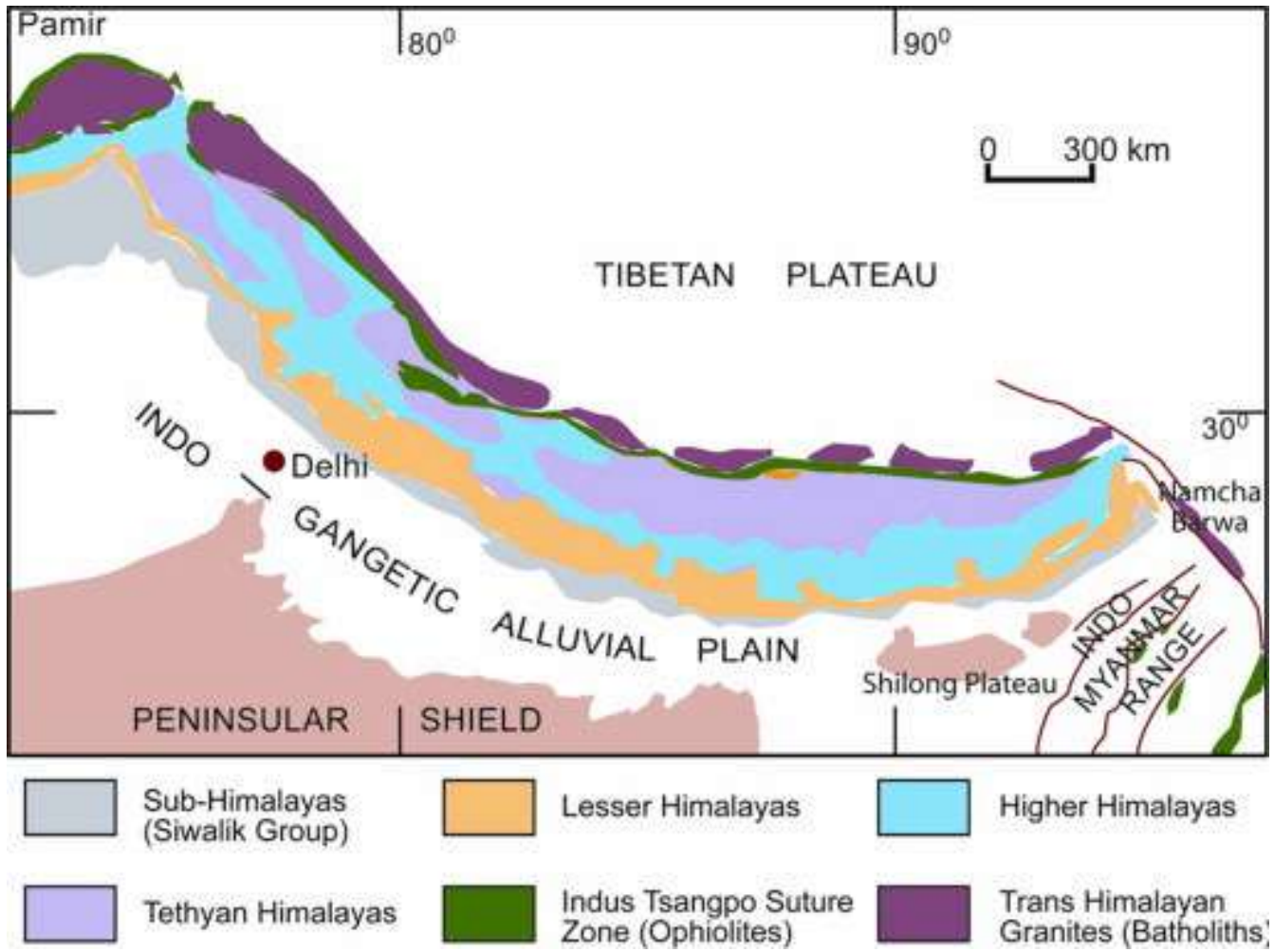
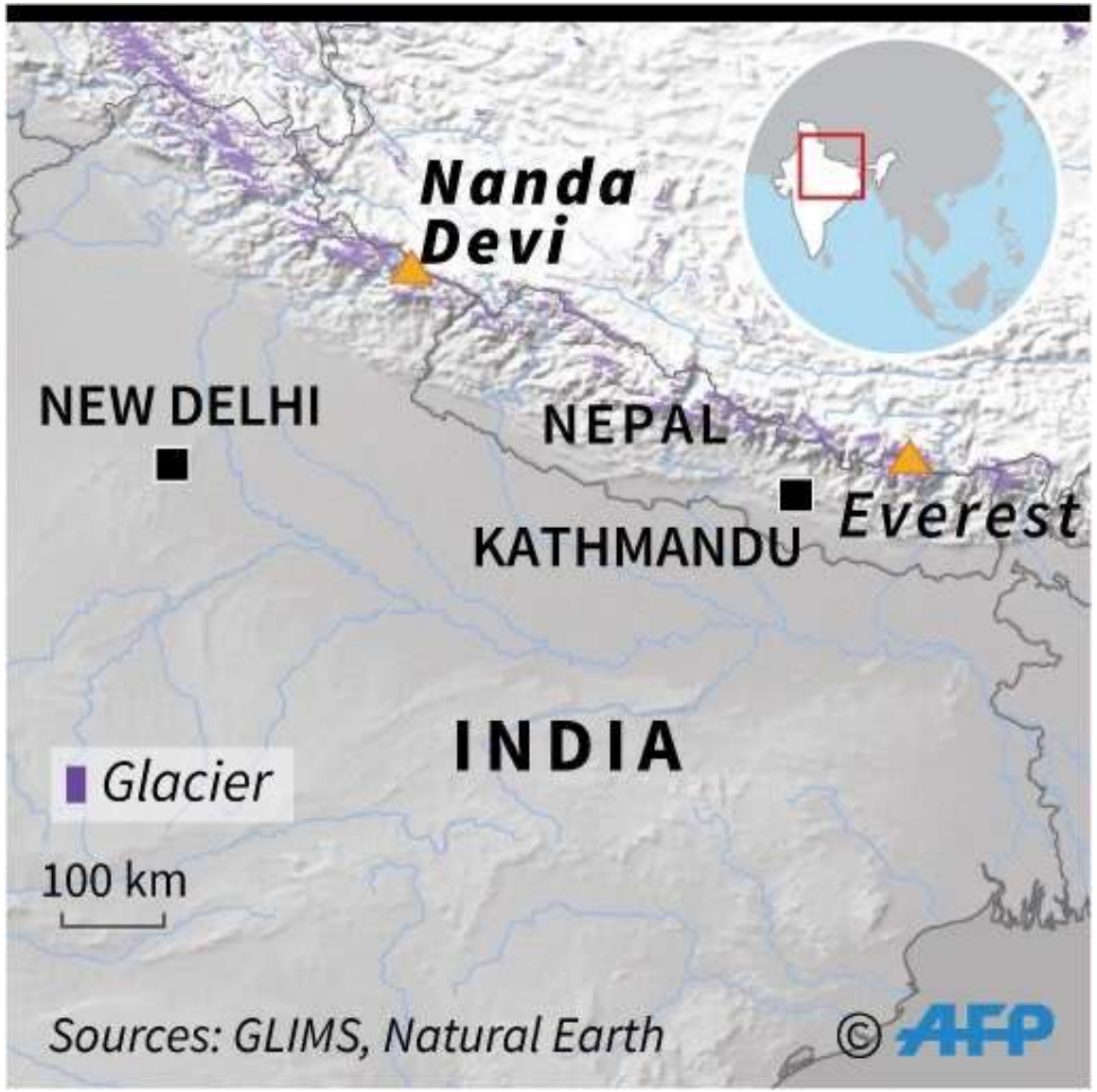

Pamir
80⁰
90⁰
0 300 km
TIBETAN PLATEAU
30⁰
INDO
Delhi
GANGETIC ALLUVIAL PLAIN
Namcha Barwa
INDO MYANMAR RANGE
Shilong Plateau
PENINSULAR SHIELD
Sub-Himalayas (Siwalik Group)
Lesser Himalayas
Higher Himalayas
Tethyan Himalayas
Indus Tsangpo Suture Zone (Ophiolites)
Trans Himalayan Granites (Batholiths)


Nanda Devi
NEW DELHI
NEPAL
KATHMANDU
Everest
INDIA
Glacier
100 km
Sources: GLIMS, Natural Earth
© AFP

- **Pair 3 is not correctly matched:** Nokrek is the highest peak in West Garo Hills of Meghalaya.

Q. Consider the following pairs : Peak Mountains (2022)

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2. Nanda Devi — Kumaon Himalaya - **The part of the Himalayas lying between Satluj and Kali rivers is known as Kumaon Himalayas.**
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Which of the pairs given above is/are correctly matched ?

a) 1 and 2

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d) 3 only

Drainage System

Q) Consider the following rivers : (2014)

1) Barak

2) Lohit

3) Subansiri

Which of the above flows/flow through Arunachal Pradesh?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

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Which of the above flows/flow through Arunachal Pradesh?

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b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Barak River - Barak rises in the Manipur hills and enters the plains near Lakhipur, Assam .The river enters Bangladesh as Surma and Kushiyara. Later, the river is called the Meghna and receives the combined flow of the Ganga and Brahmaputra.

Q) Which of the following is/are tributary/ tributaries of Brahmaputra? (2016)

1) Dibang

2) Kameng

3) Lohit

Select the correct answer using the code given below:

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Q) Which of the following is/are tributary/ tributaries of Brahmaputra? (2016)

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2) Kameng

3) Lohit

Select the correct answer using the code given below:

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b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

- All the given rivers Dibang, Kameng and Lohit are the tributaries of Brahmaputra.

Note : The principal tributaries of the Brahmaputra River joining from the **right** are Kameng, Subansiri, Manas, Sankosh and Teesta whereas Lohit, Dibang, Burhidihing, Desang, Dikhow, Dhansiri **join it from the left.**


ARUNACHAL PRADESH
RIVER MAP
N
CHINA
CHINA
UPPER SIANG
Brahmaputra
Dibang
DIBANG VALLEY
WEST SIANG
UPPER SUBANSIRI
LOWER
DIBANG VALLEY
ANJAW
KURUNG KUMEY
EAST SIANG
Subansiri
LOHIT
Brahmaputra
TAWANG
EAST KAMENG
LOWER
SUBANSIRI
MYANMAR
CHANGLANG
ASSAM
WEST KAMENG
PAPUM PARE
BHUTAN
ITA NAGAR
Kameng
TIRAP
NAGALAND
LEGEND
Country Boundary
State Boundary
District Boundary
State Capital
District HQ

Q) Which of the following is/are tributary/ tributaries of Brahmaputra? (2016)

1) Dibang

2) Kameng

3) Lohit

Select the correct answer using the code given below:

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Q) With reference to river Teesta, consider the following statements: (2017)

1) The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2) River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3) River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

a) 1 and 3 only
b) 2 only
c) 2 and 3 only
d) 1, 2 and 3

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Which of the statements given above is/are correct?

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b) 2 only

c) 2 and 3 only

d) 1, 2 and 3

The Ganges-Brahmaputra Basin

- The Teesta River originates from the **Pahunri glacier and flows southward through the Sikkim Himalaya.**
- Just before the Teesta Bridge, where the roads from Kalimpong and Darjeeling join, the river is met by its main tributary, the Rangeet River..
- It does not flow directly into the Bay of Bengal.

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b) 2 only

c) 2 and 3 only

d) 1, 2 and 3

Q) Consider the following rivers: (2015)

1) Vamsadhara
2) Indravati
3) Pranahita
4) Pennar

Which of the above are tributaries of Godavari?

a) 1, 2 and 3
b) 2, 3 and 4
c) 1, 2 and 4
d) 2 and 3 only

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1) Vamsadhara

2) Indravati

3) Pranahita

4) Pennar

Which of the above are tributaries of Godavari?

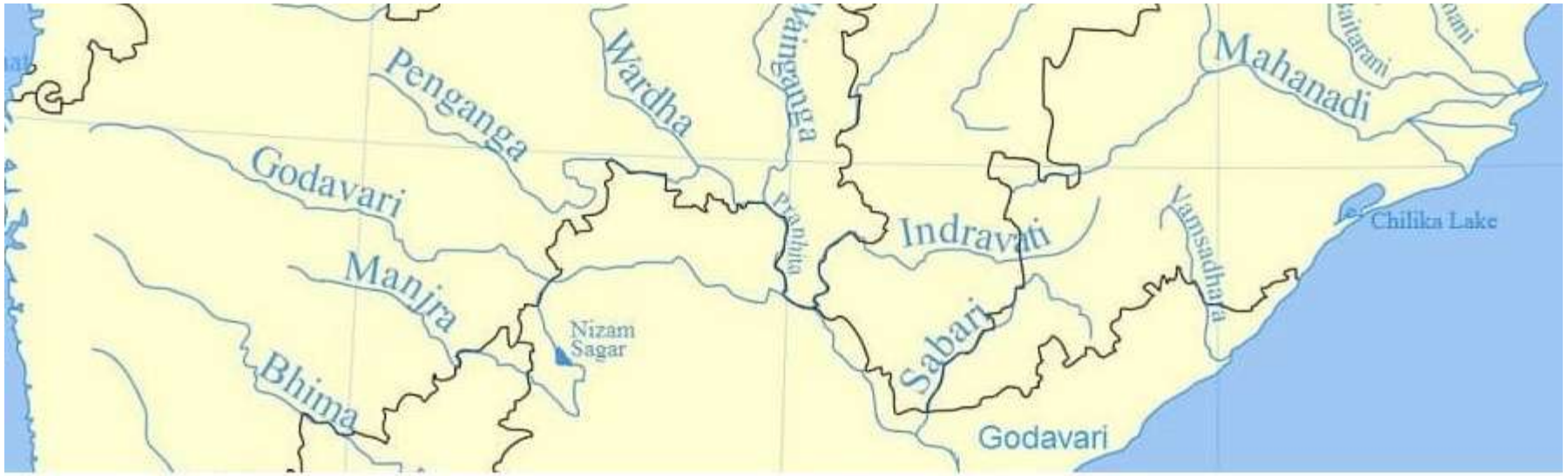
a) 1, 2 and 3

b) 2, 3 and 4

c) 1, 2 and 4

d) 2 and 3 only

- **The Penganga, the Indravati, the Pranhita, and the** Manjra are principal tributaries of the Godavari.



Godavari River

Q.) With reference to the Indus river system, of the following four rivers, three of them pour into one of them which joins the Indus direct. Among the following, which one is such river that joins the Indus direct? (2022)

a) Chenab

b) Jhelum

c) Ravi

d) Sutlej

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a) Chenab

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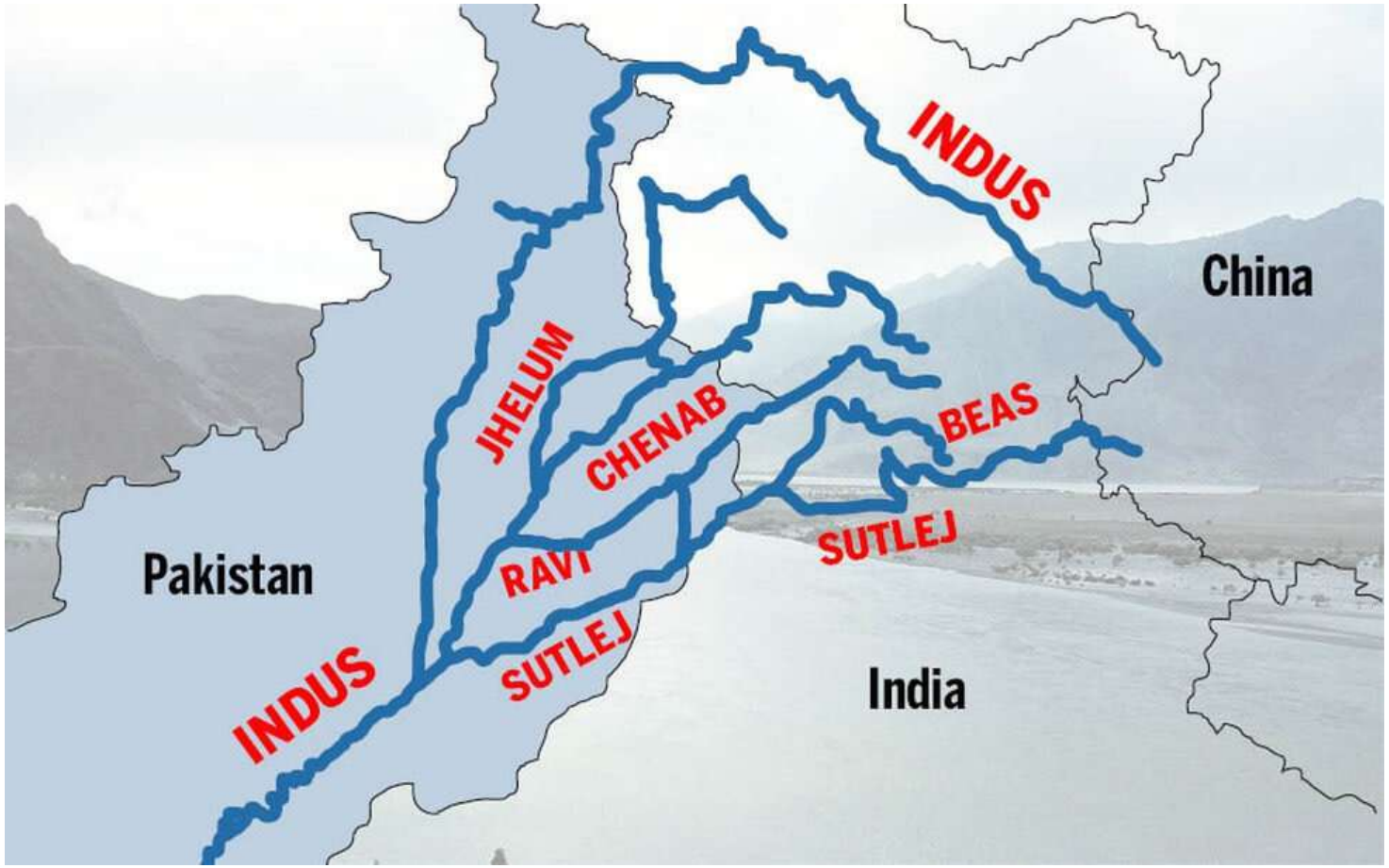
INDUS
China
JHELUM
CHENAB
BEAS
SUTLEJ
Pakistan
RAVI
SUTLEJ
INDUS
India

Q. <u>Consider the following statements: (2023)</u>

1. Jhelum River passes Wular Lake
2. Krishna Rive directly feeds Kolleru
3. Meandering of Gandak River formed Kanwar Lake.

How many of the statements given above are correct?

a) Only one
b) Only two
c) All three
d) None

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- **Main source of water for Wular Lake is River Jhelum**
- **Kolleru Lake** - situated between the two major river basins of the Godavari and the Krishna
- **Kanwar jheel -** It is a residual oxbow lake, formed due to meandering of Burhi Gandak river, a tributary of Ganga

Q) Consider the following pairs: (2019)

Famous Place : River

1) Pandharpur : Chandrabhaga
2) Tiruchirappalli : Cauvery
3) Hampi : Malaprabha

Which of the pairs given above are correctly matched?

a) 1 and 2 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

Q86) Consider the following pairs: (2019)

Famous Place : River

1) Pandharpur : Chandrabhaga

2) Tiruchirappalli : Cauvery

3) Hampi : Malaprabha - Giveaway

Which of the pairs given above are correctly matched?

a) 1 and 2 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

- **Pandharpur -**pilgrimage town - Chandrabhaga River - Maharashtra
- **Tiruchirapalli** - Kaveri River - Tamil Nadu, India.
- **Hampi** - Tungabhadra River – Temples

Q) What is common to the places known as Aliyar, Isapur and Kangsabati? (2019)

a) Recently discovered uranium deposits

b) Tropical rain forests

c) Underground cave systems

d) Water reservoirs

Q) What is common to the places known as Aliyar, Isapur and Kangsabati? (2019)

a) Recently discovered uranium deposits

b) Tropical rain forests

c) Underground cave systems

d) Water reservoirs

- Aliyar (Tamil Nadu) Isapur (Maharashtra) and Kangsabati (West Bengal) are water reservoirs, where water level reached much below the normal capacity.

- **Note : From Current Affairs :** At present, around 18 reservoirs have water level below 50 per cent of normal storage capacity. Of these, six reservoirs (Sholayar, Lower Bhawani, Vaigai, Mettur Stanley, Aliyar, Parambikulam) are in Tamil Nadu, three (Isapur, Yeldari, Pench (Totaladoh) in Maharashtra, two (Vanivilas Sagar, Tungabhadra) in Karnataka, two (Tawa, Barna) in Madhya Pradesh, one each in Gujarat (Sardar Sarovar), Uttar Pradesh (Matatila), Odisha (Balimela), Jharkhand (Tilaiya) and Andhra Pradesh and Telangana (Nagarjuna Sagar).

Q) With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of (2021)

a) Glaciers

b) mangrove areas

c) Ramsar sites

d) Saline lakes

Q) With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of (2021)

a) Glaciers

b) mangrove areas

c) Ramsar sites

d) Saline lakes

- Didwana, Kuchaman, Sargol and Khatu are names of towns with or near saline lakes.

Note :

- Sambhar, Degana, Didwana Kuchaman, Lunkaransar-Tal, and Pachpadra – **Rajasthan – Salt Water Lakes**

- **Additional Information**
- Wular lake - freshwater lakes - formed as a result of tectonic activity.
- Chilika Lake - Odisha largest saline water lake
- Vembanad Lake in Kerala - longest lake

Q) With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of

a) Glaciers

b) mangrove areas

c) Ramsar sites

d) Saline lakes

Q) Which one of the following is an artificial lake? (2018)

a) Kodaikanal (Tamil Nadu)

b) Kolleru (Andhra Pradesh)

c) Nainital (Uttarakhand)

d) Renuka (Himachal Pradesh)

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a) Kodaikanal (Tamil Nadu)

b) Kolleru (Andhra Pradesh)

c) Nainital (Uttarakhand)

d) Renuka (Himachal Pradesh)

- Kodaikanal Lake- a manmade lake - Tamilnadu, India.

- **Note :**
- Largest Artificial Lake in India – Govind Vallabh Pant Sagar.
- Dhebar Lake is India's second-largest artificial lake

- Bhojtal Lake – Madhya Pradesh
- Gobind Sagar Lake – Himachal Pradesh
- Jaisamand Lake (Dhebar Lake) - Rajasthan
- Hussain Sagar Lake –Telangana – Tamil Nadu

Q.) Consider the following rivers: (2021)

1. Brahmani
2. Nagavali
3. Subarnarekha
4. Vamsadhara

Which of the above rise from the Eastern Ghats?

a) 1 and 2

b) 2 and 4

c) 3 and 4

d) 1 and 3

Q.) Consider the following rivers: (2021)

1. Brahmani - **Start Eliminating**
2. Nagavali
3. Subarnarekha
4. Vamsadhara

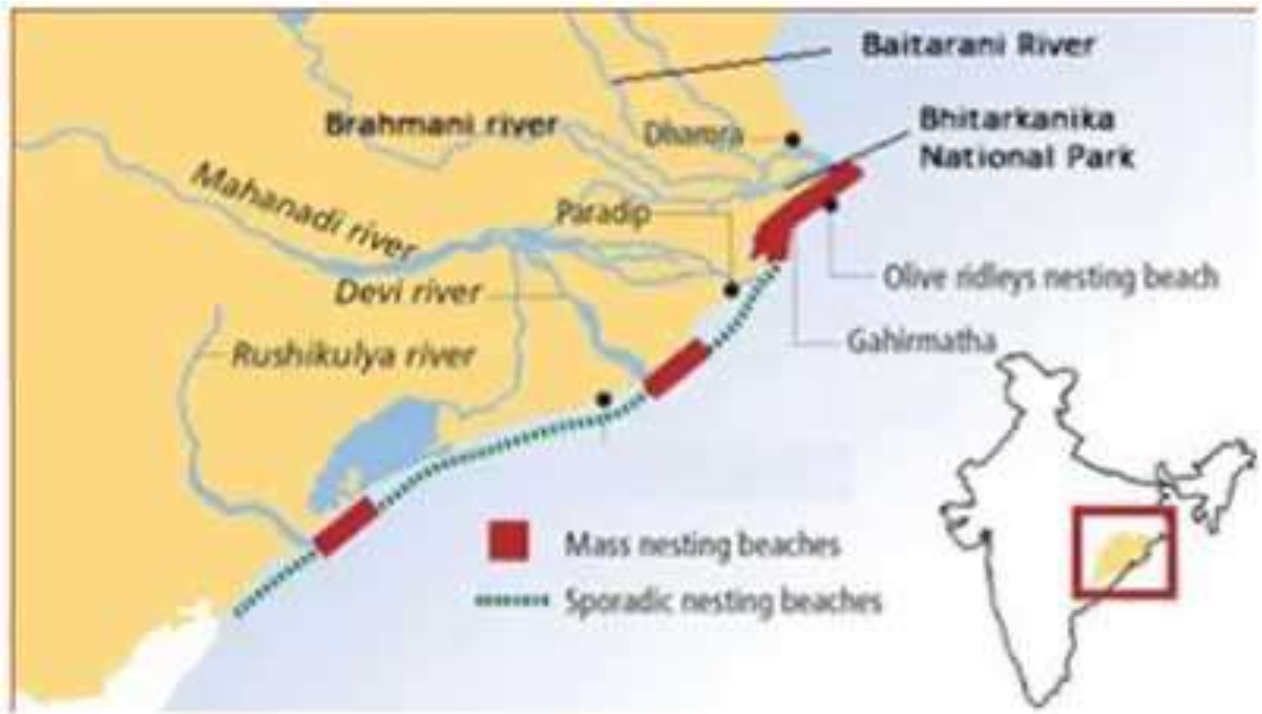
Which of the above rise from the Eastern Ghats?

a) 1 and 2

b) 2 and 4

c) 3 and 4

d) 1 and 3


Baitarani River
Brahmani river
Dhamra
Bhitarkanika
National Park
Mahanadi river
Paradip
Olive ridleys nesting beach
Devi river
Gahirmatha
Rushikulya river
Mass nesting beaches
Sporadic nesting beaches


3
4
1
2
Ganges River
Jamshedpur
Subarnarekha River
Calcutta
BANG
INDIA

- Nagavali River forms a prime river of north eastern Andhra Pradesh and southern Odisha. The origin of Nagavali River lies in the eastern slopes of the Eastern Ghats near Lakhbahal.
- Vamsadhara river rises in the Eastern Ghats on the border Kalahandi district and Rayagada district of Odisha.

RESOURCES

Q)Which of the following is/are the characteristic/characteristics of Indian coal? (2013)

1) High ash content
2) Low sulphur content
3) Low ash fusion temperature

Select the correct answer using the codes given below:

a) 1 and 2 only
b) 2 only
c) 1 and 3 only
d) 1, 2 and 3

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- The most significant characteristic of **Indian coal is its high ash content**, which varies from 35 to 45 per cent, compared with that of coal in other parts of the world, which is around 15 per cent - **Note : Theories of Coal Formation**
- **1) Insitu 2) Drift Theory**

- Besides high ash content, another reason for entrained gasifiers (that operate at higher temperatures than fluidised bed gasifiers), commonly used in IGCC plants abroad, being not suitable for Indian coal is its **high ash fusion temperature of about 1,500**

- **However, Indian coal's sulphur content is low, about 0.5 per cent.**

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c) 1 and 3 only

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Q) Consider the following statements:

1) In India, State Governments do not have the power to auction noncoal mines.
2) Andhra Pradesh and Jharkhand do no have gold mines.
3) Rajasthan has iron ore mines.

Which of the statements given above is/are correct?

a) 1 and 2
b) 2 only
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- Unlike coal, the auction of mining licences of non-coal minerals is conducted by the respective state governments- January 2015
- **In Rajasthan**, Iron-Ore deposits are located in the district of Jaipur, Udaipur, Jhunjhunu, Sikar, Bhilwara, Alwar, Bharatpur, Dausa and Banswara.
- India has gold deposits spread across several states including **Andhra Pradesh, Chhattisgarh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Tamil Nadu and Rajasthan.**

Note : Jharkhand is one of the most mineral-rich states in India. Jharkhand has gold mines like **Rungta mines**.

There are known **deposits of gold bearing quartz rocks in the Rayalaseema region of AP**, including Anantapur, Chittoor and Kurnool while in **Jharkhand gold mines** are in Eastern Singhbum district

Additional Information - Gold Fields in India

- Gold fields in the country- **Kolar Gold Field, Kolar district, Hutti Gold Field in Raichur district (both in Karnataka) and Ramgiri Gold Field in Anantpur district (Andhra Pradesh).**

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Q) Consider the following statements: (2013)

1) Natural gas occurs in the Gondwana beds.

2) Mica occurs in abundance in Kodarma.

3) Dharwars are famous for petroleum.

Which of the statements given above is/are correct?

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b) 2 only

c) 2 and 3

d) None

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d) None

- **Gondwana is famous for Coal Fields not Natural Gas.** Coal formed about 350 million years ago in the Carboniferous age is called Gondwana Coal.
- Dharwar – Iron,Manganese etc
- **Mica – Kodarma Mines , Jharkhand**

- **Note : Distribution of Coal in India**
- Gondwana coal fields [250 million years old]
- Tertiary coal fields [15 – 60 million years old]

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Q) In which of the following regions of India are shale gas resources found? (2016)

1) Cambay Basin

2) Cauvery Basin

3) Krishna-Godavari Basin

Select the correct answer using the code given below:

a) 1 and 2 only

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Prospective basins for phase 1 shale oil and gas exploration

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Q. With reference to two non-conventional energy sources called 'coal bed methane' and 'shale gas', consider the following 'statements:

1. Coal bed methane is the pure methane gas extracted from coal seams, while shale gas is a mixture of propane and butane only that can be extracted from fine-grained sedimentary rocks.
2. In India abundant coal bed methane sources exist, but so far no shale gas sources have been found.

Which of the statements given above is/are correct?

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c) Both 1 and 2

d) Neither 1 nor 2

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2. In India abundant coal bed methane sources exist, but so far **no shale gas sources have been found.**

Which of the statements given above is/are correct?

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Q. About three-fourths of world's cobalt, a metal required for the manufacture of batteries for electric motor vehicles, is produced by(2023)

a) Argentina
b) Botswana
c) the Democratic Republic of the Congo
d) Kazakhstan

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a) Argentina

b) Botswana

c) **the Democratic Republic of the Congo- home to half of the world's known resources- accounts for around 70% of global production.**

d) Kazakhstan

Q. <u>Consider the following pairs</u>: (2023)

Port		**Well known as**
1. Kamarajar Port	:	First major port in India registered as a company
2. Mundra Port	:	Largest privately owned port in India
3. Visakhapatnam Port	:	Largest container, port in India

How many of the above pairs are correctly matched?

a) Only one pair

b) Only two pairs

c) All three pairs

d) None of the pairs

Q. Consider the following pairs:

Port	Well known as
1. Kamarajar Port :	First major port in India registered as a company – **Corporatised Major Port – Companies Act**
2. Mundra Port :	**Largest privately owned port in India**
3. Visakhapatnam Port :	Largest container, port in India **– JNPT/Mundra**

How many of the above pairs are correctly matched?

a) Only one pair

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Q) With reference to the management of minor minerals in India, consider the following statements: (2019)

1) Sand is a 'minor mineral' according to the prevailing law in the country.
2) State Governments have the **power to grant mining leases of minor minerals**, but the **powers regarding the formation of rules** related to the grant of minor minerals lie with the Central Government.
3) State Government have the **power to frame rules to prevent illegal mining of minor minerals.**

Which of the statements given above is/are correct?

a) 1 and 3 only
b) 2 and 3 only
c) 3 only
d) 1, 2 and 3

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Which of the statements given above is/are correct?

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c) 3 only

d) 1, 2 and 3

- Sand is a **minor mineral, as defined under section 3(e) of the Mines and Minerals Act, 1957 (MMDR Act**).
- As per Section 15 of the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957, **State Governments have been empowered to frame rules in respect of minor minerals** for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals and for purposes connected therewith.
- Sec 23C of the MMDR Act, 1957 empowers state governments to frame rules **to prevent illegal mining, transportation and storage of minerals and for purposes** connected therewith. Control of illegal mining is, therefore, under the legislative and administrative jurisdiction of state governments.

Q) Consider the following minerals:

1) Bentonite
2) Chromite
3) Kyanite
4) Sillimanite In India

Which of the above is/are officially designated as major minerals?

a) 1 and 2 only
b) 4 only
c) 1 and 3 only
d) 2, 3 and 4 only

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- Bentonite - **'Minor Mineral' 2015 – GOI notification**

- **Note :**
- There is **no official definition** for "major minerals" in the MMDR Act(Mines and Minerals (Development and Regulation) Act, 1957).
- Hence, whatever is not declared as a "minor mineral" may be treated as the major mineral.
- **Major minerals** are **those specified** in the **first schedule** appended in the **MMDR Act 1957**

Q. With reference to India, consider the following statements: (2022)

1. Monazite is a source of rare earths.
2. Monazite contains thorium.
3. **Monazite occurs naturally in the entire Indian coastal sands in India.**
4. In India, Government bodies only can process or export monazite.

Which of the statements given above are correct ?

a) 1, 2 and 3 only
b) 1, 2 and 4 only
c) 3 and 4 only
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- Monazite is a mineral - rare earths and thorium-a prescribed substance to be handled by the Department of Atomic Energy (DAE).
- Accordingly, Indian Rare Earths Ltd. (IREL) wholly owned by the Govt. of India, under the administrative control of the Dept. of Atomic Energy (DAE) utilises monazite mainly for production of rare earth compounds, and thorium, as needed in the Department of Atomic Energy.

Q. Ilmenite and rutile, abundantly available certain coastal tracts of India, are rich sources of which one of the fallowing? (2023)

a) Aluminium

b) Copper

c) Iron

d) Titanium

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Explanation

- **Heavy mineral sands -** seven minerals **- ilmenite, leucoxene (brown ilmenite), rutile, zircon, sillimanite, garnet and monazite**. **Ilmenite ($FeO.TiO_2$) and rutile (TiO_2) are the two chief minerals of titanium. -** constituents of beach sand deposits found right from Moti Daman-Umbrat coast (Gujarat) in the west to Odisha coast in the east.

Q) Consider the following pairs: (2014)

National Highway Cities connected

1) NH4 : Chennai and Hyderabad

2) NH6 : Mumbai and Kolkata

3) NH15: Ahmedabad and Jodhpur

Which of the above pairs is/are correctly matched?

a) 1 and 2 only

b) 3 only

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d) None

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- NH4 - Bengaluru-Chennai
- NH6 - Surat-Kolkata
- NH15 - Samakhiali in Gujarat with Pathankot in Punjab

Q) In India, the steel production industry requires the import of (2015)

a) saltpetre

b) rock phosphate

c) coking coal

d) All of the above.

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a) saltpetre

b) rock phosphate

c) coking coal

d) All of the above.

- The coal found in India is mainly of non-coking quality and hence coking coal has to be imported.
- Coke is used as a **fuel and as a reducing agent in smelting iron ore in a blast furnace.**
- **Note :** Metallurgical coal or coking coal is a grade of coal that can be used to produce good-quality coke – **naturally occurring sedimentary rock – key material in the production of steel.**

AGRICULTURE

Q) Which of the following is the chief characteristic of 'mixed farming'? (2012)

a) Cultivation of both cash crops and food crops.

b) Cultivation of two or more crops in the same field.

c) Rearing of animals and cultivation of crops together.

d) None of the above.

Q) Which of the following is the chief characteristic of 'mixed farming'? (2012)

a) Cultivation of both cash crops and food crops.

b) Cultivation of two or more crops in the same field.

c) Rearing of animals and cultivation of crops together.

d) None of the above.

- Mixed farming is a **type of farming which involves both the growing of crops and the raising of livestock.**

Note :

Mixed Cropping: **Two or more crops** are grown on a same piece of **land simultaneously.**

Q. The lower Gangetic plain is characterised by humid climate with high temperature throughout the year. Which one among the following pairs of crops is most suitable for this region? (2011)

a) Paddy and cotton

b) Wheat and Jute

c) Paddy and Jute

d) Wheat and cotton


IMACHAL
RADESH
UTTARAKHAND
YANA
New Delhi
नई दिल्ली
UTTAR
PRADESH
Lucknow
लखनऊ
Nepal
Kathmandu
काठमांडौं
SIKKIM
Bhutan
BIHAR
Banglades
JHARKHAND
WEST BENGAL
MADHYA
PRADESH
India
Chhindwara
छिंदवाड़ा

Q) Consider the following crops:

1) Cotton
2) Groundnut
3) Rice
4) Wheat

Which of these are Kharif crops?

a) 1 and 4
b) 2 and 3 only
c) 1, 2 and 3
d) 2, 3 and 4

Q) Consider the following crops:

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2) Groundnut
3) Rice
4) Wheat - **Giveaway**

Which of these are Kharif crops?

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Rabi Crops

- **BMWLPG –**
- Wheat
- Barley
- Gram
- Pulses
- Mustard
- Linseed

Kharif Crops

- Rice
- Maize
- Sorghum
- Bajra
- Soybean
- Cotton

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Q) In the context of food and nutritional security of India, enhancing the 'Seed Replacement Rates' of various crops helps in achieving the food production targets of the future. But what is/are the constraint/constraints in its wider/greater implementation ?

1) There is no National Seeds Policy in place.
2) There is no participation of private sector seed companies in the supply of quality seeds of vegetables and planting materials of horticultural crops.
3) There is a demand-supply gap regarding quality seeds in case of low value and high volume crops.

Select the correct answer using the code given below:

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d) None

- **Seed Replacement Rate** is the **percentage of area sown out** of the total area of crop planted in the season by **using certified/quality seeds other than the farm saved seed.**

- India has a **National Seeds Policy 2002.** National Seed Policy was launched in 2002 for **intellectual property protection to new varieties, planned development; protection of the interest of farmers and encourage conservation of agro-biodiversity.**

- Private companies are operating in supplying seeds- Hybrid Seeds

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Q) What are the benefits of implementing the 'Integrated Watershed Development Programme?

1) Prevention of soil runoff
2) Linking the country's perennial rivers with seasonal rivers
3) Rainwater harvesting and recharge of groundwater table
4) Regeneration of natural vegetation

Select the correct answer using the code given below:

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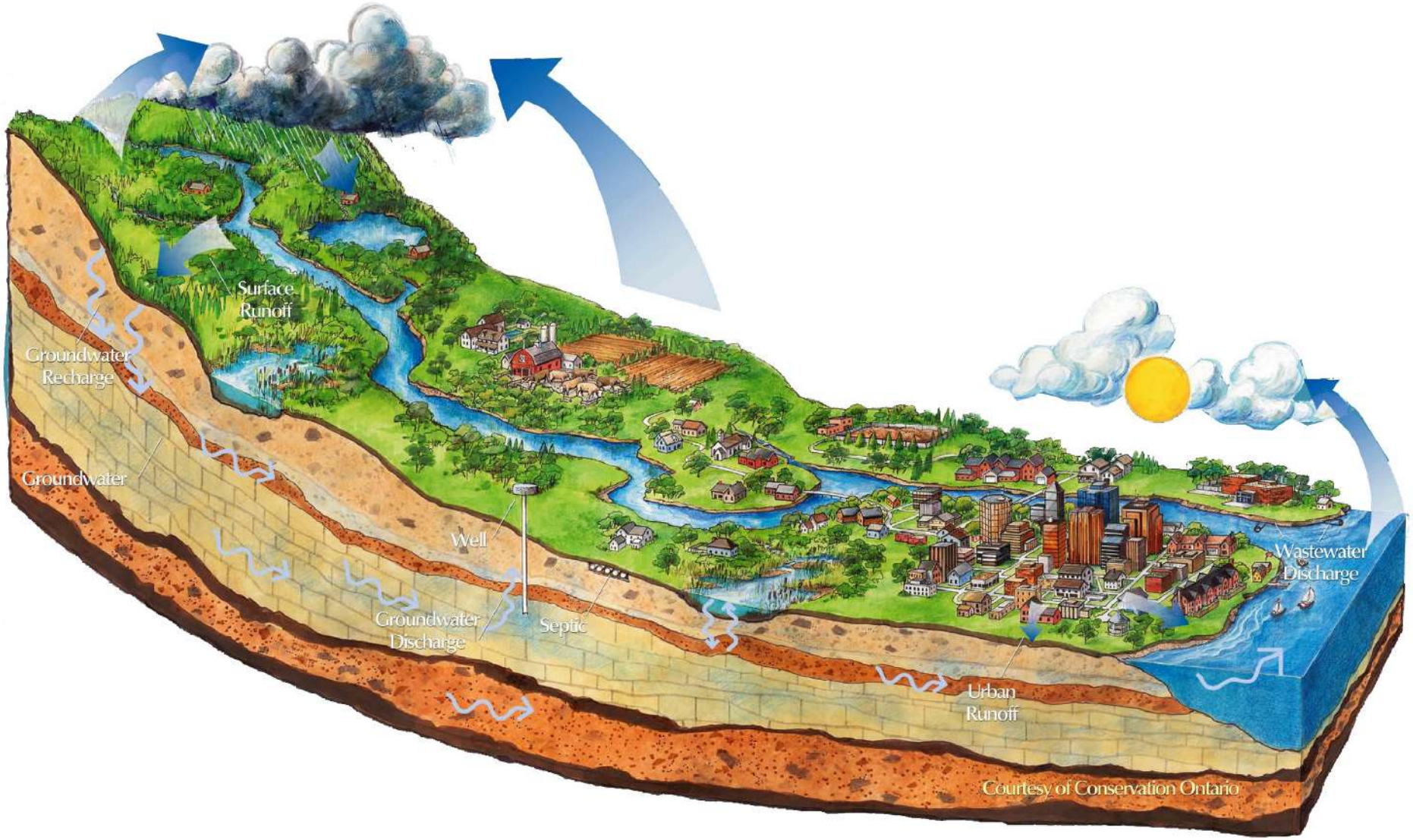
Surface Runoff
Groundwater Recharge
Groundwater
Well
Groundwater Discharge
Septic
Urban Runoff
Wastewater Discharge
Courtesy of Conservation Ontario

- Integrated watershed development programme no where mentions interlinking of rivers.
- It envisages **restoring the ecological** balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover & water through watershed management initiatives.
- The outcomes of IWMP are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table.

Q) (2020)

I. **"The crop is subtropical in nature.**

II. **A hard frost is injurious to it. It requires at least 210 frost -free days and 50 to 100 centimeters of rainfall for its growth.**

III. **A light well -drained soil capable of retaining moisture is ideally suited for the cultivation of the crop."**

Which one of the following is that crop?

a) Cotton

b) Jute

c) Sugarcane

d) Tea

Q) (2020)

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- **Giveaway Point -** 200 Frost Free Days : Cotton

- **Temperature:** Between 21-30°C
- **Rainfall:** Around 50-100cm –Light Rainfall
- **Soil Type:** Well-drained **black cotton soil of Deccan Plateau**.
- **Hard-frost is injurious** to cotton cultivation and it **requires at least 210 frost-free days.**
- It requires high temperature and bright sunshine for its growth.

Q)

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Q.) Among the following, which one is the least water efficient crop? (2021)

a) Sugarcane

b) Sunflower

c) Pearl millet

d) Red gram

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b) Sunflower

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d) Red gram

- Among the given options, its water requirement is 1800-2200 mm/season which is highest. It takes about 210 litres of water to produce 1 kg of sugar cane.
- Water footprint of sunflower is 7– 9 litre per kg.
- Millets are sown in dry areas with minimal irrigation. Pearl millet is a drought tolerant crop.
- As Red gram is a rain-fed crop grown in assured rainfall areas, usually it does not need any irrigation.

IDENTIFY THE STATE

Q. Among the following States, which one has the most suitable climatic conditions for the cultivation of a large variety of orchids with minimum cost of production, and can develop an export oriented industry in this field? (2011)

a) Andhra Pradesh

b) Arunachal Pradesh

c) Madhya Pradesh

d) Uttar Pradesh

Q. Among the following States, which one has the most suitable climatic conditions for the cultivation of a large variety of orchids with minimum cost of production, and can develop an export oriented industry in this field? (2011)

a) Andhra Pradesh

b) Arunachal Pradesh – Orchid State of India

c) Madhya Pradesh

d) Uttar Pradesh

- Arunachal Pradesh has the highest number of orchid species (around 622 species) reported from the state.

- Arunachal Pradesh has also been termed as 'Orchid Paradise of India' because of the maximum concentration of orchid species (about 40% of the country) in the State.

Q. A state in India has the following characteristics: (2011)

1. Its northern part is arid and semi-arid.
2. Its central part produces cotton.
3. Cultivation of cash crops is predominant over food crops.

Which one of the following states has all of the above characteristics?

a) Andhra Pradesh
b) Gujarat
c) Karnataka
d) Tamil Nadu

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d) Tamil Nadu

Q) A particular State in India has the following characteristics:- 2012 – Latest Data might differ (2012)

1. It is located on the **same latitude which passes through northern Rajasthan.**
2. It has over **80% of its area under forest cover**
3. Over **12% of forest cover constitutes Protected Area Network in this State.**

Which one among the following States has all the above characteristics?

a) Arunachal Pradesh
b) Assam
c) Himachal Pradesh
d) Uttarakhand

Q3) A particular State in India has the following characteristics: -(2012) – Latest Data might differ (2012)

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INDIA
States and Union Territories
INDIA FLAG
TAJIKISTAN
AFGHANISTAN
PAKISTAN
CHINA (TIBET)
NEPAL
BHUTAN
BANGLADESH
MYANMAR (BURMA)
SRI LANKA
LADAKH
Srinagar
Leh
JAMMU & KASHMIR
Jammu
HIMACHAL PRADESH
Shimla
PUNJAB
CHANDIGARH
Dehradun
UTTARAKHAND
HARYANA
DELHI
New Delhi
Jaipur
RAJASTHAN
UTTAR PRADESH
Lucknow
SIKKIM
Gangtok
Itanagar
ARUNACHAL PRADESH
Dispur
ASSAM
NAGALAND
Kohima
Shillong
MEGHALAYA
Imphal
MANIPUR
Agartala
TRIPURA
Aizawl
MIZORAM
BIHAR
Patna
JHARKHAND
Ranchi
WEST BENGAL
Kolkata
Gandhinagar
GUJARAT
Bhopal
MADHYA PRADESH
CHHATTISGARH
Raipur
ODISHA
Bhubaneswar
BAY OF BENGAL
Daman
DADRA & NAGAR HAVELI AND DAMAN & DIU
MAHARASHTRA
Mumbai
TELANGANA
Hyderabad
Amaravati
Yanam (Puducherry)
ARABIAN SEA
Panaji
GOA
KARNATAKA
ANDHRA PRADESH
Bengaluru
Chennai
LAKSHADWEEP (INDIA)
Mahe (Puducherry)
PUDUCHERRY
TAMIL NADU
KERALA
Kavaratti
Karaikal (Puducherry)
Port Blair
ANDAMAN & NICOBAR ISLANDS (INDIA)
Palk Strait
Thiruvananthapuram
LEGEND
International Boundary
State/UT Boundary
Country Capital
State/UT Capital
Map not to Scale
INDIAN OCEAN
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MAP BASED QUESTIONS

INDIA

Q) Siachen Glacier is situated to the (2020)

a) East of Aksai Chin

b) East of Leh

c) North of Gilgit

d) North of Nubra Valley

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a) East of Aksai Chin

b) East of Leh

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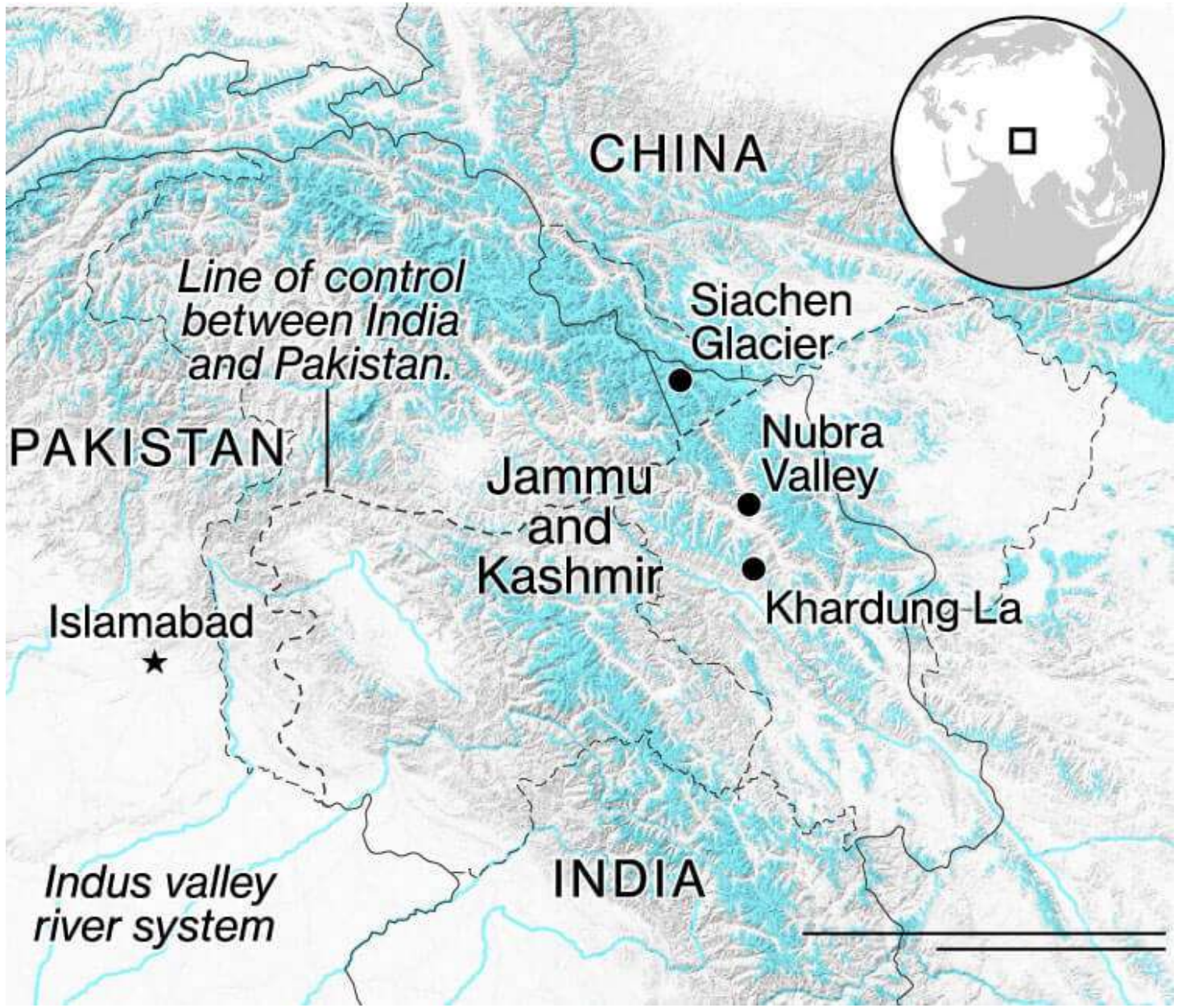
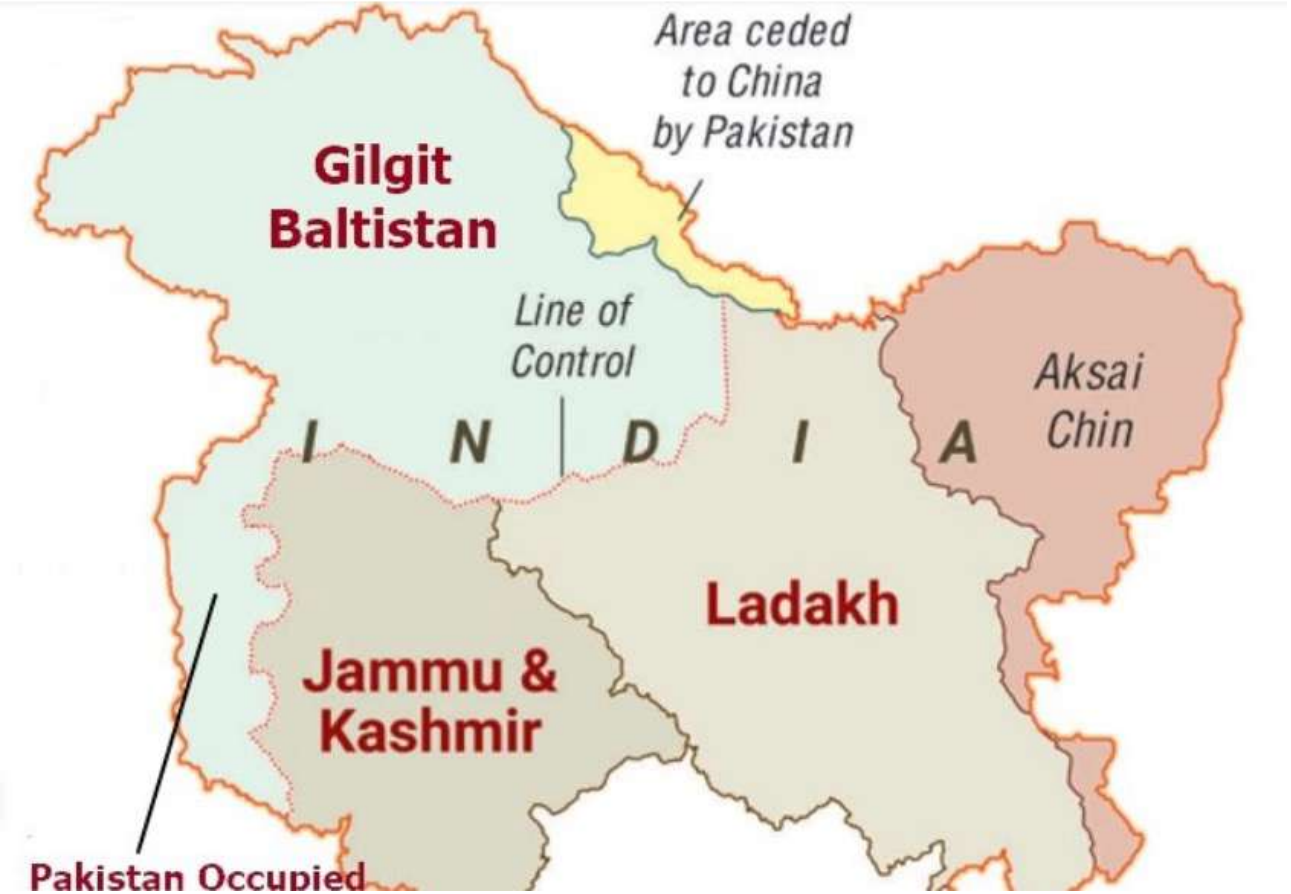
d) North of Nubra Valley


CHINA
Line of control between India and Pakistan.
Siachen Glacier
PAKISTAN
Nubra Valley
Jammu and Kashmir
Khardung La
Islamabad
Indus valley river system
INDIA

By Elimination

Depicting Disputes




Depsang Plains
Ladakh
Daulat Beg Oldie
Galwan
J&K
Leh
Shyok
Srinagar
Darbuk
PAKISTAN
CHINA

Q) Siachen Glacier is situated to the

a) East of Aksai Chin

b) East of Leh

c) North of Gilgit

d) North of Nubra Valley

Q) Consider the following pairs: (2019)

Glacier : River

1) Bandarpunch : Yamuna
2) Bara Shigri : Chenab
3) Milam : Mandakini
4) Siachen : Nubra
5) Zemu : Manas

Which of the pairs given above are correctly matched?

a) 1, 2 and 4
b) 1, 3 and 4
c) 2 and 5
d) 3 and 5

Q) Consider the following pairs: (2019)

Glacier : River

1) Bandarpunch : Yamuna

2) Bara Shigri : Chenab – Second One

3) Milam : Mandakini

4) Siachen : Nubra

5) Zemu : Manas - State eliminating

Which of the pairs given above are correctly matched?

a) 1, 2 and 4

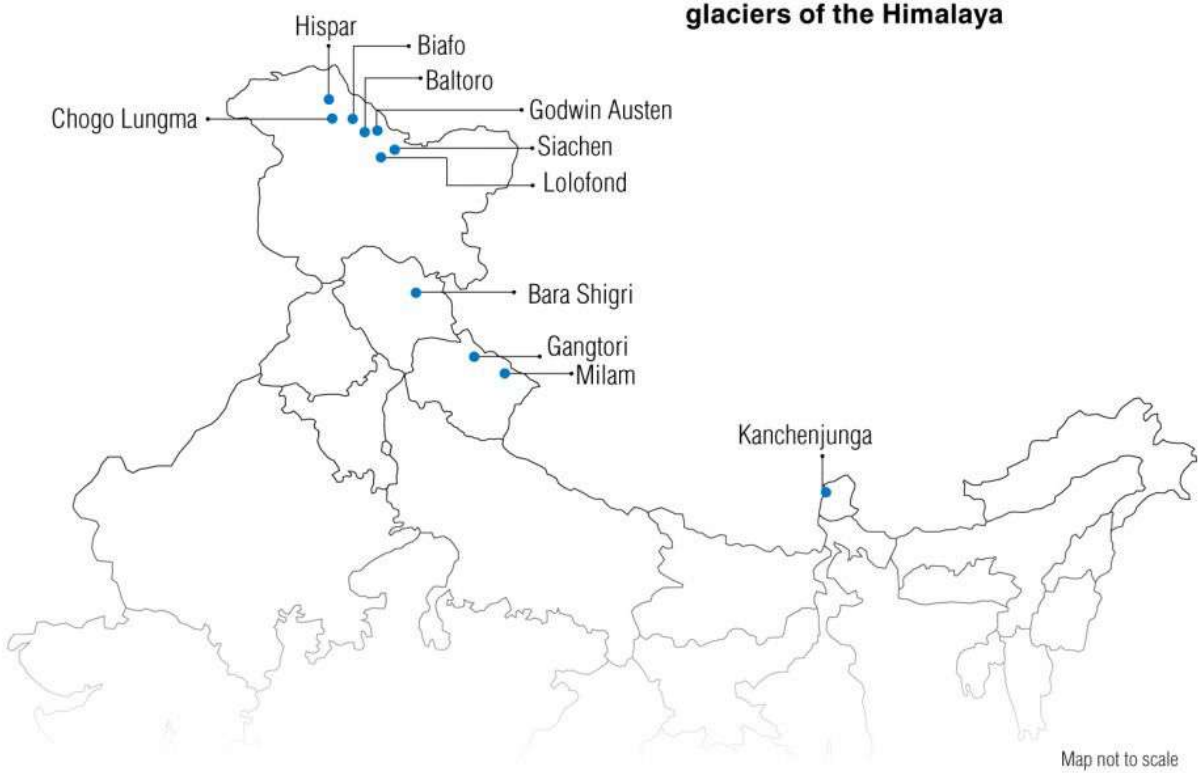
b) 1, 3 and 4

c) 2 and 5

d) 3 and 5


NOT TO SCALE
HISPAR
BALTORO
SIACHEN
BIAFO
GANGOTRI
MILAM
PINDARI
RONGBUK
ZEMU

Fig. 1: Locations of the largest glaciers of the Himalaya



Q) Consider the following pairs: (2015)

Place of Pilgrimage - Location

1) Srisailam - Nallamala Hills

2) Omakareshwar - Satmala Hills

3) Pushkar - Mahadeo Hills

Which of the above pairs is/are correctly matched ?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

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Place of Pilgrimage - Location

1) Srisailam - Nallamala Hills

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Which of the above pairs is/are correctly matched ?

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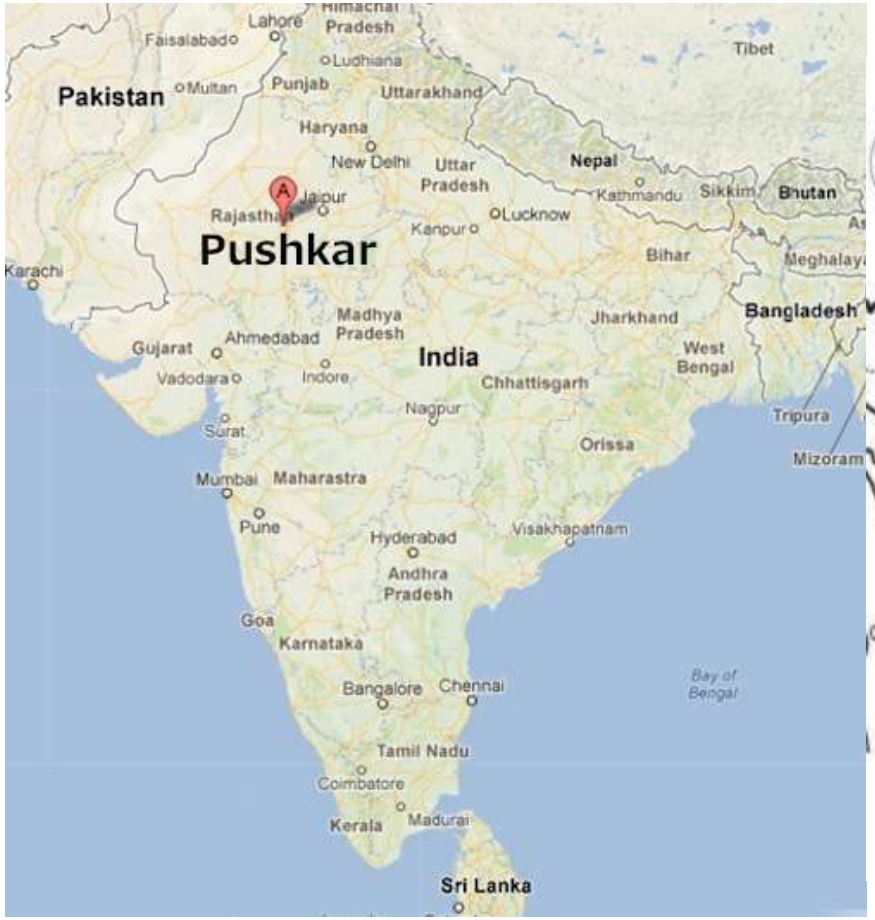
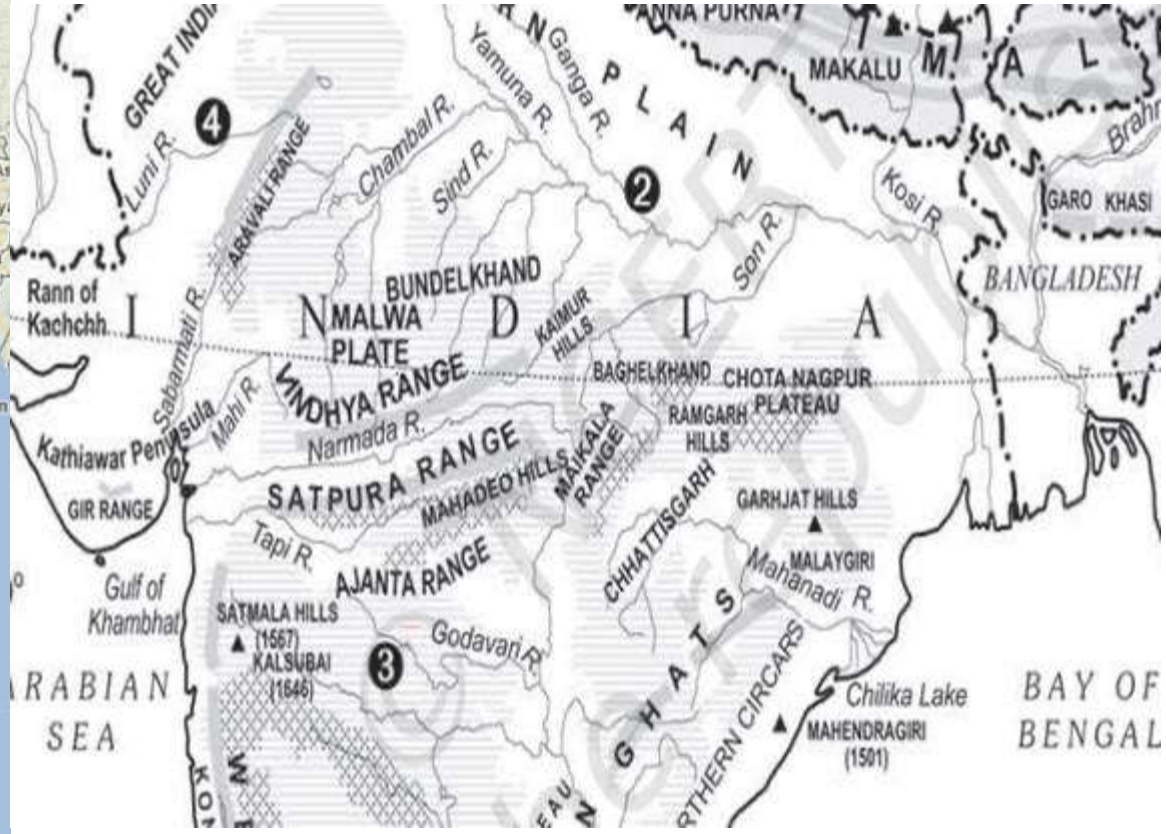
b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Pushkar - Mahadeo Hills ?





- Srisailam - Nallamala Hills (Andhra Pradesh).
- Omkareshwar - Mandhata hills

Giveway - The Pushkar valley - Aravalli hills.

Q) Consider the following protected areas: (2011)

1. Bandipur
2. Bhitarkanika
3. Manas
4. Sunderbans

Which of the above are declared Tiger Reserves?

a) 1 and 2 only

b) 1, 3 and 4 only

c) 2, 3 and 4 only

d) 1, 2, 3 and 4

Q) Consider the following protected areas: (2011)

1. Bandipur
2. Bhitarkanika
3. Manas
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Which of the above are declared Tiger Reserves?

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b) 1, 3 and 4 only

c) 2, 3 and 4 only

d) 1, 2, 3 and 4

List of tiger reserves [edit]

Si No.	Tiger Reserve	Year of creation	State	Population of tigers, 2018[1]	Population of tigers, 2023	Area Core (km^2)	Area buffer (km^2)
1	Bandipur	1973–74	Karnataka	120	150	868.63	
2	Corbett	1973–74	Uttarakhand	216	260	1318.54	
3	Kanha	1973–74	Madhya Pradesh	80	105	940	
4	Manas	1973–74	Assam	11	58	500	
5	Melghat	1973–74	Maharashtra	25	57	1677	
6	Palamau	1973–74	Jharkhand	3	1	414.93	
7	Ranthambore	1973–74	Rajasthan	37	57	1334	
8	Similipal	1973–74	Odisha	9	16	2750	
9	Sunderbans	1973–74	West Bengal	96[10]	100	1330.10	
10	Periyar	1978–79	Kerala	20	30	350	
11	Sariska	1978–79	Rajasthan	9	19	881	
12	Buxa	1982–83	West Bengal	2	1	760	
13	Indravati	1982–83	Chhattisgarh	12	1	1258.37	
14	Namdapha	1982–83	Arunachal Pradesh	11	1	1985.23	
15	Dudhwa	1987–88	Uttar Pradesh	58	135	490.3	

16	Kalakad-Mundanthurai	1988–89	Tamil Nadu	10	5	895	706.542
17	Valmiki	1989–90	Bihar	40	54	898.45	
18	Pench	1992–93	Madhya Pradesh	43 (contiguous with Maharashtra)	77 (contiguous with Maharashtra)	292.85	
19	Tadoba-Andhari	1993–94	Maharashtra	115	97	625.4	
20	Bandhavgarh	1993–94	Madhya Pradesh	63	135	1536	
21	Panna	1994–95	Madhya Pradesh	17	55	542.67	
22	Dampa	1994–95	Mizoram	0	0	500	
23	Bhadra	1998–99	Karnataka	22	28	892.46	
24	Pench	1998–99	Maharashtra	35 (contiguous with Madhya Pradesh)	48 (contiguous with Madhya Pradesh)	257.26	
25	Pakke	1999–2000	Arunachal Pradesh	7	6	861.95	
26	Nameri	1999–2000	Assam	5	3	200	
27	Satpura	1999–2000	Madhya Pradesh	26	50	524	
28	Anamalai	2008–09	Tamil Nadu	13	16	958.59	521.28
29	Sitanadi	2008–09	Chhattisgarh	4	1	556	
30	Satkosia	2008–09	Odisha	3	0	796	
31	Kaziranga	2008–09	Assam	103	104	858.98	

32	Achanakmar	2008–09	Chhattisgarh	11	5	557.55	
33	Dandeli-Anshi Tiger Reserve	2008–09	Karnataka	5	17	1300	
34	Sanjay	2008–09	Madhya Pradesh	8	16	466.68	
35	Mudumalai	2007	Tamil Nadu	103	114	321	367.59
36	Nagarhole	2008–09	Karnataka	101	141	642.39	
37	Parambikulam	2008–09	Kerala	19	31	643.66	
38	Sahyadri	2009–10	Maharashtra	7	0	1166	
39	Biligiri Ranganatha Temple	2010–11	Karnataka	68	37	539.52	
40	Kawal	2012–13	Telangana	–	0	2015.44	
41	Sathyamangalam	2013–14	Tamil Nadu	72	85	793.49	614.91
42	Mukandra Hills	2013–14	Rajasthan	–	1	759.99	
43	Nawegaon	2013–14	Maharashtra	7	11	133.88	
44	Nagarjunsagar-Srisailam	1982–83	Andhra Pradesh	74	58	3728	
45	Amrabad	2014	Telangana	–	12	2611.4	
46	Pilibhit	2014	Uttar Pradesh	65	63	602.79	
47	Bor	2014	Maharashtra	5	9	121.1	
48	Rajaji	2015	Uttarakhand	–	54	820.5	
49	Orang	2016	Assam	–	16	78.81	

50	Kamlang	2016	Arunachal Pradesh	–	0	783	
51	Srivilliputhur – Megamalai	2021	Tamil Nadu	14	12	641.86	374.7
52	Ramgarh Vishdhari	2022	Rajasthan	35	1	1501.89	
53	Ranipur Wildlife Sanctuary[11]	2022	Uttar Pradesh				
54	Veerangana Durgavati Tiger Reserve[12]	2023	Madhya Pradesh			1414.006	

Q) From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats? (2017)

a) Sathyamangalam Tiger Reserve

b) Nallamala Forest

c) Nagarhole National Park

d) Seshachalam Biosphere Reserve

Q) From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats? (2017)

a) Sathyamangalam Tiger Reserve

b) Nallamala Forest

c) Nagarhole National Park

d) Seshachalam Biosphere Reserve

- Sathyamangalam forest range is a significant wildlife corridor in the Nilgiri Biosphere Reserve between the Western Ghats and the rest of the Eastern Ghats.

- **Note :**
- Nallamala Forest : Andhra Pradesh
- Nagarhole National Park : Karnataka (Western Ghats)
- Seshachalam Biosphere Reserve : Andhra Pradesh (Eastern Ghats)

Sathyamangalam + Nagarhole

Seshachalam

- Sathyamangalam forest range is a significant wildlife corridor in the Nilgiri Biosphere Reserve between the Western Ghats and the rest of the Eastern Ghats.

- **Note :**
- Nallamala Forest : Andhra Pradesh
- Nagarhole National Park : Karnataka (Western Ghats)
- Seshachalam Biosphere Reserve : Andhra Pradesh (Eastern Ghats)

Q) Consider the following pairs: (2019) (2013)

1) Nokrek Biosphere Reserve : Garo Hills

2) Logtak (Loktak): Lake Barail Range

3) Namdapha National Park : Dafla Hills

Which of the above pairs is/are correctly matched?

a) 1 only

b) 2 and 3 only

c) 1, 2 and 3

d) None

Q) Consider the following pairs: (2019) (2013)

1) Nokrek Biosphere Reserve : Garo Hills

2) Logtak (Loktak)-(Manipur) : Lake Barail Range (Assam)

3) Namdapha National Park**(Arunachal):** Dafla Hills

Which of the above pairs is/are correctly matched?

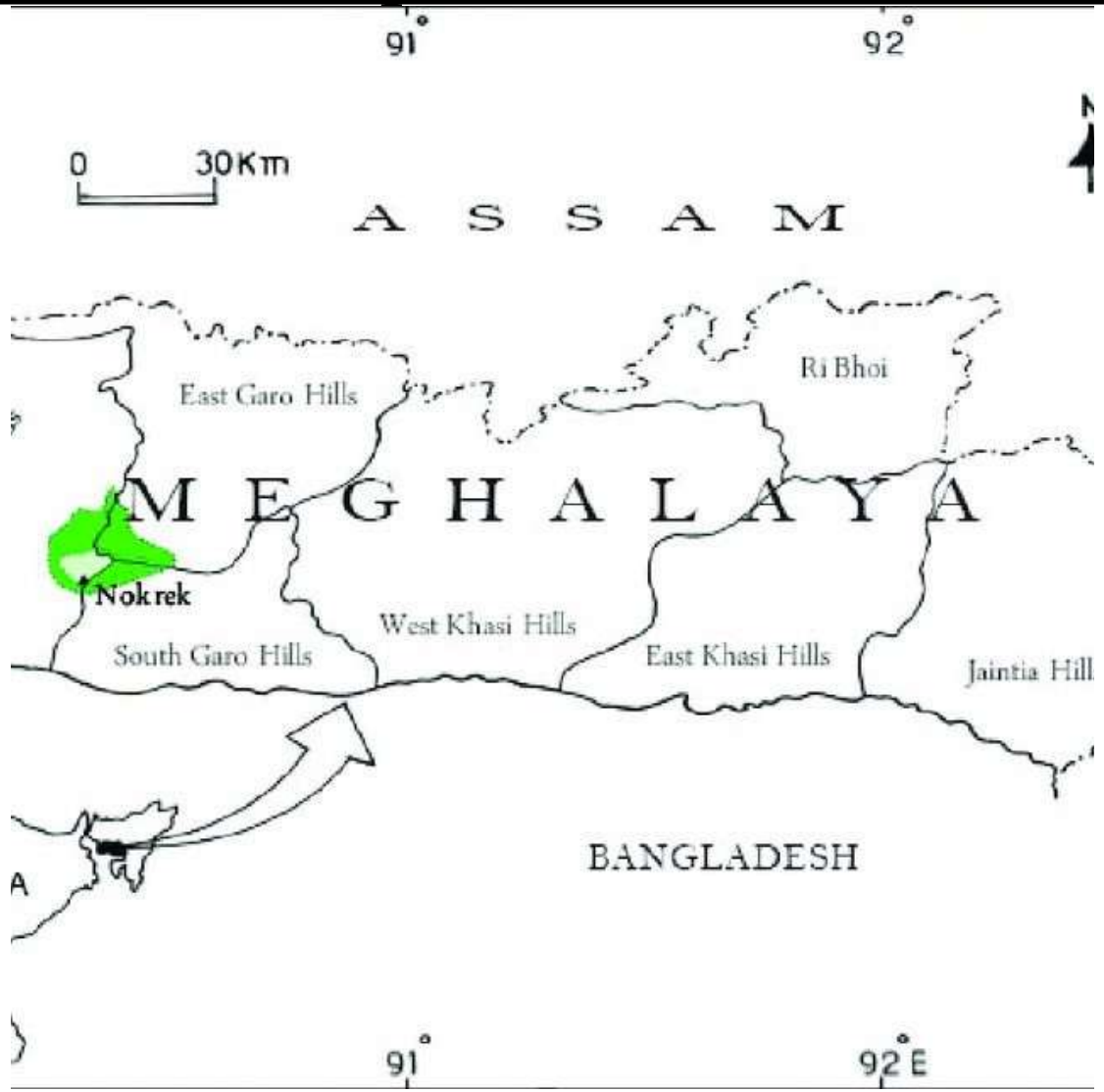
a) 1 only

b) 2 and 3 only

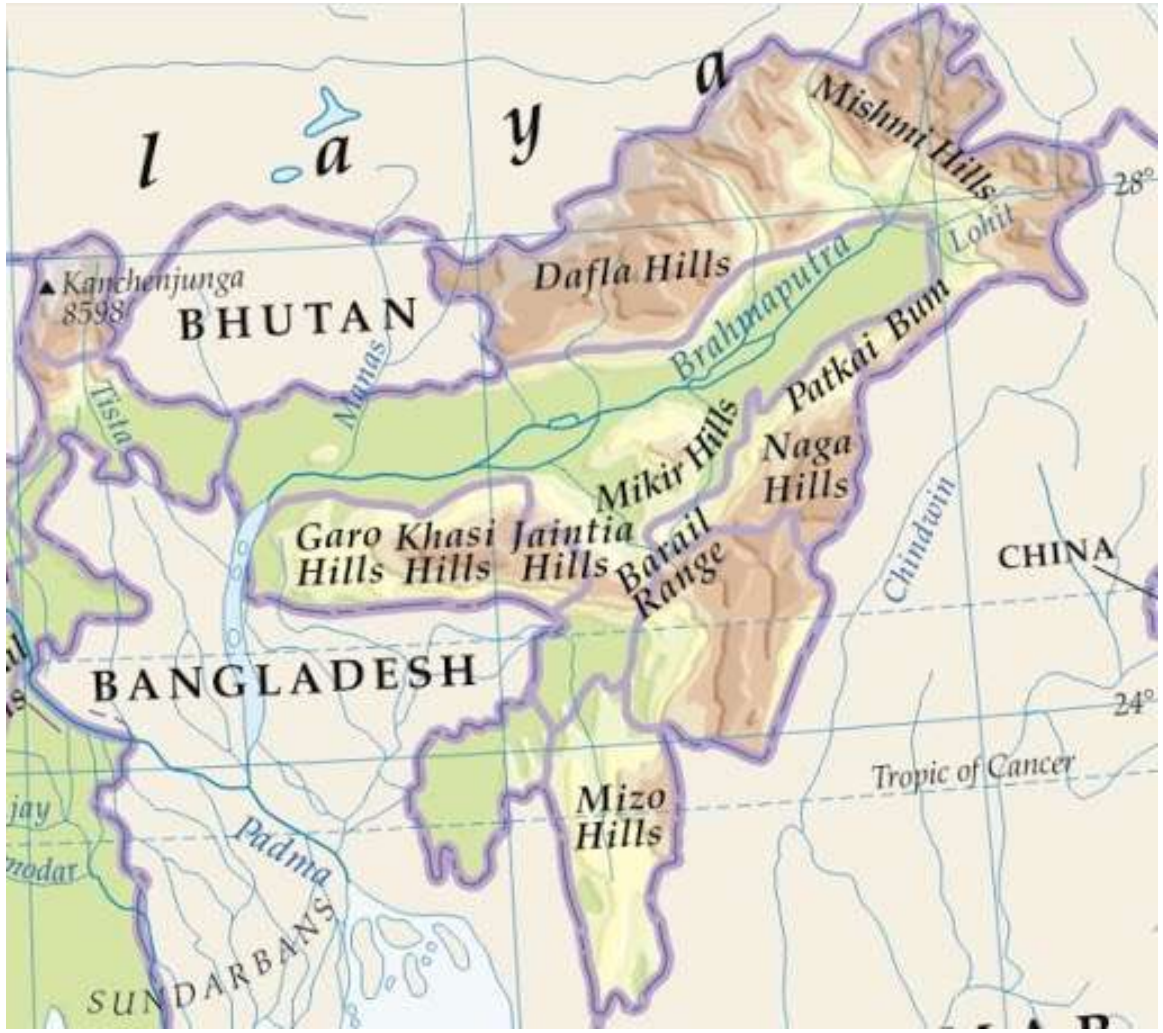
c) 1, 2 and 3

d) None

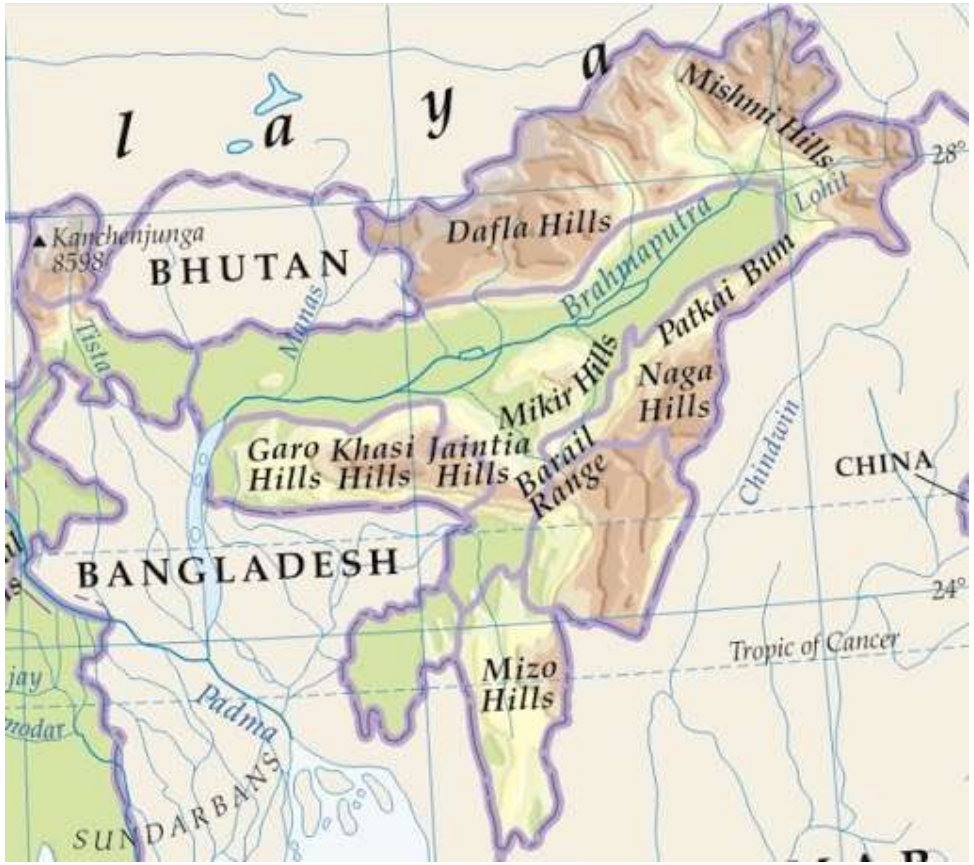
Nokrek Biosphere Reserve : Garo Hills



Logtak (Loktak): Lake Barail Range



Namdapha National Park : Dafla Hills



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Q) Consider the following pairs: (2013)

National Park : River flowing through the Park

1) Corbett National Park : Ganga
2) Kaziranga National Park : Manas
3) Silent Valley National Park : Kaveri

Which of the above pairs is/are correctly matched?

a) 1 and 2
b) 3 only
c) 1 and 3
d) None

Q) Consider the following pairs: (2013)

National Park : River flowing through the Park

1) Corbett National Park : Ganga - **Ramganga**
2) Kaziranga National Park : Manas - **Brahmaputra , Mora , Diphlu etc**
3) Silent Valley National Park : Kaveri - **Kunthipuza**

Which of the above pairs is/are correctly matched?

a) 1 and 2
b) 3 only
c) 1 and 3
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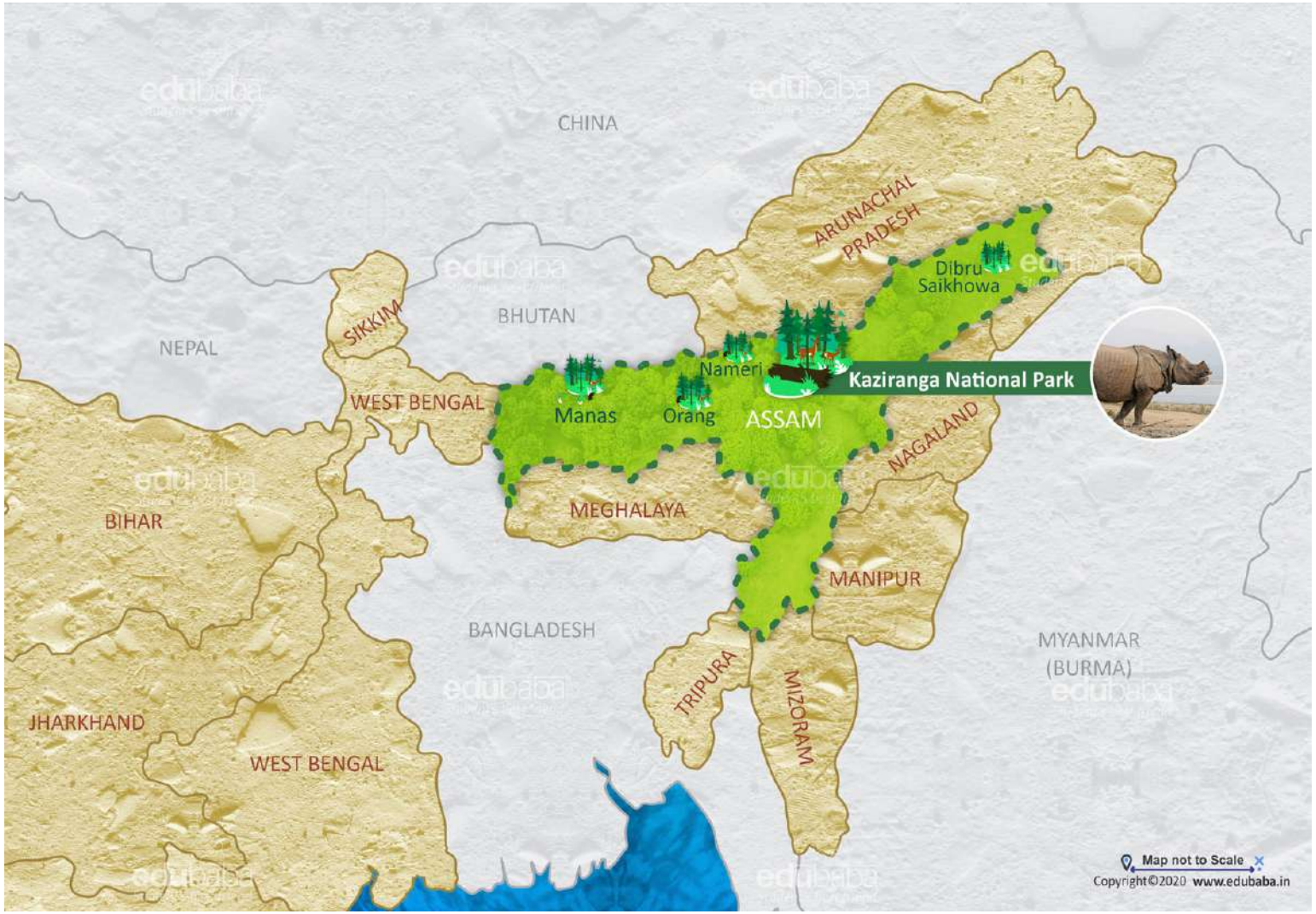
CHINA
ARUNACHAL PRADESH
Dibru Saikhowa
SIKKIM
BHUTAN
NEPAL
Nameri
Kaziranga National Park
WEST BENGAL
Manas
Orang
ASSAM
NAGALAND
MEGHALAYA
BIHAR
MANIPUR
BANGLADESH
MYANMAR (BURMA)
TRIPURA
MIZORAM
JHARKHAND
WEST BENGAL
Map not to Scale
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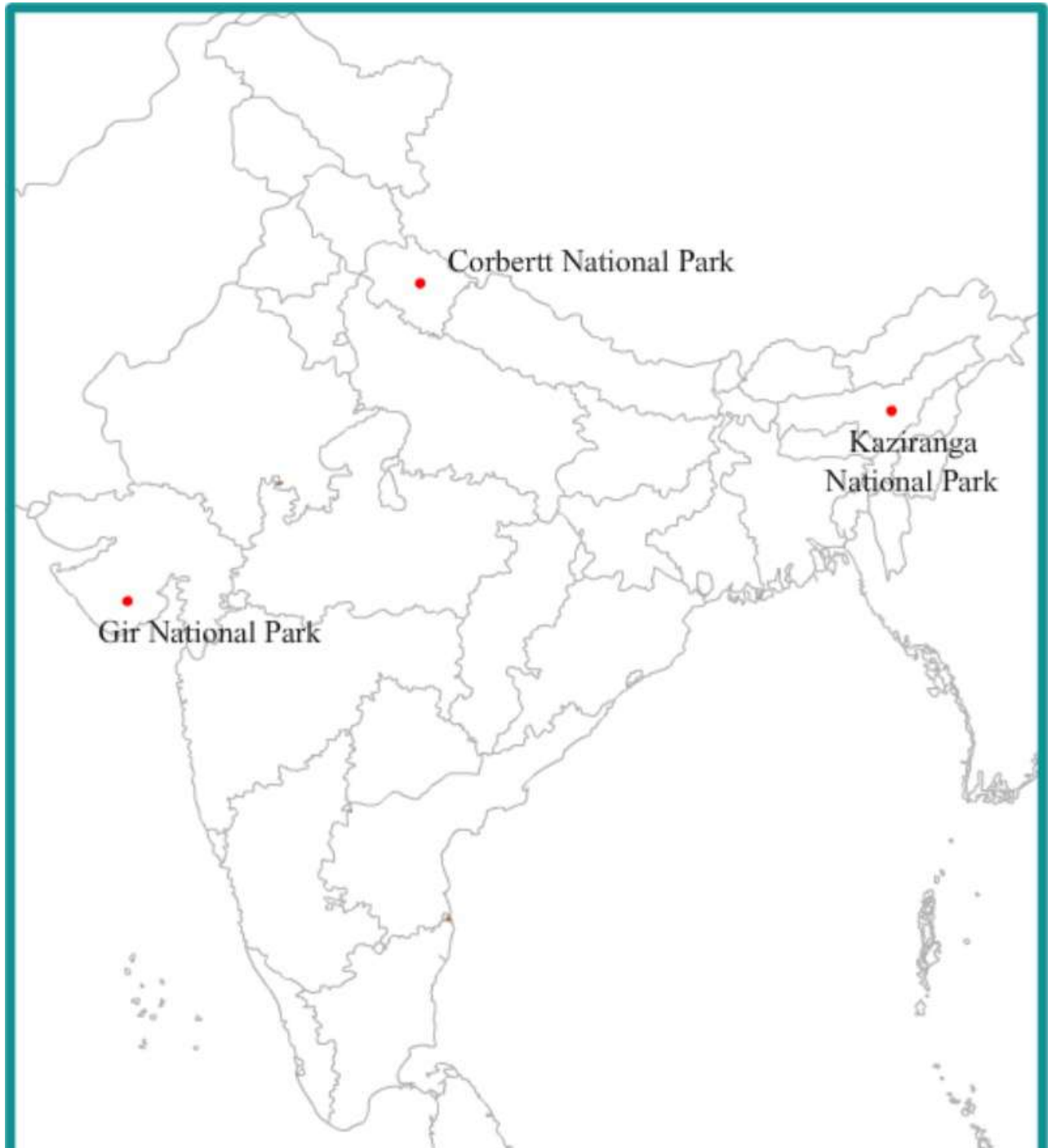
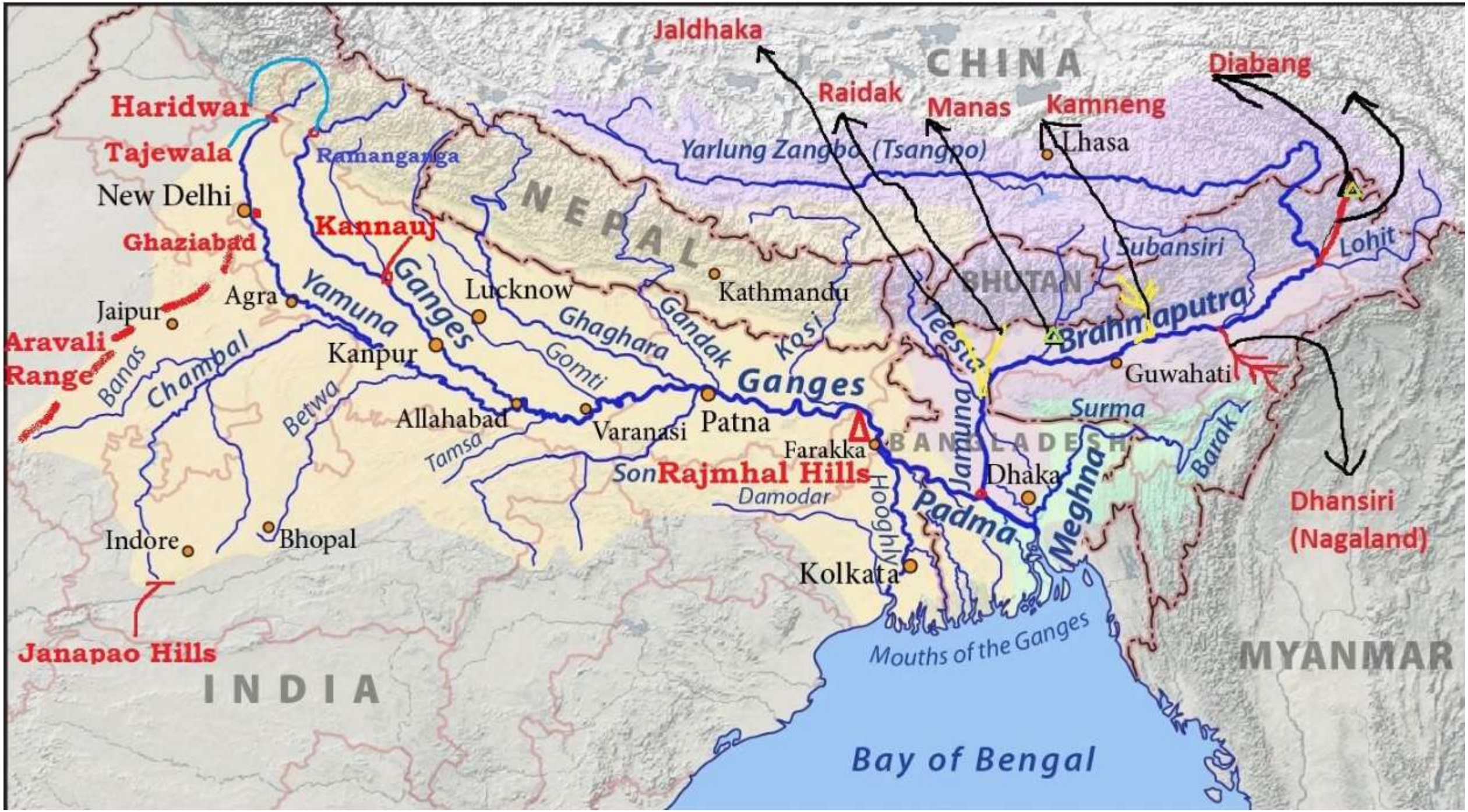
Kerala
Andra Pradesh
50 Kilometers
50 Miles
Bekal Fort
Kasaragod
Kannur
Kannur
Wayanad
Malabar
Wayanad
Kozhikode
Silent Valley National Park
Kozhikode
Malappuram
Palakkad
Central Kerala
Tamil Nadu
Thrissur
Thrissur
Athirapilly Waterfalls
Munnar
Kochi
Ernakulam
Idukki
Northern Travancore
Kottayam
Kumarakom
Kottayam
Central Travancore
Thekkady
Alapuzha
Alappuzha
Pathanamthitta
Kollam
Kollam
Southern Travancore
Thiruvananthapuram
Thiruvanan-thapuram
Kovalam Beach


75°0'E
76°0'E
77°0'E
78°0'E
79°0'E
80°0'E
81°0'E
N
Andhra Pradesh
13°0'N
Karnataka
12°0'N
Kaveri
11°0'N
Kerala
Tamil Nadu
10°0'N
Arabian Sea
Bay of Bengal
9°0'N
8°0'N
River Kaveri
Indian Ocean
Map data © OpenStreetMap contributors


Corbertt National Park
Kaziranga
National Park
Gir National Park


Jaldhaka
CHINA
Diabang
Raidak
Manas
Kamneng
Haridwar
Tajewala
Ramanganga
Yarlung Zangbo (Tsangpo)
Lhasa
New Delhi
NEPAL
Kannauj
Ghaziabad
Subansiri
Lohit
BHUTAN
Agra
Yamuna
Ganges
Lucknow
Kathmandu
Ghaghara
Gandak
Kosi
Teesta
Brahmaputra
Jaipur
Aravali Range
Banas
Chambal
Kanpur
Gomti
Guwahati
Surma
Betwa
Allahabad
Varanasi
Patna
Ganges
Jamuna
Barak
Tamsa
Farakka
BANGLADESH
Son
Rajmhal Hills
Dhaka
Damodar
Hooghly
Padma
Meghna
Dhansiri (Nagaland)
Indore
Bhopal
Kolkata
Janapao Hills
Mouths of the Ganges
MYANMAR
INDIA
Bay of Bengal

Q) Consider the following pairs :

1) Dampa Tiger Reserve : Mizoram
2) Gumti Wildlife Sanctuary : Sikkim
3) Saramati Peak : Nagaland

Which of the above pairs is/are correctly matched ?

a) 1 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3

Q) Consider the following pairs :

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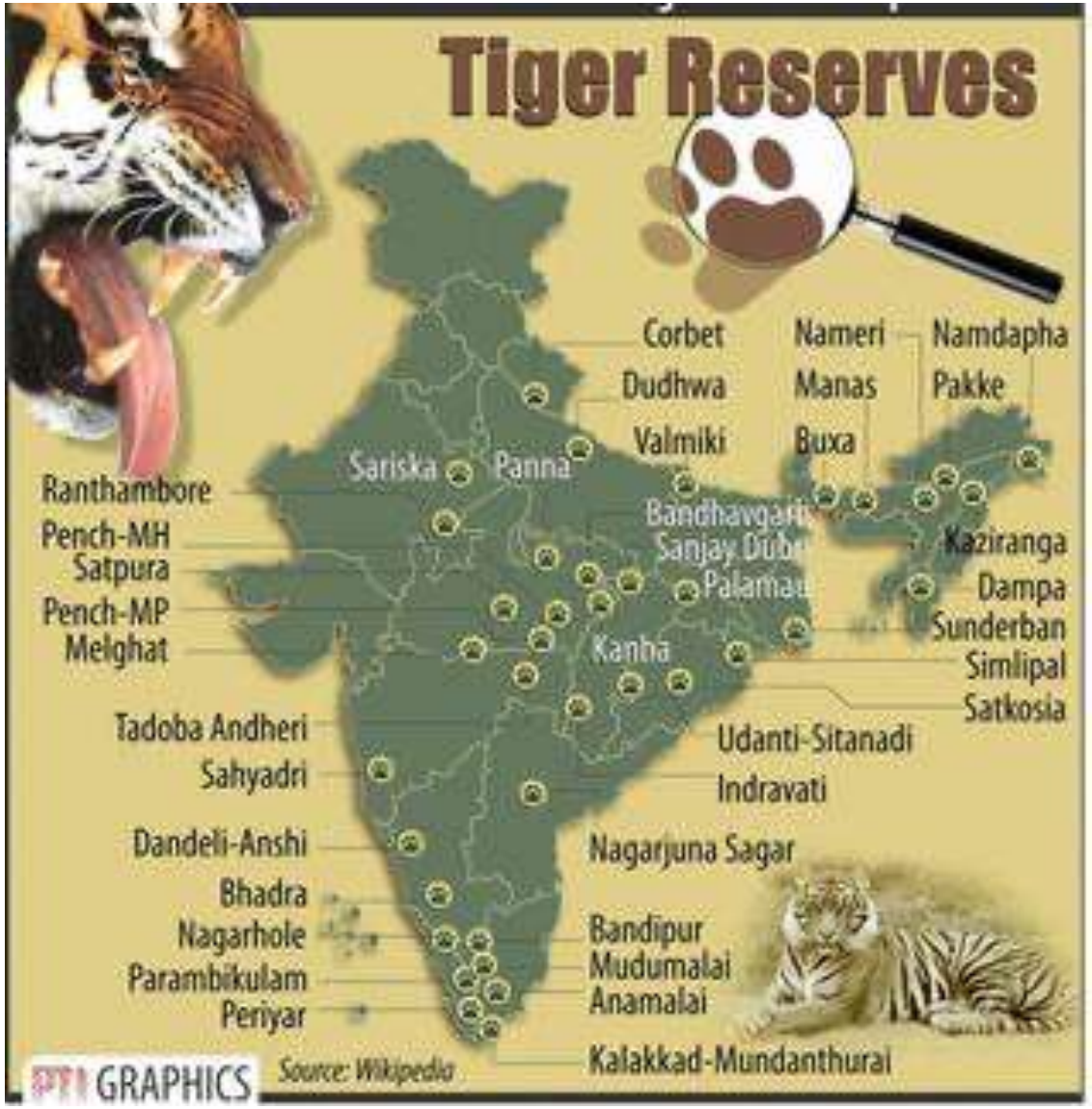
3) **<u>Saramati Peak : Nagaland</u>**

Dampa Tiger Reserve : Mizoram



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Q).In which one of the following States is Pakhui Wildlife Sanctuary located? (2018)

a) Arunachal Pradesh

b) Manipur

c) Meghalaya

d) Nagaland

Q).In which one of the following States is Pakhui Wildlife Sanctuary located? (2018)

a) **Arunachal Pradesh**

b) Manipur

c) Meghalaya

d) Nagaland

- Pakhui is a Wildlife Sanctuary and a dedicated Tiger Reserve **- Arunachal Pradesh, India.**
- bordered by the **Kameng River and Pakke River.**
- **Pakke Paga Hornbill Festival (PPHF)–**the state‘s only conservation festival, as a —state festival.

Q.) Which one of the following National Parks has a climate that varies from tropical to subtropical, temperate and arctic?

a) Khangchendzonga National Park
b) Nandadevi National Park
c) Neora Valley National Park
d) Namdapha National Park

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a) Khangchendzonga National Park

b) Nandadevi National Park

c) Neora Valley National Park

d) Namdapha National Park

- Namdapha NP has the elevation range from 300 to 4,500 m and vegetation zones from evergreen, moist deciduous to temperate broadleaved and coniferous forest types to alpine vegetation.


Nameri
Namdapha
Manas
Pakke
Buxa
Kaziranga

Q.) Which one of the following National Parks lies completely in the temperate alpine?

a) Manas National Park
b) Namdahpa National Park
c) Neora Valley National Park
d) Valley of Flowers National Park

Q.) Which one of the following National Parks lies completely in the temperate alpine?

a) Manas National Park – **Assam**

b) Namdahpa National Park - **Just discussed – Arunachal Pradesh**

c) Neora Valley National Park - **West Bengal**

d) Valley of Flowers National Park - Uttarakhand

- Valley of Flowers National Park is an Indian national park which was established in 1982.
- It is located in Chamoli in the state of Uttarakhand and is known for its meadows of endemic alpine flowers and the variety of flora.
- The valley is situated at a very remarkable area, which is the conversion point of Himalayan ranges, Zanskar and Western and Eastern Himalayas.

Q) Consider the following pairs: (2016)

Famous Place : Region

1) Bodhgaya : Baghelkhand
2) Khajuraho : Bundelkhand
3) Shirdi : Vidarbha
4) **Nasik (Nashik) : Malwa**
5) Tirupati : Rayalaseema

Which of the pairs given above are correctly matched?

a) 1, 2 and 4
b) 2, 3, 4 and 5
c) 2 and 5 only
d) 1, 3, 4 and 5

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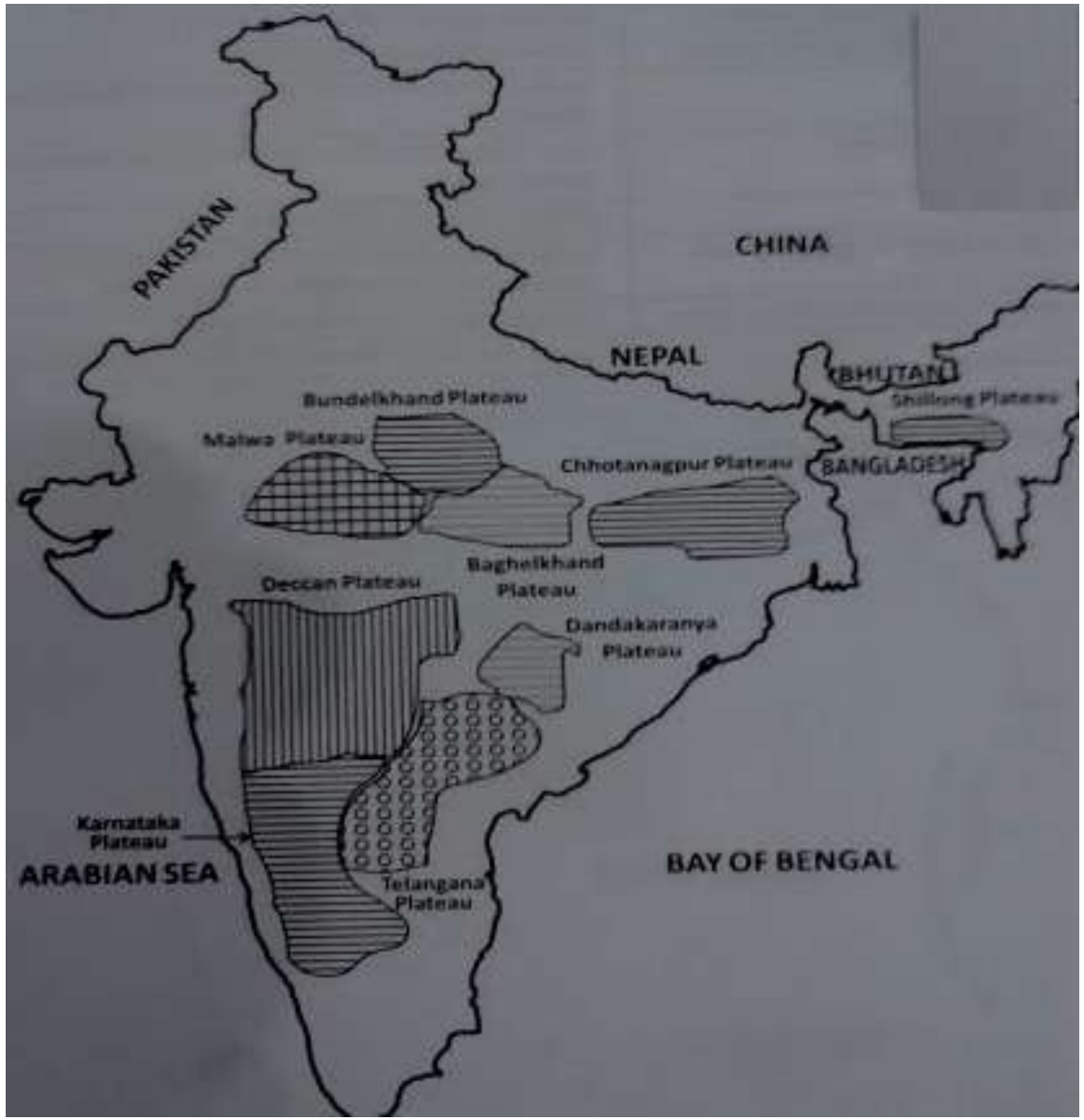
PAKISTAN
CHINA
NEPAL
BHUTAN
Shillong Plateau
BANGLADESH
Bundelkhand Plateau
Malwa Plateau
Chhotanagpur Plateau
Baghelkhand Plateau
Deccan Plateau
Dandakaranya Plateau
Karnataka Plateau
ARABIAN SEA
BAY OF BENGAL
Telangana Plateau

Q) Consider the following pairs:

Famous Place : Region

1) Bodhgaya : Baghelkhand
2) Khajuraho : Bundelkhand
3) Shirdi : Vidarbha
4) Nasik (Nashik) : Malwa
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Q) Which of the following Protected Areas are located in Cauvery basin?

1) Nagarhole National park

2) Papikonda National Park

3) Sathyamagalam Tiger Reserve

4) Wayanand Wildlife Sanctuary

Select the correct answer using the code given below:

a) 1 and 2 only

b) 3 and 4 only

c) 1, 3 and 4 only

d) 1, 2, 3 and 4

Q) Which of the following Protected Areas are located in Cauvery basin?

1) Nagarhole National park

2) Papikonda National Park - **Eastern Ghats**

3) Sathyamagalam Tiger Reserve

4) Wayanand Wildlife Sanctuary

Select the correct answer using the code given below:

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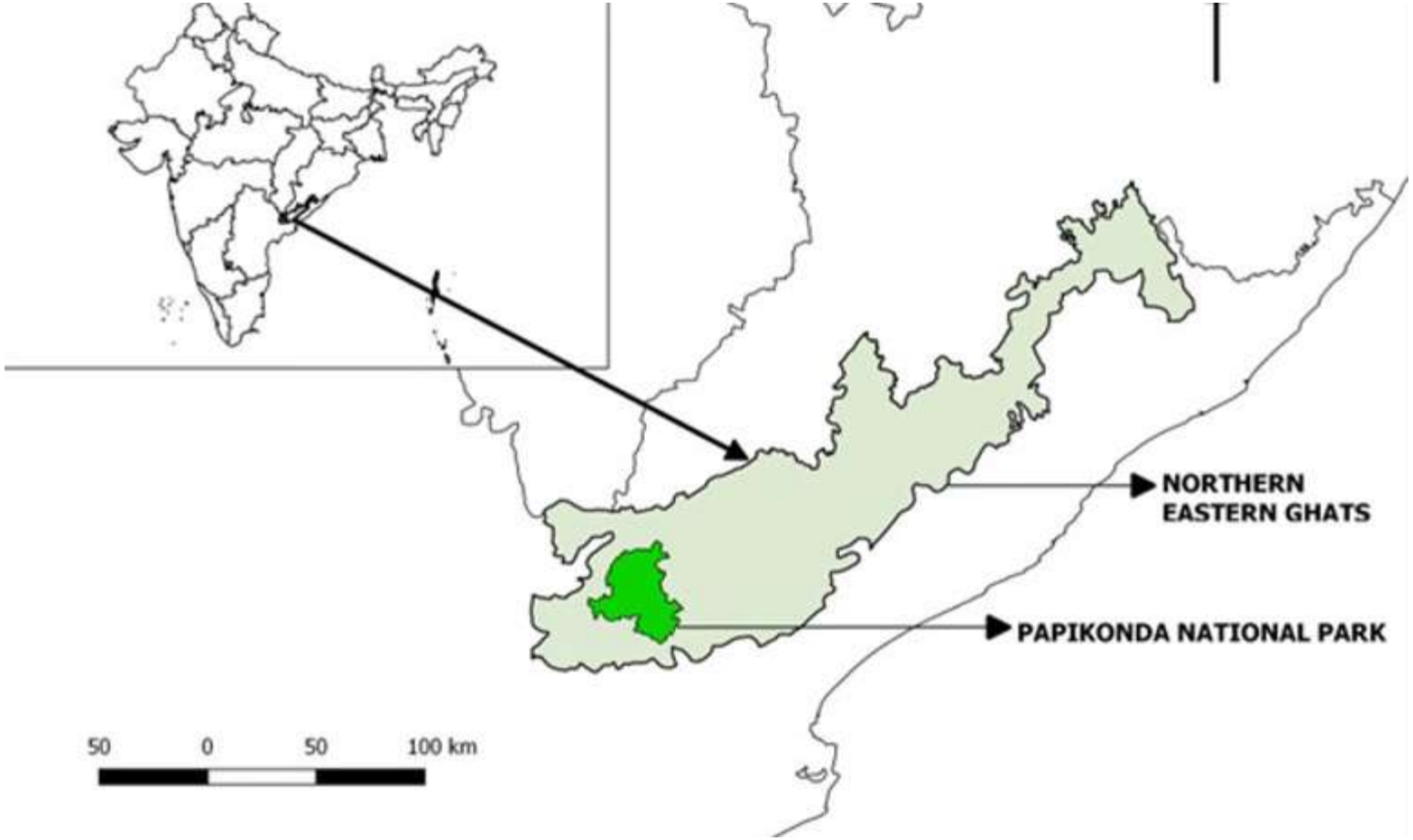
Kaveri River Basin

Note : River Basin - Area of land drained by a river and its branches

Papikonda National Park

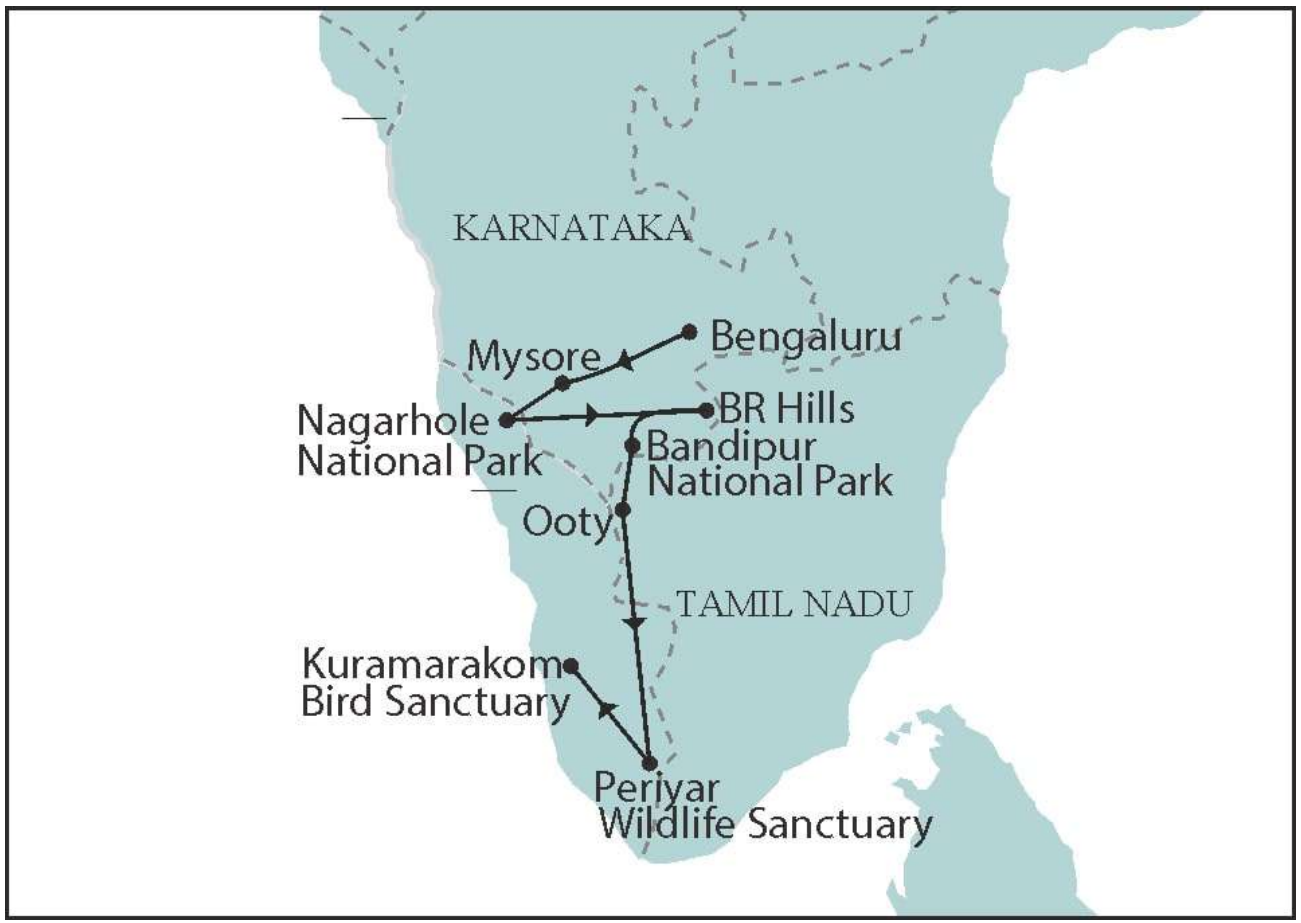


- **Nagarhole National Park - Karnataka.**
- **Papikonda National Park** - Andhra Pradesh. River Godavari flows through Papikonda National Park.
- **Sathyamangalam Tiger Reserve** - **Tamil Nadu**. It is located at the **confluence of two** distinct geographical regions of bio diversity landscape; **Western Ghat and Eastern Ghat.**
- **Wayanad Wildlife- Kerala**

Sathyamangalam Tiger Reserve

Wayanad WLS – Kerala

Nagarhole National Park



Q) Which of the following Protected Areas are located in Cauvery basin?

1) Nagarhole National park

2) Papikonda National Park

3) Sathyamagalam Tiger Reserve

4) Wayanand Wildlife Sanctuary

Select the correct answer using the code given below:

a) 1 and 2 only

b) 3 and 4 only

c) 1, 3 and 4 only

d) 1, 2, 3 and 4

Q. Consider the following pairs: Reservoirs States (2022)

1. Ghataprabha – Telangana
2. Gandhi Sagar –Madhya Pradesh
3. Indira Sagar –Andhra Pradesh
4. Maithon –Chhattisgarh

How many pairs given above are not correctly matched?

a) Only one pair
b) Only two pairs
c) Only three pairs
d) All four pairs

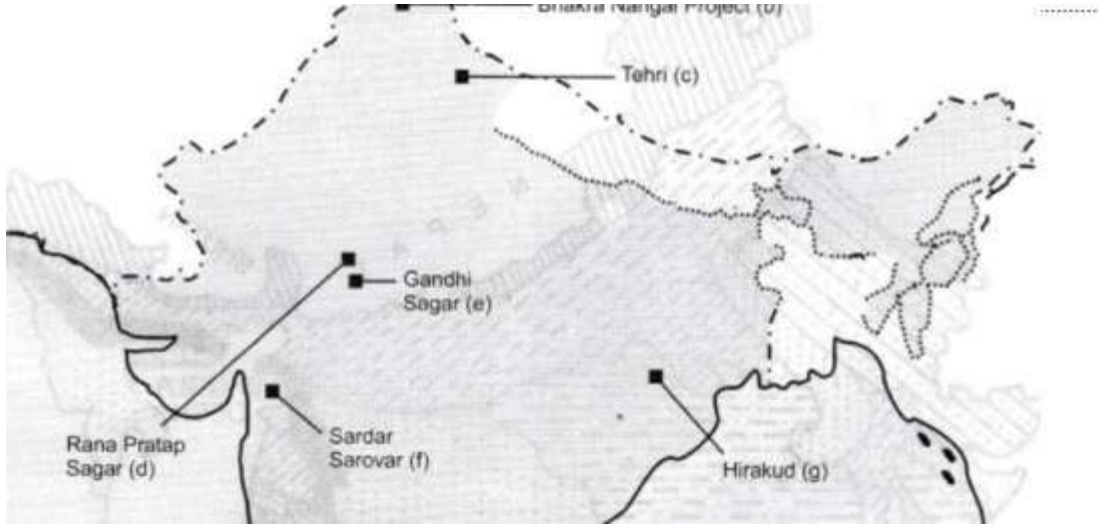
Q. Consider the following pairs: Reservoirs States (2022)

1. Ghataprabha – Telangana – **North Karnataka**
2. **Gandhi Sagar –Madhya Pradesh**
3. Indira Sagar –Andhra Pradesh – **Madhya Pradesh**
4. Maithon –Chhattisgarh - **Jharkhand**

How many pairs given above are not correctly matched?

a) Only one pair
b) Only two pairs
c) **Only three pairs**
d) All four pairs

Indira Sagar+ Gandhi Sagar –Madhya Pradesh




National Parks & Sanctuaries of Karnataka
N
MAHARASHTRA
GOA
ANDHRA PRADESH
KERALA
TAMILNADU
ARABIAN SEA
Bidar
To Hyderabad
Gulbarga
To Mumbai
Bijapur
Raichur
Belgaum
Ghataprabha
Dharwad
Hospet
Tungabhadra
To Panjim
Dandeli
Hubli
Bellary
Ranebennur
Karwar
Chitradurga
Sharavathi Valley3
Shimoga
Mookambika
Bhadra
Shettihalli
Chikmangalur
To Kuppom
Tumkur
BANGALORE
Someshwara
Hassan
Mangalore
Adichunchanagiri
Bannergatta
Melkote Temple
Mandya
Madikeri
Arabithittu
To Chennai (Madras)
Brahmagiri
Mysore
Nagarhole
Ranganthittee
To Cochin
Nugu
Bandipur
Biligiri Rangaswamy Temple
Map not to Scale
State Capital
National Parks
National Highway
Sanctuaries
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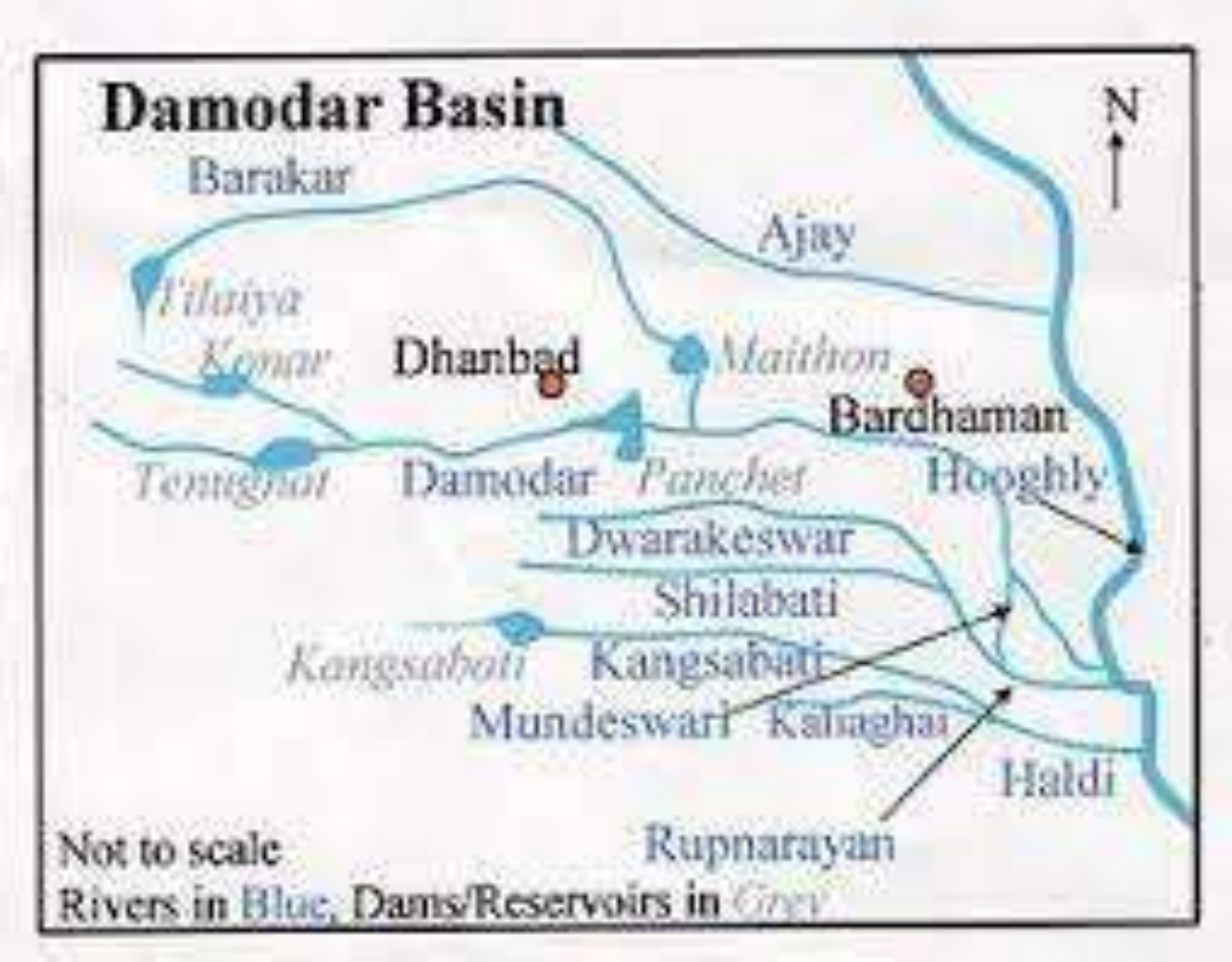
Maithon - Jharkhand



WORLD

Q) Which one of the following pairs is correctly matched? Geographical Feature Region (2013)

a) Abyssinian Plateau : Arabia

b) Atlas Mountains : North-Western Africa

c) Guiana Highlands : South-Western Africa

d) Okavango Basin: Patagonia

Q) Which one of the following pairs is correctly matched? Geographical Feature Region (2013)

a) Abyssinian Plateau : Arabia

b) Atlas Mountains: North-Western Africa

c) Guiana Highlands : South-Western Africa

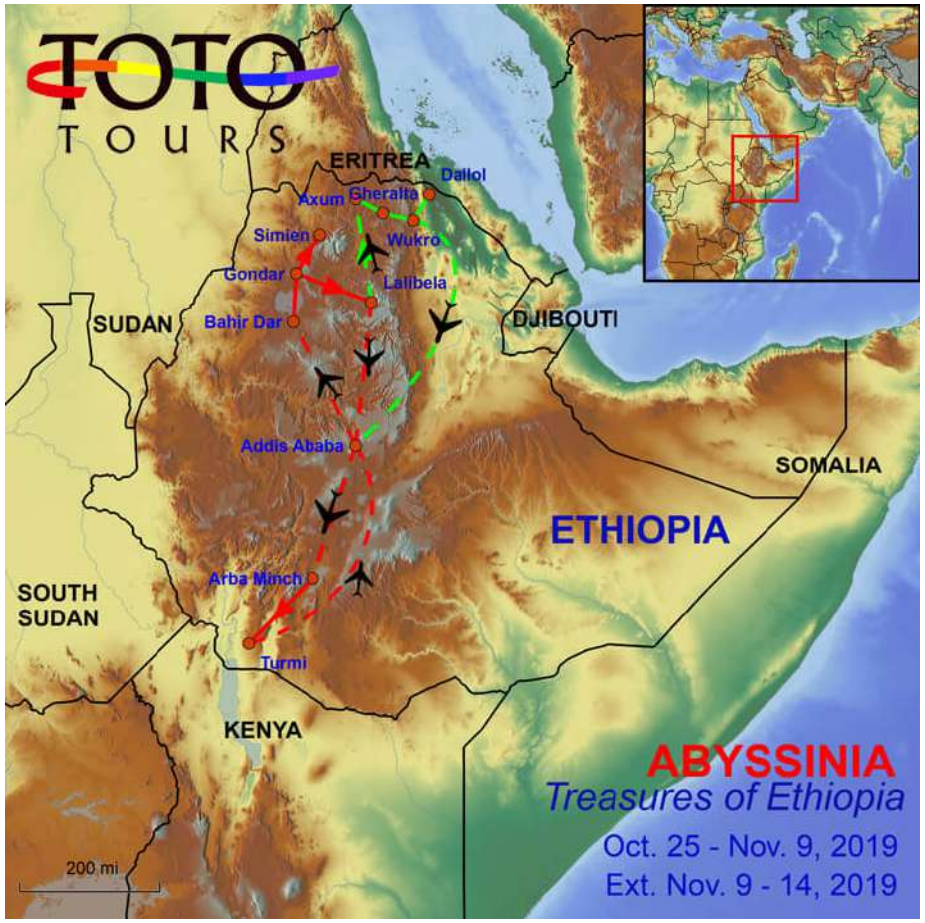
d) Okavango Basin: Patagonia

Atlas Mountains: North-Western Africa - correct

Guiana Highlands : South-Western Africa - Incorrect

Pantagonia - Incorrect

Abyssinian Plateau - Ethiopia



Additional Information – Issues with Territories

- **Hala'ib Triangle** : Sudan & Egypt
- Shatt al-Arab : Iran & Iraq
- Bakassi : Nigeria & Cameroon
- Essquibo Region – Venezuela and Guyana
- Nagorono Karabakh – Azerbaijan and Armenia

Q) Turkey is located between (2014)

a) Black Sea and Caspian Sea
b) Black Sea and Mediterranean Sea
c) Gulf of Suez and Mediterranean Sea
d) Gulf of Aqaba and Dead Se

Q) Turkey is located between (2014)

a) Black Sea and Caspian Sea

b) Black Sea and Mediterranean Sea

c) Gulf of Suez and Mediterranean Sea

d) Gulf of Aqaba and Dead Se


HUNGARY
MOLDOVA
UKRAINE
ROMANIA
Odessa
Rostov-on-Don
Sea of Azov
RUSSIA
SERBIA
Kerch
Sevastopol
Novorossiysk
Constanta
Yalta
Black Sea
BULGARIA
Varna
Sochi
MACEDONIA
Burgas
GEORGIA
Batumi
Istanbul
Zonguldak
Sea of Marmara
Samsun
Ordu
GREECE
Trabzon
ARMENIA
Aegean Sea
TURKEY
Athens
NORTH
0
125
250
500
Kilometres
Mediterranean Sea
SYRIA
CYPRUS

Additional Information

Source: BBC research, Ministry of Defence, Institute for the Study of War (as of 23:00 GMT, 2 March)

BBC

Q) What is the correct sequence of occurrence of the following cities in South-East Asia as one proceeds from south to north? (2014)

1) Bangkok
2) Hanoi
3) Jakarta
4) Singapore

Select the correct answer using the code given below:

a) 4-2-1-3
b) 3-2-4-1
c) 3-4-1-2
d) 4-3-2-1

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Select the correct answer using the code given below:

a) 4-2-1-3
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d) 4-3-2-1


Indomalaya Ecozone
National Capital
Major Cities
Azimuthal Equal-Area Projection
IRAN
PAKISTAN
INDIA (BHARAT)
NEPAL
BHUTAN
BANGLADESH
MYANMAR (BURMA)
CHINA (ZHONG GUO)
LAOS
THAILAND
PRATHET THAI
VIET NAM
CAMBODIA
SRI LANKA
MALDIVES
MALAYSIA
INDONESIA
PHILIPPINES
TAIWAN
BRUNEI
SINGAPORE
AUSTRALIA
EAST TIMOR
New Delhi
Karāchi
Jaipur
Lucknow
Kānpur
Kathmandu
Thimphu
Lhasa
Tibet (CHINA)
Mt. Everest (8848 m)
Ahmadābād
Surat
Mumbai (Bombay)
Pune
Nāgpur
Hyderabad
Bangalore
Chennai (Madras)
Cochin
Jaffna
Colombo
Male
Dhaka
Kolkata (Calcutta)
Chittagong
Mandalay
Nay Pyi Taw
Yangon
Vientiane
Bangkok
Phnom Penh
Hanoi
Haiphong
Hue
Ho Chi Minh City (Saigon)
Kunming
Chengdu
Chongqing
Changsha
Guiyang
Nanchang
Hangzhou
Xi River
Guangzhou
Nanning
Hong Kong S.A.R.
Macau S.A.R.
Taipei
Manila
Luzon
Cebu
Mindanao
Davao
Bandar Seri Begawan
Kuala Lumpur
Singapore
Medan
Pontianak
Borneo
Celebes
Makassar
Sumatra
Palembang
Jakarta
Surabaya
Semarang
Bandung
Java
Dili
Timor
Banda Sea
Java Sea
Timor Sea
Celebes Sea
Sulu Sea
South China Sea
East China Sea
Philippine Sea
Arabian Sea
Bay of Bengal
Andaman Sea
Laccadive Sea
Gulf of Thailand
Indian Ocean
Equator
Tropic of Cancer
HIMALAYAS
Indus
Ganges
Brahmaputra
Irrawaddy
Salween
Mekong
Yangtze
Hengduan Mts
DECCAN
WESTERN GHATS
EASTERN GHATS
LAKSHADWEEP (INDIA)
ANDAMAN ISLANDS (INDIA)
NICOBAR ISLANDS (INDIA)
SPRATLY ISLANDS
RYUKYU ISL (JAPAN)
Hainan Dao
N
0 400 800 Km
0 400 800 Mi
80
100
120
20
0
© Nations Online Project

Q) The area known as 'Golan Heights' sometimes appears in the news in the context of the events related to

a) Central Asia
b) Middle East
c) South-East Asia
d) Central Africa

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a) Central Asia

b) Middle East

c) South-East Asia

d) Central Africa


Lebanon
Golan Heights
Syria
Mediterranean Sea
Tel Aviv
West Bank
Jordan
Palestine
Jerusalem
Dead Sea
Gaza Strip
Israel
Egypt

The Economist

Q) Which one of the following countries of South-West Asia does *Not* open out to the Mediterranean Sea? (2015)

a) Syria

b) Jordan

c) Lebanon

d) Israel

Q) Which one of the following countries of South-West Asia does *Not* open out to the Mediterranean Sea? (2015)

a) Syria

b) Jordan

c) Lebanon

d) Israel


Black Sea
Caspian Sea
TURKEY
CYPRUS
SYRIA
LEBANON
ISRAEL
IRAQ
IRAN
AFGHANISTAN
JORDAN
KUWAIT
Persian Gulf
BAHRAIN
OMAN
QATAR
U.A.E.
Arabian Sea
SAUDI ARABIA
OMAN
Red Sea
INDIAN OCEAN
YEMEN
0
500 miles
0
500 kilometers

Q. <u>Consider the following pairs: (2023)</u>

Area of conflict mentioned in news		Country where it is located
1.Donbas	:	Syria
2.Kachin	:	Ethiopia
3.Tigray	:	North Yemen

How many of the above pairs are correctly matched?

a) Only one
b) Only two
c) All three
d) None

Area of conflict mentioned in news		Country where it is located
1.Donbas	:	Ukraine
2.Kachin	:	Myanmar
3.Tigray	:	Ethiopia


RUSSIA
UKRAINE
Crimea
LUHANSK REGION
Donbas
Luhansk
DONETSK REGION
Donetsk
UKRAINE
RUSSIA
100km
100 miles
Russia annexed Crimea in 2014
Russian-backed separatist-held areas, pre-24 February
Donbas refers to a large coal basin that covers much of the regions of Luhansk and Donetsk
Google

BBC

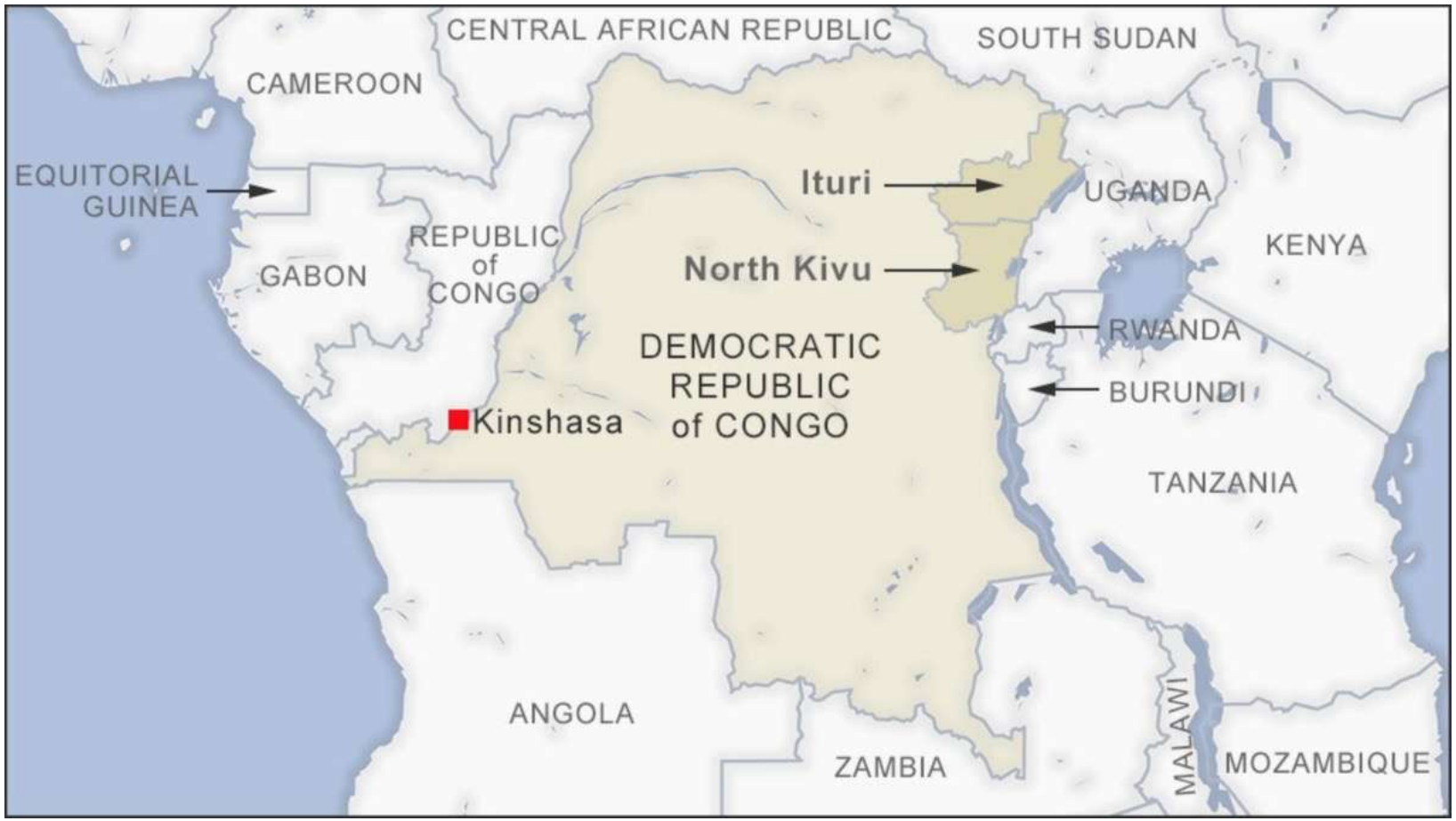

ERITREA
ASMARA
TIGRAY
ETHIOPIA

Q. Consider the following pairs(2023)

Regions often mentioned in news	**Reason for being in news**
1. North Kivu and Ituri	War between Armenia and Azerbaijan
2. Nagorno-Karabakh	Insurgency in Mozambique
3. Kherson and Zaporizhzhia	Dispute between Israel and Lebanon

How many of the above pairs are correctly matched?

a) Only one
b) Only two
c) All three
d) None


CENTRAL AFRICAN REPUBLIC
SOUTH SUDAN
CAMEROON
EQUITORIAL GUINEA
Ituri
UGANDA
KENYA
REPUBLIC of CONGO
GABON
North Kivu
RWANDA
DEMOCRATIC REPUBLIC of CONGO
BURUNDI
Kinshasa
TANZANIA
ANGOLA
ZAMBIA
MALAWI
MOZAMBIQUE


AZERBAIJAN
ARMENIA
NAGORNO - KARABAKH

Source: UK MoD / Institute for the Study of War (21:00 GMT, 3 March)

BBC

Q. Consider the following pairs(2023)

Regions often mentioned in news	**Reason for being in news**
1. North Kivu and Ituri	War between Armenia and Azerbaijan
2. Nagorno-Karabakh	Insurgency in Mozambique
3. Kherson and Zaporizhzhia	Dispute between Israel and Lebanon

Q) Consider the following pairs: (2018)

Towns sometimes mentioned in news – Country

1) Aleppo - Syria

2) Kirkuk - Yemen

3) Mosul - Palestine

4) Mazar-i-sharif - Afghanistan

Which of the pairs given above are correctly matched?

a) 1 and 2

b) 1 and 4

c) 2 and 3

d) 3 and 4

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Towns sometimes mentioned in news – Country

1) Aleppo - Syria

2) Kirkuk - Yemen

3) Mosul - Palestine

4) Mazar-i-sharif - Afghanistan

Which of the pairs given above are correctly matched?

a) 1 and 2

b) 1 and 4

c) 2 and 3

d) 3 and 4

- Aleppo - Syria,
- Kirkuk and Mosul -Iraq
- Majar - i - Sharif - Afghanistan.

Q) Consider the following pairs: (2018)

Regions Sometimes Mentioned in News - Country

1) Catalonia - Spain

2) Crimea - Hungary

3) Mindanao - Philippines

4) Oromia - Nigeria

Which of the pair given above are correctly matched?

a) 1, 2 and 3

b) 3 and 4 only

c) 1 and 3 only

d) 2 and 4 only

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Regions Sometimes Mentioned in News - Country

1) Catalonia - Spain

2) Crimea - Hungary

3) Mindanao - Philippines

4) Oromia - Nigeria

Which of the pair given above are correctly matched?

a) 1, 2 and 3

b) 3 and 4 only

c) 1 and 3 only

d) 2 and 4 only

- Catalonia - Spain – Referendum
- Crimea – Ukraine – Russia
- Mindanao - Philippines - Insurgency.
- Oromia - Ethiopia - Ethnic clashes.

Catalonia - Spain – Referendum

Oromia - Ethiopia – Ethnic Clashes

Mindanao - Philippines

Crimea – Ukraine – Russia

Q) Consider the following pairs:

Regions Sometimes Mentioned in News - Country

1) Catalonia - Spain

2) Crimea - Hungary

3) Mindanao - Philippines

4) Oromia - Nigeria

Which of the pair given above are correctly matched?

a) 1, 2 and 3

b) 3 and 4 only

c) 1 and 3 only

d) 2 and 4 only

Q) Consider the following pairs: (2019)

Sea Bordering : Country

1) Adriatic Sea : Albania
2) Black Sea : Croatia
3) Caspian Sea : Kazakhstan
4) Mediterranean Sea : Morocco
5) Red Sea : Syria

Which of the pairs given above are correctly matched?

a) 1, 2 and 4 only
b) 1, 3 and 4 only
c) 2 and 5 only
d) 1, 2, 3, 4 and 5

Q90) Consider the following pairs:

Sea Bordering : Country

1) Adriatic Sea : Albania
2) Black Sea : Croatia
3) **Caspian Sea : Kazakhstan - Second- this one**
4) Mediterranean Sea : Morocco
5) **Red Sea : Syria – Start with this**

Which of the pairs given above are correctly matched?

a) 1, 2 and 4 only
b) 1, 3 and 4 only
c) 2 and 5 only
d) 1, 2, 3, 4 and 5

1) <u>Red Sea : Syria</u>

1) <u>Caspian Sea : Kazakhstan</u>

Q) Consider the following pairs:

Sea Bordering : Country

1) Adriatic Sea : Albania
2) Black Sea : Croatia
3) Caspian Sea : Kazakhstan
4) Mediterranean Sea : Morocco
5) Red Sea : Syria

Which of the pairs given above are correctly matched?

a) 1, 2 and 4 only
b) 1, 3 and 4 only
c) 2 and 5 only
d) 1, 2, 3, 4 and 5

Q) Consider the following pairs: (2020)

River	**:**	**Flows into**
1) Mekong	:	Andaman Sea
2) Thames	:	Irish Sea
3) Volga	:	Caspian Sea
4) Zambezi	:	Indian Ocean

Which of the pairs given above is/are correctly matched?

a) 1 and 2 only

b) 3 only

c) 3 and 4 only

d) 1, 2 and 4 only

Q) Consider the following pairs: (2020)

River	:	Flows into
1) Mekong	:	Andaman Sea
2) Thames	:	Irish Sea
3) Volga	:	Caspian Sea
4) Zambezi	:	Indian Ocean

Which of the pairs given above is/are correctly matched?

a) 1 and 2 only

b) 3 only

c) 3 and 4 only

d) 1, 2 and 4 only

Andaman Sea


CHINA
BANGLADESH
Dhaka
Calcutta
INDIA
MYANMAR
Rangoon
THAILAND
Bay of Bengal
Bangkok
Madras
Andaman Sea
Colombo
SRI LANKA
MALAYSIA
Kuala Lumpur
Medan
SINGAPORE
INDONESIA
Indian Ocean
NORTH
0 250 500 1,000
Kilometres

Mekong River : South China Sea

Trick - Mekong Ganga Co-operation

LIMCa TV

1. L- Laos
2. I- India
3. M- Myanmar
4. Ca- Cambodia
5. T- Thailand
6. V- Vietnam

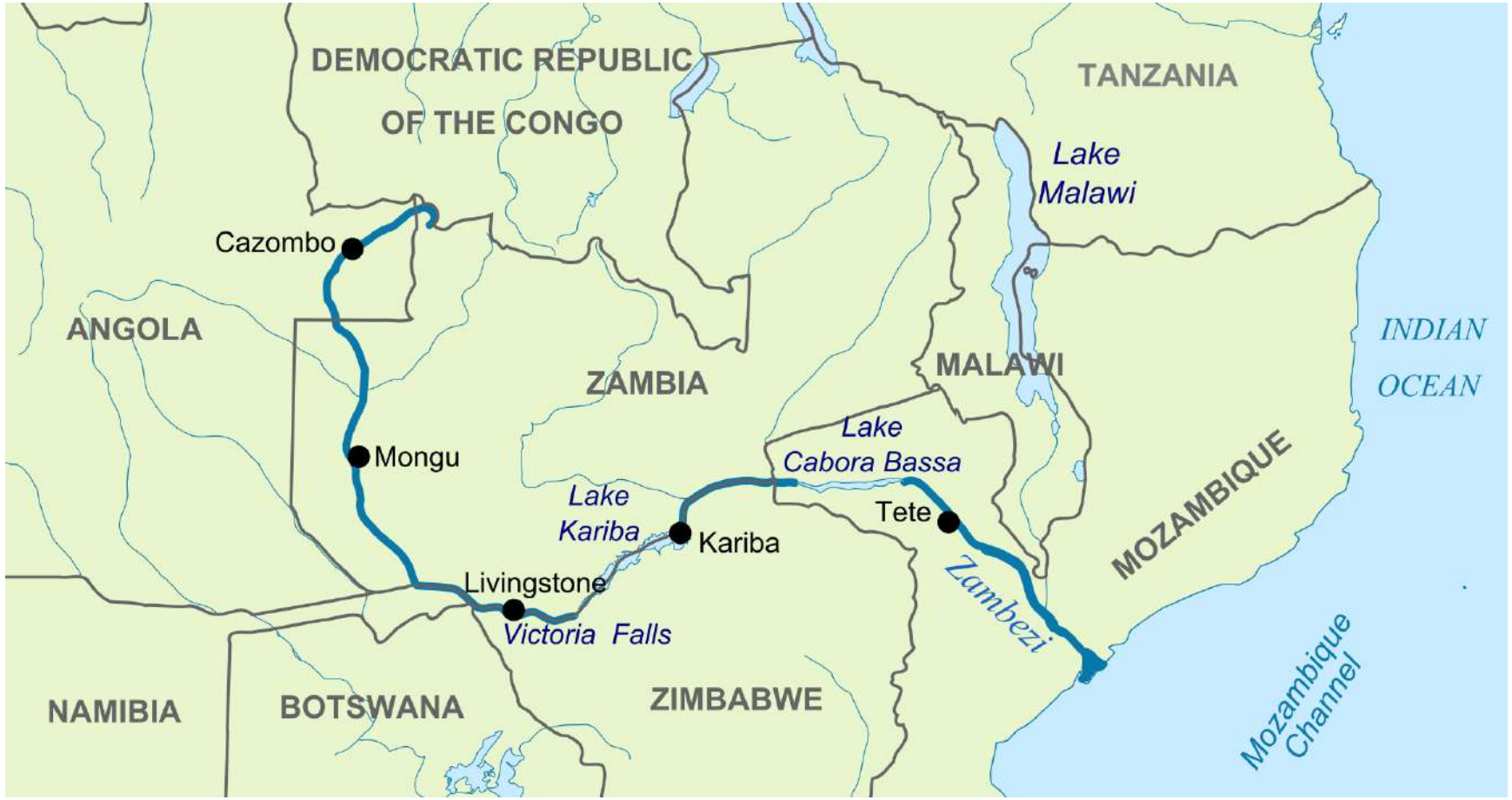
Volga : Caspian Sea

Trick – Caspian Sea

TARIK

1. T- Turkmenistan
2. A- Azerbaijan
3. R- Russia
4. Iran
5. Kazakhstan

Zambezi : Indian Ocean



Thames : Irish Sea

Countries Surrounding Baltic Sea

Q) Consider the following pairs:

River	:	Flows into
1) Mekong	:	Andaman Sea
2) Thames	:	Irish Sea
3) Volga	:	Caspian Sea
4) Zambezi	:	Indian Ocean

Which of the pairs given above is/are correctly matched?

a) 1 and 2 only

b) 3 only

c) 3 and 4 only

d) 1, 2 and 4 only

Q. Consider the following pairs (2022)

Region often mentioned in the news Country

1. Anatolia – Turkey
2. Amhara – Ethiopia
3. Cabo Delgado –Spain
4. Catalonia – Italy

How many pairs given above are correctly matched?

a) Only one pair
b) Only two pairs
c) Only three pairs
d) All four pairs

Q. Consider the following pairs: (2022)

Region often mentioned in the news Country

1. **Anatolia – Turkey**
2. **Amhara – Ethiopia**
3. Cabo Delgado –Spain
4. **Catalonia – Italy - Spain**

How many pairs given above are correctly matched?

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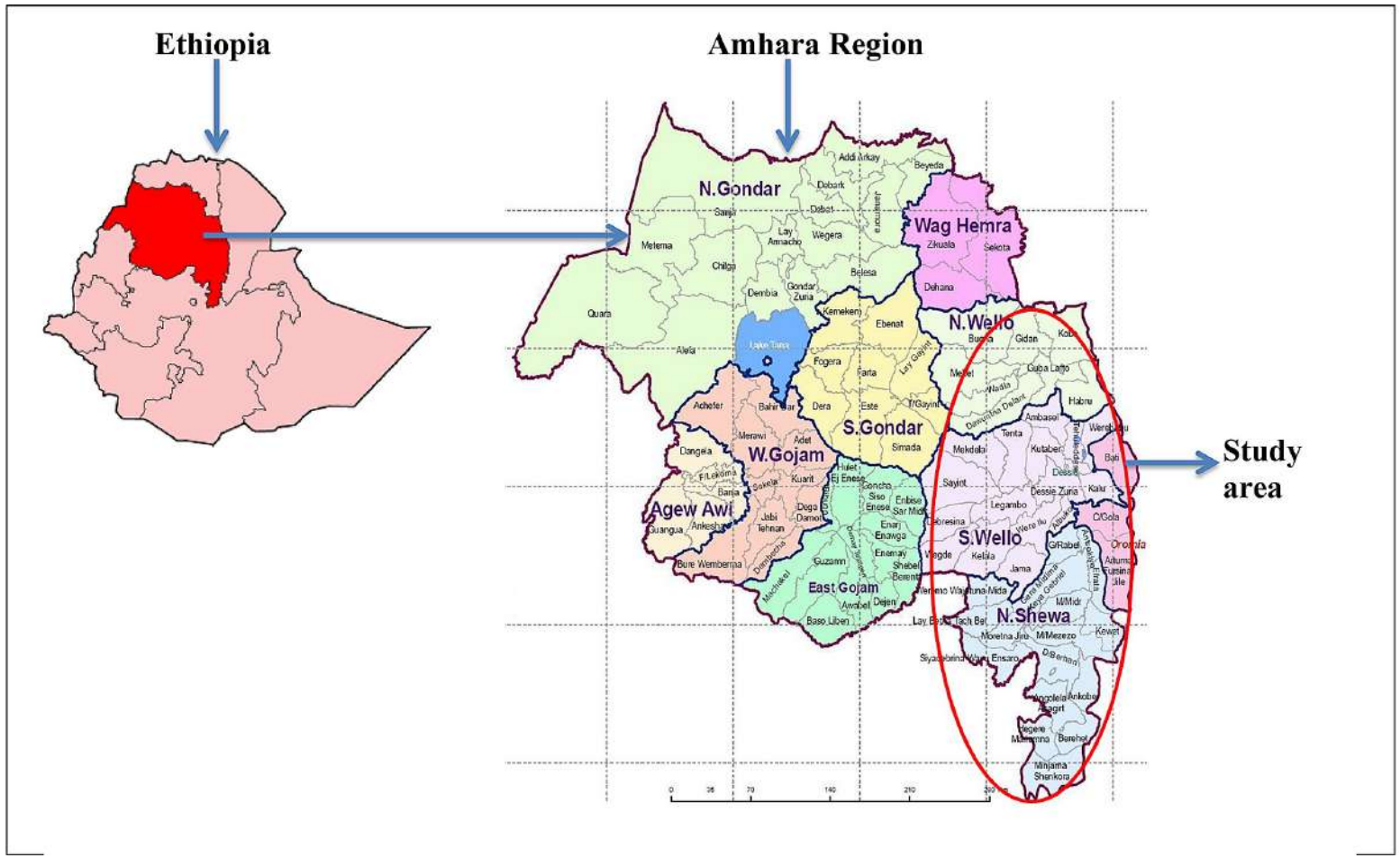
b) Only two pairs

c) Only three pairs

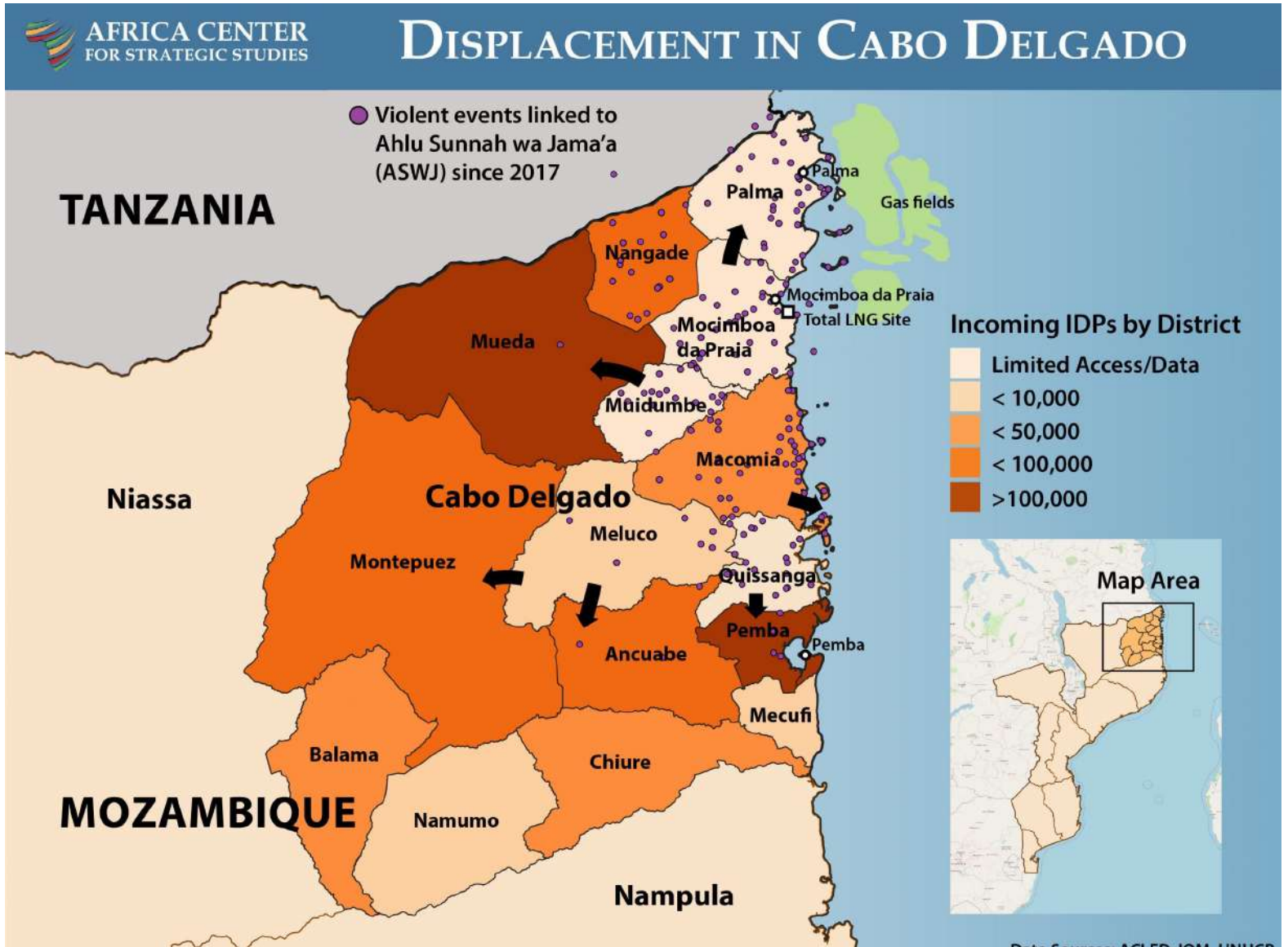
d) All four pairs


Black Sea
Greater Caucasus
Thrace
pontides
NAF
Aegean Sea
Anatolian Plateau
EAF
Taurides
Arabian Platform
DSF
Eastern Mediterranean
Eratosthenes seamount
2000
0
-2000
-4000
-6000
200 km
24°
28°
32°
36°
40°
44°
37°
35°


Ethiopia
Amhara Region
N.Gondar
Wag Hemra
N.Wello
S.Gondar
W.Gojam
Agew Awi
East Gojam
S.Wello
N.Shewa
Study area


ATLANTIC OCEAN
GERMANY
FRANCE
ITALY
SPAIN
CATALONIA
MEDITERRANEAN SEA

Cabo Delgado is the northernmost province of Mozambique.



Q. Consider the following pairs:

Region often mentioned in the news Country

1. **Anatolia – Turkey**
2. **Amhara – Ethiopia**
3. Cabo Delgado –Spain
4. **Catalonia – Italy - Spain**

How many pairs given above are correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

Q. The term "Levant“ often heard in the news roughly corresponds to which of the following regions ? (2022)

a) Region along the eastern Mediterranean shores

b) Region along North African shores stretching from Egypt to Morocco

c) Region along Persian Gulf and Horn of Africa

d) The entire coastal areas of Mediterranean Sea

Q. The term "Levant" often heard in the news roughly corresponds to which of the following regions ? (2022)

a) **Region along the eastern Mediterranean shores**

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c) Region along Persian Gulf and Horn of Africa

d) The entire coastal areas of Mediterranean Sea


THE
LEVANT
GREECE
Sea
İzmir
Athens
Denizli
TURKEY
Kayseri
Konya
TAURUS
Antalya
Adana
Gaziantep
İçel
(Mersin)
Aleppo
Nicosia
CYPRUS
Latakia
SYRIA
Ḥimṣ
Beirut
Mediterranean Sea
LEBANON
Damascus
ISRAEL
Golan
Heights
Tel Aviv-
Yafo
West Bank
Port
Said
Jerusalem
Amman
Alexandria
Dead Sea
Gaza Strip
Cairo
Suez
JORDAN
QATTARA
DEPRESSION
Al Jīzah
Al
'Aqabah
Tabūk
Asyūṭ
WESTERN
EGYPT

The Levant is an old term referring to countries of the eastern Mediterranean. Some scholars include in it Cyprus and a small part of Turkey. But basically the Levant has throughout history **meant Syria, Lebanon** and Palestine. This means **Jordan, the West Bank** (now under Israeli occupation) **and Israel** itself are part of the Levant.

Q. Consider the following countries : (2022)

1. Azerbaijan
2. Kyrgyzstan
3. Tajikistan
4. Turkmenistan
5. Uzbekistan

Which of the above have borders with Afghanistan ?

a) 1, 2 and 5 only
b) 1, 2, 3 and 4 only
c) 3, 4 and 5 only
d) 1, 2, 3, 4 and 5

Q. Consider the following countries : (2022)

1. Azerbaijan
2. Kyrgyzstan
3. Tajikistan
4. **Turkmenistan – TAPI Pipeline**
5. Uzbekistan

Which of the above have borders with Afghanistan ?

a) 1, 2 and 5 only
b) 1, 2, 3 and 4 only
c) **3, 4 and 5 only**
d) 1, 2, 3, 4 and 5

Route of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline


Russia
Astana
Kazakhstan
Uzbekistan
Kyrgyzsta
Tashkent
Caspian Sea
Azer-baijan
Baku
Turkmenistan
Ashgabat
Tajikistan
Dushanbe

Afghanistan is bounded to the east and south by Pakistan (including those areas of Kashmir administered by Pakistan but claimed by India), to the west by I**ran, and to the north by the Central Asian states of Turkmenistan, Uzbekistan, and Tajikistan.**

Q. Which one of the following is a part of the Congo Basin? (2023)

a) Cameroon
b) Nigeria
c) South Sudan
d) Uganda

Q. Which one of the following is a part of the Congo Basin?

a) **Cameroon**
b) Nigeria
c) South Sudan
d) Uganda

- **The Basin stretches across six countries- Cameroon, Central African Republic, Democratic Republic of the Congo, Congo, Equatorial Guinea and Gabon.**

COMMUNITIES IN NEWS

Q) Consider the following pairs: (2013)

Tribe : State

1) Limboo (Limbu) : Sikkim
2) Karbi : Himachal Pradesh
3) Dongaria Kondh : Odisha
4) Bonda : Tamil Nadu

Which of the above pairs are correctly matched?

a) 1 and 3 only
b) 2 and 4 only
c) 1, 3 and 4 only
d) 1, 2, 3 and 4

Q23) Consider the following pairs: (2013)

Tribe : State

1) Limboo (Limbu) : Sikkim

2) Karbi : Himachal Pradesh - Assam

3) Dongaria Kondh : Odisha

4) Bonda : Tamil Nadu - **Odisha**

Which of the above pairs are correctly matched?

a) 1 and 3 only

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c) 1, 3 and 4 only

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Tribe : State

1) Limboo (Limbu) : Sikkim
2) Karbi : Assam
3) Dongaria Kondh : Odisha
4) Bonda : Odisha

Table No. 1A: State-wise major tribes of India

Sl_No.	States/UTs	Major Tribes
1	Andaman and Nicobar Islands	Jarawa , Oraons, Onges, Sentinelese, Shompens
2	Andhra Pradesh	Andh, Sadhu Andh, Bhagata, Bhil, Chenchus (Chenchawar), Gadabas, Gond, Goundu, Jatapus, Kammara, Kattunayakan, Kolawar, Kolam, Konda, Manna Dhora, Pardhan, Rona, Savaras, Dabba Yerukula, Nakkala, Dhulia, Thoti, Sugalis.
3	Arunachal Pradesh	Apatanis, Abor, Dafla, Galong, Momba, Sherdukpen, Singpho.
4	Assam	Chakma, Chutiya, Dimasa, Hajong, Garos, Khasis, Gangte.
5	Bihar	Asur, Baiga, Birhor, Birjia, Chero, Gond, Parhaiya, Santhals, Savar.
6	Chhattisgarh	Agariya, Bhaina, Bhattra, Biar, Khond, Mawasi, Nagasia.
7	Goa	Dhodia, Dubia, Naikda, Siddi,Varli.
8	Gujarat	Barda, Bamcha, Bhil, Charan, Dhodia, Gamta, Paradhi, Patelia.
9	Himachal Pradesh	Gaddis, Gujjars, Khas, Lamba, Lahaulas, Pangwala, Swangla.
10	Jammu and Kashmir	Bakarwal, Balti, Beda, Gaddi, Garra, Mon, Purigpa, Sippi.
11	Jharkhand	Birhors, Bhumij, Gonds, Kharia, Mundas, Santhals, Savar.
12	Karnataka	Adiyan, Barda, Gond, Bhil, Iruliga, Koraga, Patelia, Yerava.
13	Kerala	Adiyan, Arandan, Eravallan, Kurumbas, Malai arayan, Moplahs, Uralis.
14	Madhya Pradesh	Baigas, Bhils, Bharia, Birhors, Gonds,Katkari, kharia, Khond, Kol, Murias.
15	Maharashtra	Bhaina, Bhunjia, Dhodia, Katkari, Khond, Rathawa, Warlis.
16	Manipur	Aimol, Angami, Chiru, Kuki, Maram, Monsang, Paite, Purum, Thadou.
17	Meghalaya	Chakma, Garos, Hajong, Jaintias Khasis, Lakher, Pawai, Raba.
18	Mizoram	Chakma, Dimasa, Khasi, Kuki, Lakher, Pawai, Raba, Synteng.
19	Nagaland	Angami, Garo, Kachari, Kuki, Mikir, Nagas, Sema.
20	Odisha	Gadaba, Ghara, Kharia, Khond, Matya, Oraons, Rajuar, Santhals.
21	Rajasthan	Bhils, Damaria, Dhanka, Meenas(Minas), Patelia, Sahariya.
22	Sikkim	Bhutia, Khas, Lepchas.
23	Tamil Nadu	Adiyan, Aranadan, Eravallan, Irular, Kadar, Kanikar, Kotas, Todas
24	Telangana	Chenchus.
25	Tripura	Bhil, Bhutia, Chaimal, Chakma, Halam, Khasia, Lushai, Mizel, Namte.
26	Uttarakhand	Bhotias, Buksa, Jannsari, Khas, Raji, Tharu.
27	Uttar Pradesh	Bhotia, Buksa, Jaunsari, Kol, Raji, Tharu.
28	West Bengal	Asur, Khond, Hajong, Ho, Parhaiya, Rabha, Santhals, Savar.

Source: Indian Census

Q) With reference to 'Changpa' community of India, consider the following statements : (2014)

1) They live mainly in the State of Uttarakhand.

2) They rear the Pashmina goats that yield a fine wool.

3) They are kept in the category of Scheduled Tribes.

Which of the statements given above is/are correct ?

a) 1 only

b) 2 and 3 only

c) 3 only

d) 1, 2 and 3

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Changpa Community

- **Changtang,** a high plateau that stretches across the cold desert of Ladakh and also in some parts of Jammu and Kashmir.

- Livelihood through the rearing of Pashmina goats and also own yaks and sheeps.

- 1989 – Scheduled Tribes

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MISCELLANEOUS

Q. The most important strategy for the conservation of biodiversity together with traditional human life is the establishment of(2013)

a) Biosphere reserves

b) Botanical gardens

c) National parks

d) Wildlife sanctuaries

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Biosphere Reserves

- There are 18 Biosphere Reserves in India.
- Biosphere Reserves are special environments for both people and nature and are living examples of how human beings and nature can co-exist while respecting each other's needs.

Q) Which of the following National Parks is unique in being a swamp with floating vegetation that supports a rich biodiversity?

a) Bhitarkanika National Park
b) Keibul Lamjao National Park
c) Keoladeo Ghana National Park
d) Sultanpur National Park

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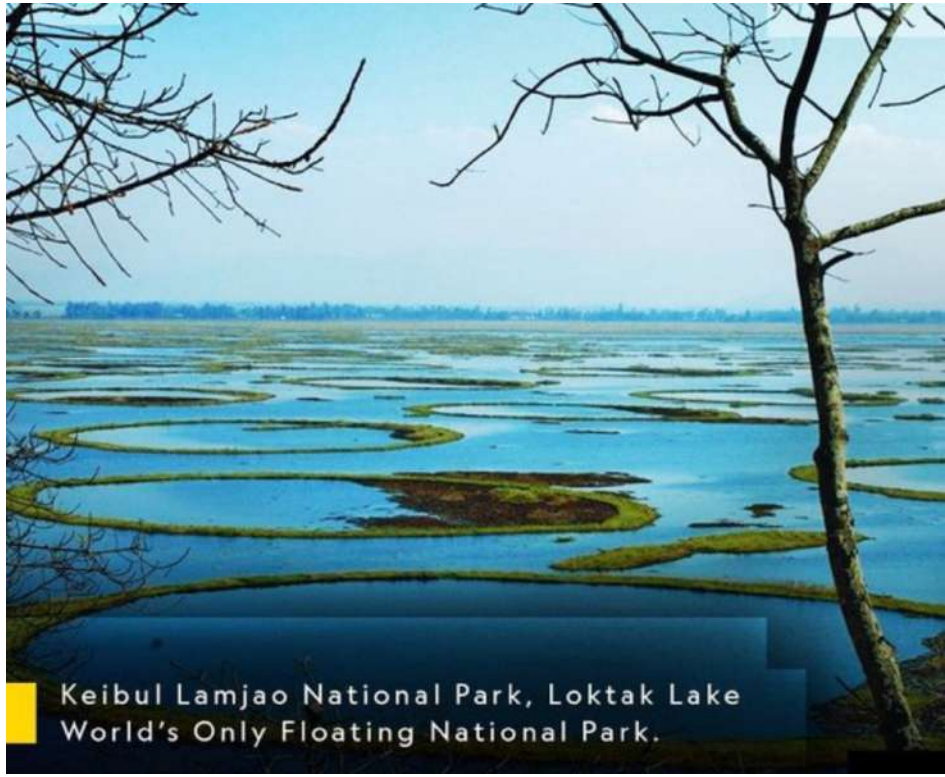
Photo courtesy: Reddit

- **Keibul Lamjao National Park -** Manipur in India. **Note – Sangai Deer**
- The park is situated on the **southern shore of the Loktak Lake – the largest fresh water lake in Eastern India**, which has been declared a Ramsar site.(Rudrasagar lake - Tripura)
- It is **only floating park** in the world.
- It is characterized by floating decomposed plant material locally called **phumdi (floating mass of entangled vegetation formed by the accumulation of organic debris and biomass with soil**)



Q. Between India and East Asia, the navigation-time and distance can be greatly reduced by which of the following? (2011)

1. Deepening the Malacca straits between Malaysia and Indonesia.
2. Opening a new canal across the Kra isthmus between the Gulf of Siam and Andaman Sea.

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PROPOSED ROUTE FOR THAILAND CANAL
THAILAND
Bangkok
SOUTH CHINA SEA
CAMBODIA
VIETNAM
GULF OF THAILAND
ANDAMAN SEA
KRA CANAL
PACIFIC OCEAN
Songkhla
MALACCA STRAIT
Satun
Penang
MALAYSIA
INDIAN OCEAN
Kuala Lumpur
SINGAPORE
MALAYSIA
New canal route would shorten

- The Malacca strait is the main shipping channel between the Indian Ocean and the Pacific Ocean and links the India, China, Japan and South Korea. The **issue of deepening of the Malacca strait is linked to its economic importance rather than "time of navigation and distance**".
- The issue is that most of the ships cannot pass through it and the size of the biggest ships which can enter through it is called **Malaccamax**. Now the deepening of the strait would certainly help in "Increasing the volume of the business" because ships of larger sizes can pass thru it, there is no significance of distance and navigation

Q. Gandikota canyon of South India was created by which one of the following rivers. (2022)

a) Cauvery
b) Manjira
c) Pennar
d) Tungabhadra

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- Gandikota is a village and historical fort on the right bank of the Pennar river, in Kadapa district, Andhra Pradesh, India. The fort was the centre of power for various dynasties, such as the Kalyani Chalukyas, Pemmasani Nayakas, and the Golconda Sultanate.

Q) In a particular region in India, the local people train the roots of living trees into robust bridges across the streams. As the time passes, these bridges become stronger. These unique 'living root bridges' are found in (2015)

a) Meghalaya

b) Himachal Pradesh

c) Jharkhand

d) Tamil Nadu

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- Meghalaya’s double-decker and single-decker root bridges are unique in the world and are a sight to behold.
- The bridges are tangles of massive thick roots, which have been intermingled to form a bridge that can hold several people at a time.
- Khasi people have been trained to grow these bridges across the raised banks of streams to form a solid bridge, made from roots.

Q) Consider the following towns of India :

1) Bhadrachalam
2) Chanderi
3) Kancheepuram
4) Karnal

Which of the above are famous for the production of traditional sarees/fabric?

a) 1 and 2 only
b) 2 and 3 only
c) 1, 2 and 3 only
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1) Chanderi – Chanderi Sarees - Madhya Pradesh
2) Kancheepuram - Silk Saree – Tamil Nadu

Q) At one of the place in India, if you stand on the seashore and watch the sea, 'you will find that the sea water recedes from the shore line a few kilometres and comes back to the shore, twice a day, and you can actually walk on the sea floor when the water recedes. This unique phenomenon is seen at (2017)

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d) Nagapattinam

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- Chandipur – Odisha .
- This beach is unique in the whole world no where on earth you can find a beach where the **sea water retreats inside the sea from 1km to 5Km every day and it again comes back to the shore slowly during high tide**. This happens twice every day.

Note :

The Chandipur beach is also known for its proximity to the **Defence Research and Development Organisation's (DRDO) Integrated Test Range**

Q) Electrically charged particles from space travelling at speeds of several hundred km/sec can severely harm living beings if they reach the surface of the Earth. (2012)

What prevents them from reaching the surface of the Earth?

a) The Earth's magnetic field diverts them towards its poles.

b) Ozone later around the Earth reflects them back to outer space.

c) Moisture in the upper layers from reaching the surface of the Earth.

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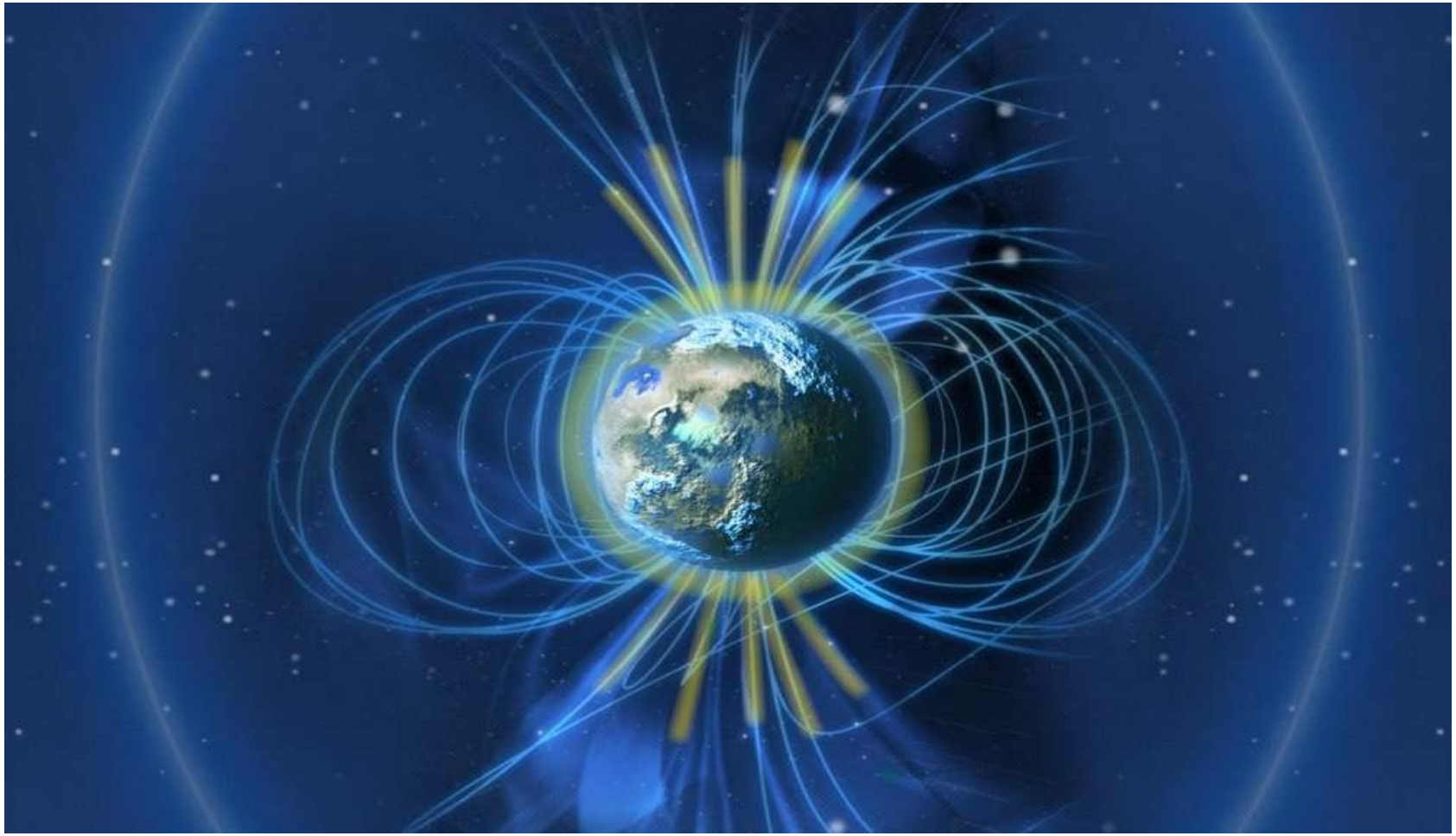
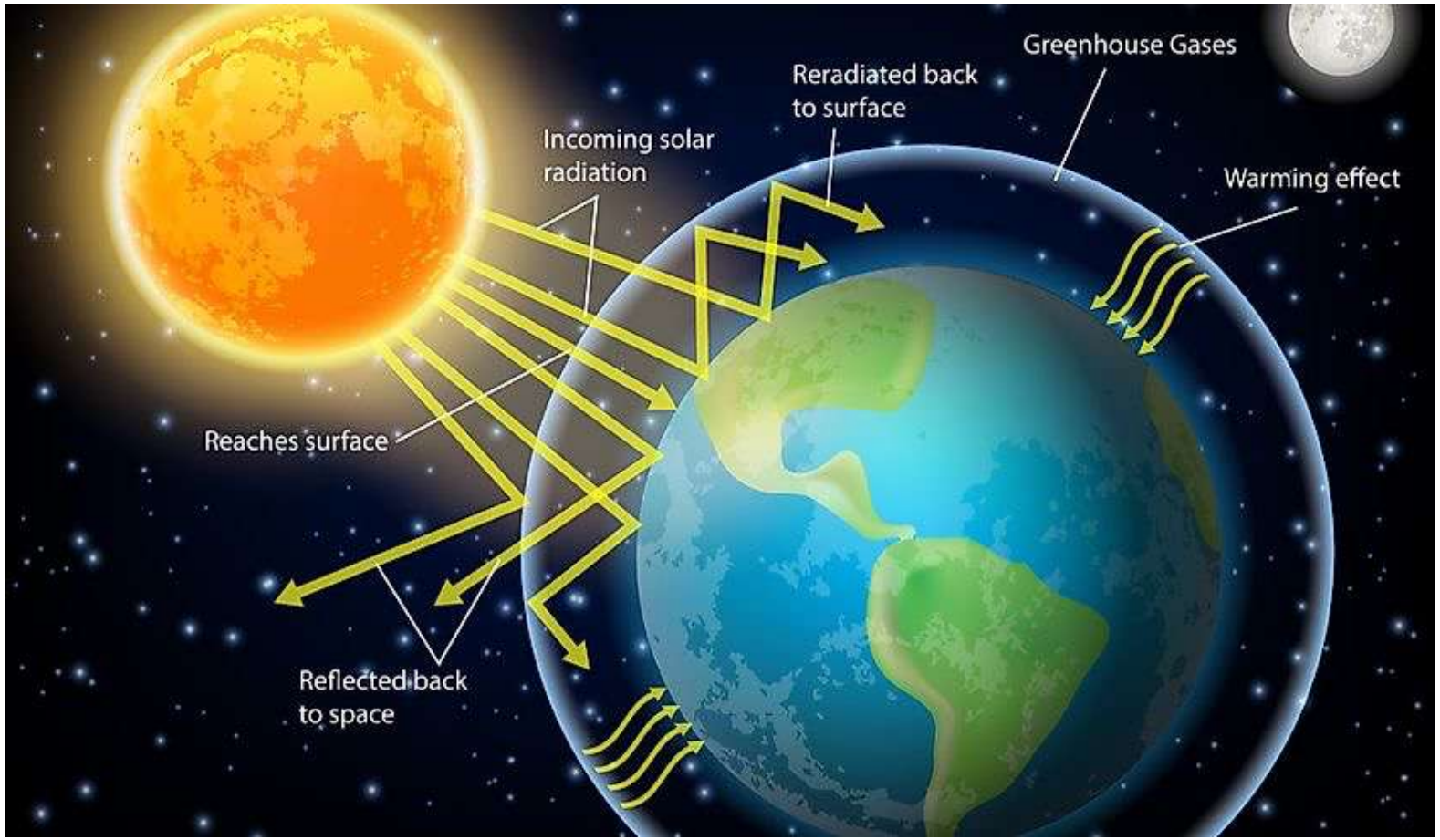
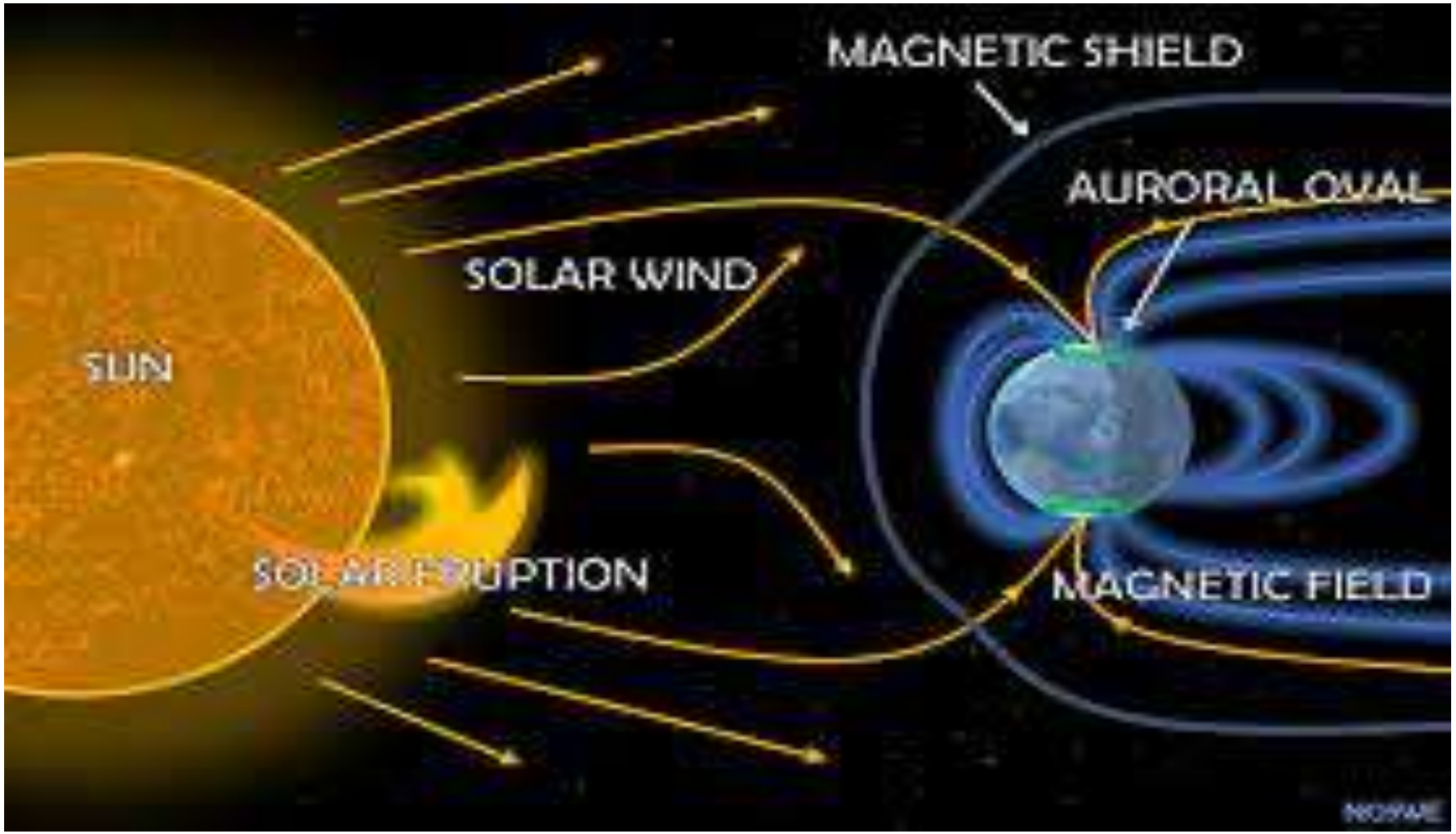
Earth's Magnetic Field



Electrically charged particles from space



Aurora


MAGNETIC SHIELD
AURORAL OVAL
SOLAR WIND
SUN
MAGNETIC FIELD

- **Earth's magnetic field**, also known as the geomagnetic field, is the magnetic field that extends from y**, where it interacts with the solar wind, a stream of charged particles emanating from the Sun.**

- The magnetic field is generated by **electric currents** due to the **motion o**f convection currents of **a mixture of molten iron and nickel in Earth's outer core**.

- Earth's magnetic field **deflects most of the solar wind,** whose charged particles would **otherwise strip away the ozone layer that protects the Earth from harmful ultraviolet radiation.**

- **Note**

AURORA

- The typical aurora is caused by **collisions between fast-moving electrons from space with the oxygen and nitrogen in Earth's upper atmosphere.**

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Q) A person stood alone in a desert on a dark night and wanted to reach his village which was situated 5 km east of the point where he was standing. He had no instruments to find the direction but he located the polestar. The most convenient way now to reach his village is to walk in the (2012)

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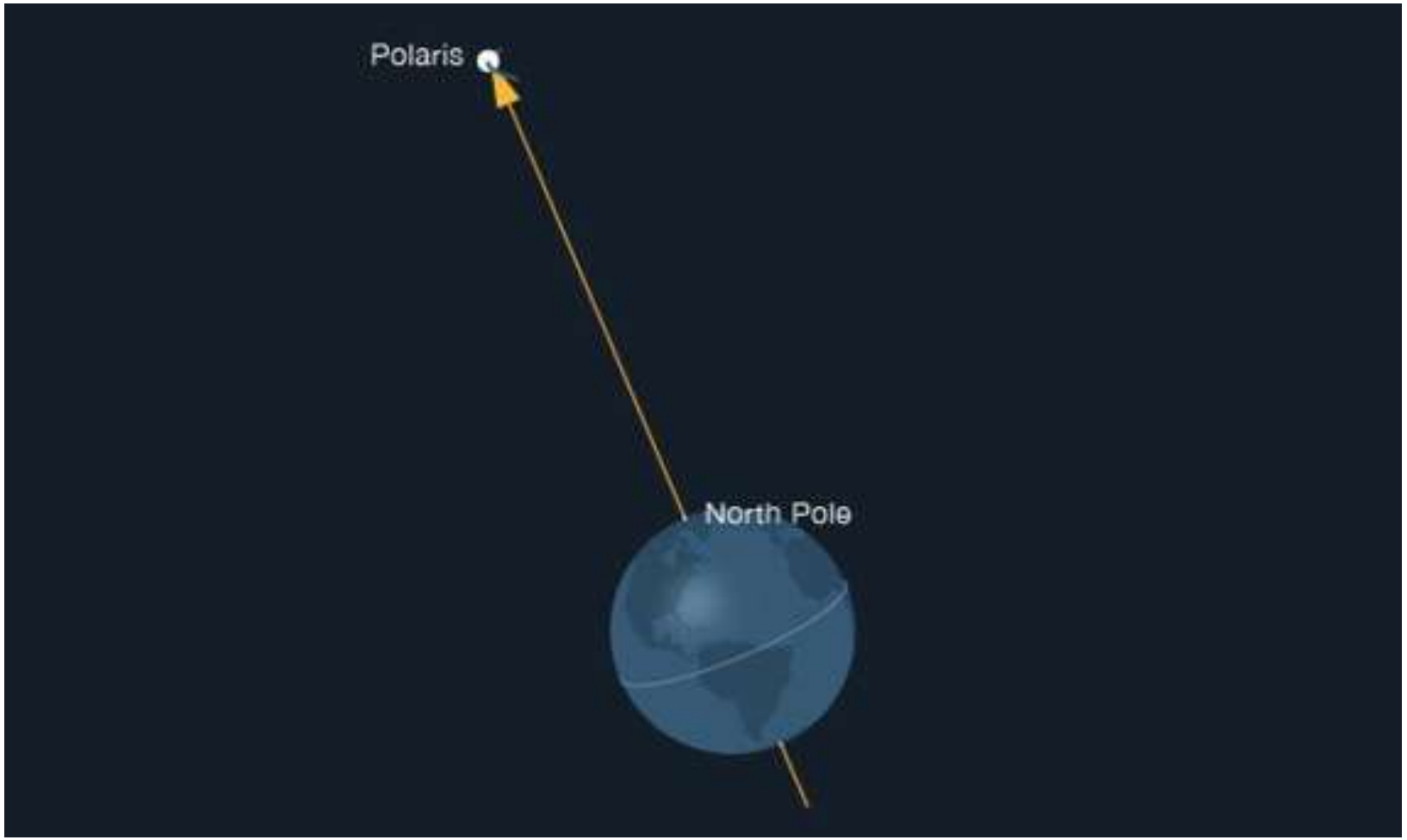
Polaris
North Pole

- The Pole Star - **North Star or Polaris that lies closely in line with the axis of the Earth's rotation "above" the North Pole**, i.e., the north celestial pole.

- Therefore, **it makes an excellent fixed point from which scientists draw measurements for celestial navigation and astrometry.**

Q) Which of the following has/have shrunk immensely/dried up the recent past due to human activities? (2018)

1) Aral Sea
2) Black Sea
3) Lake Baikal

Select the correct answer using the code given below:

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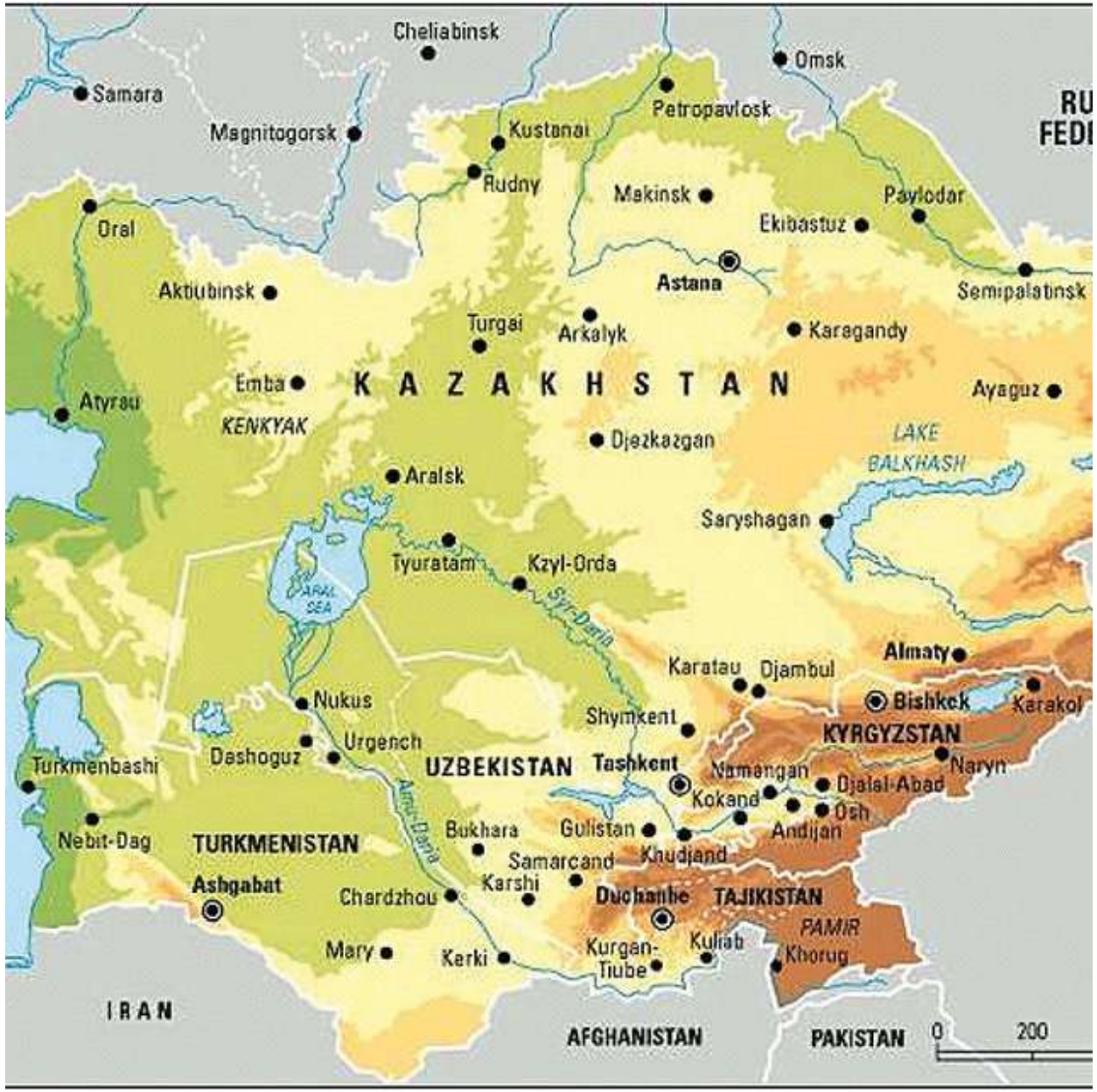
Cheliabinsk
Omsk
Samara
Petropavlosk
RU
FED
Magnitogorsk
Kustanai
Rudny
Makinsk
Pavlodar
Ekibastuz
Oral
Astana
Aktiubinsk
Semipalatinsk
Turgai
Arkalyk
Karagandy
Emba
KAZAKHSTAN
Ayaguz
Atyrau
KENKYAK
Djezkazgan
LAKE
BALKHASH
Aralsk
Saryshagan
Tyuratam
Kzyl-Orda
ARAL
SEA
Syr-Daria
Almaty
Karatau
Djambul
Bishkek
Karakol
Nukus
Shymkent
KYRGYZSTAN
Urgench
Dashoguz
UZBEKISTAN
Tashkent
Namangan
Naryn
Turkmenbashi
Djalal-Abad
Kokand
Osh
Amu-Darya
Andijan
Nebit-Dag
TURKMENISTAN
Bukhara
Gulistan
Khudjand
Samarcand
Karshi
Ashgabat
Chardzhou
Duchanbe
TAJIKISTAN
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AFGHANISTAN
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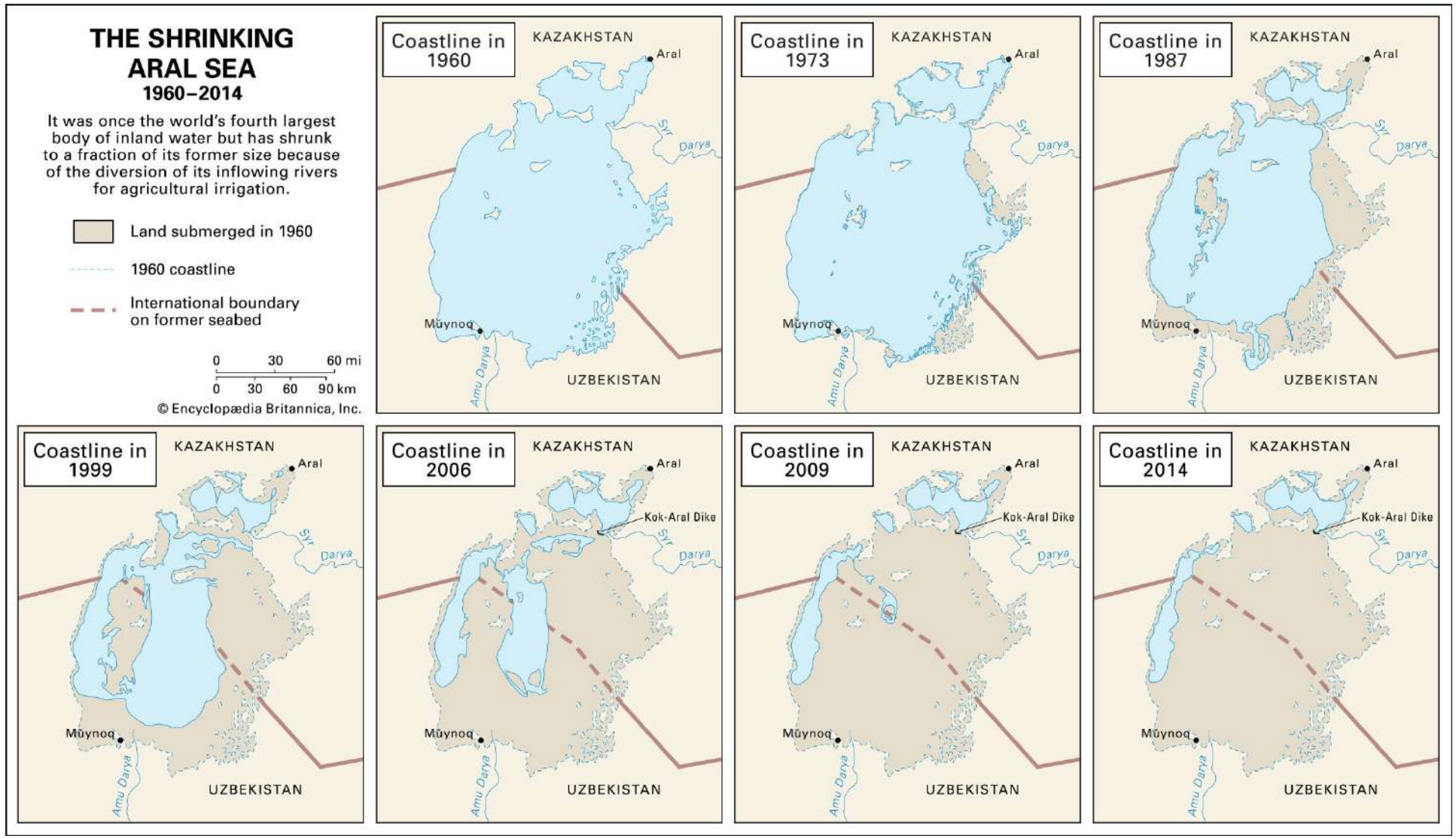
THE SHRINKING ARAL SEA
1960–2014
It was once the world's fourth largest body of inland water but has shrunk to a fraction of its former size because of the diversion of its inflowing rivers for agricultural irrigation.
Land submerged in 1960
1960 coastline
International boundary on former seabed
0 30 60 mi
0 30 60 90 km
© Encyclopædia Britannica, Inc.
Coastline in 1960
Coastline in 1973
Coastline in 1987
Coastline in 1999
Coastline in 2006
Coastline in 2009
Coastline in 2014
KAZAKHSTAN
UZBEKISTAN
Aral
Müynoq
Amu Darya
Syr Darya
Kok-Aral Dike


RUSSIA
LAKE BAIKAL
KAZAKHSTAN
MONGOLIA
CHINA
WWW.FREEWORLDMAPS.NET

- Aral Sea has shrunk by about 75% of its original size mainly because of water diversion for agricultural usages in surrounding areas - **Beginning about 1960, the Aral Sea's water level was systematically and drastically reduced, because of the diversion of water from the Amu Darya and Syr Darya rivers for purposes of agricultural irrigation**.
- The depth of Aral Sea has also decreased from 68 meters in the 1960 s to less than 10 m in the present day.

- **Lake Baikal-** water level has gone below critical mark multiple times (Basically there is fluctuation in levels but not shrinkage)

- **Black Sea** – 40% habitable space compression – due to eutrophication and global warming (again not shrinkage)

Aral Sea

- By the late 1980s the lake had lost more than half the volume of its pre-1960 water. **The salt and mineral content of the lake rose drastically** because of that, **making the water unfit for drinking purposes and killing off the once-abundant supplies** of fishes in the lake. **The fishing industry along the Aral Sea was thus virtually destroyed.**
- The contraction of the Aral Sea also **made the local climate noticeably harsher, with more-extreme winter and summer temperatures**.

Aral Sea

- **Winds blowing across the exposed seabed produced dust storms** that buffeted the region with a toxic dust contaminated with **salt, fertilizer, and pesticides.** As a result, **the areas's inhabitants have suffered health problems at unusually high rates**—from throat cancers to anemia and kidney diseases—and infant mortality in the region has been among the highest in the world.

Special Prelims Based Session - 1

One Shot Series - Complete World Climate Types in One Video - UPSC Prelims 2023

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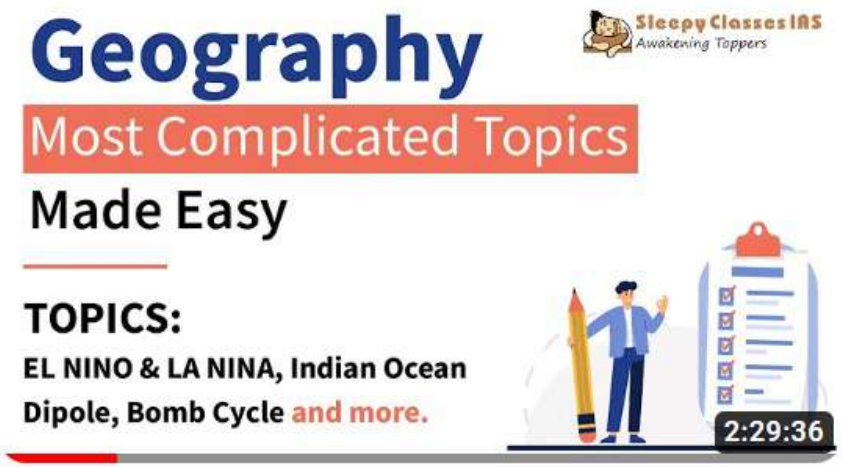
1).Hot, Wet Equatorial Climate. | 2).The Tropical monsoon & Tropical Marine Climate. | 3).The... 11 chapters

Special Prelims Based Session – 2



Maha Video -El Nino Modoki , La Nina Modoki, Madden Jullien Oscillation , Bomb Cyclone, Jet Streams

6.9K views • 6 months ago

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THANK YOU