



**Sleepy Classes IAS**  
Awakening Toppers

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**Pre-Mix**

**(Geography)**

*Compilation*

**(September to December 2022)**

## Questions

**1. Consider the following statements:**

1. Daylight increases as we move polewards in summer in the northern hemisphere.
2. The period of twilight in Britain is longer than in Malaysia.
3. A ship crossing the international date line at midnight on Wednesday eastwards finds that it is midnight, Tuesday, on the American side.

**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

**2. Consider the following pairs:**

**Name of Lake - Location**

1. Great Slave Lake - South America
2. Superior Lake - North America
3. Lake Victoria - Africa

**Which of the pairs given above is/are correct?**

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. 1, 2 and 3

**3. Which one of the following pairs is incorrectly matched?**

**Geographical Feature Region**

- A. Drakensberg Mountains: South Africa
- B. Atlas Mountains: North-Western Africa
- C. Zagros Mountains: West Asia
- D. Pyrennes Mountains: South America

**4. Which of the following pairs are correctly matched?**

Feature	Description
<b>Gulf</b>	It is a narrow body of water that connects two larger bodies of water.
<b>Cape</b>	It is a high point of land that extends into a river, lake, or ocean.
<b>Peninsula</b>	It is a piece of land that is almost entirely surrounded by water but is connected to the mainland on one side.

**Select the correct answer using the code given below:**

- A. 1 and 2 only
- B. 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

**5. Consider the following pairs**

Desert	Bordering Ocean Current
<b>Gobi Desert</b>	<b>Canary current</b>
<b>Namib Desert</b>	<b>Benguela current</b>
<b>Atacama Desert</b>	<b>Peruvian Current</b>
<b>Mohave Desert</b>	<b>West Australian Current</b>

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

- A. 2 and 3 only
- B. 1 and 3 only
- C. 1, 2 and 4 only
- D. 1, 2, 3 and 4

## Answers & Explanations

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### 1. Consider the following statements:

1. Daylight increases as we move pole wards in summer in the northern hemisphere.
2. The period of twilight in Britain is longer than in Malaysia.
3. A ship crossing the international date line at midnight on Wednesday eastwards finds that it is midnight, Tuesday, on the American side.

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

**Answer: - D**

### Explanation

- Twilight - the soft glowing light from the sky when the sun is below the horizon, caused by the reflection of the sun's rays from the atmosphere

### Statement 1 is correct.

- axis of the earth is inclined to the plane of the ecliptic at the angle of  $66\frac{1}{2}^\circ$ , giving rise of different seasons and varying lengths of day and night, If the axis were perpendicular to this plane, all parts of the globe would have equal days and nights at all times of the year, but we know this is not so. In the northern hemisphere in winter as we go northwards the hours of darkness steadily increase. In the summer (June) conditions are exactly reversed.
- Daylight increases as we go pole wards. At the Arctic Circle, the sun never sets at the Mid-summer (21 June) and there is a complete 24 hours period of continuous daylight.

### Statement 2 is correct.

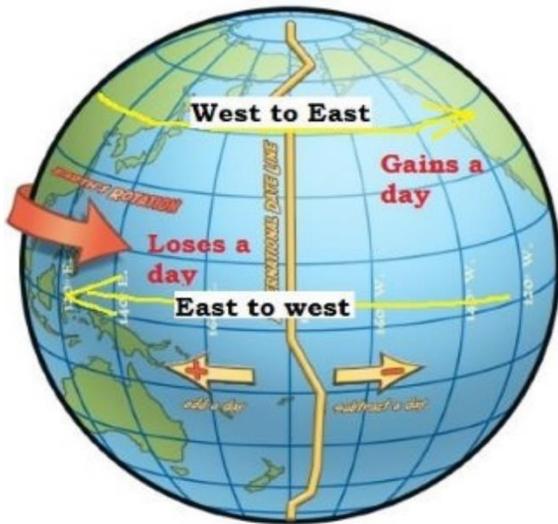
- The duration of twilight at a place depends on the path of the Sun in the sky. In the low latitudes where the Sun's path is almost vertical the duration of twilight is short. The Sun sinks below the horizon rapidly. In the middle and high latitudes the duration of twilight is long because at these latitudes the Sun has an inclined path.
- Britain is located at the higher latitudes compared to Malaysia, thus Britain has higher period of twilight.

### Statement 3 is correct

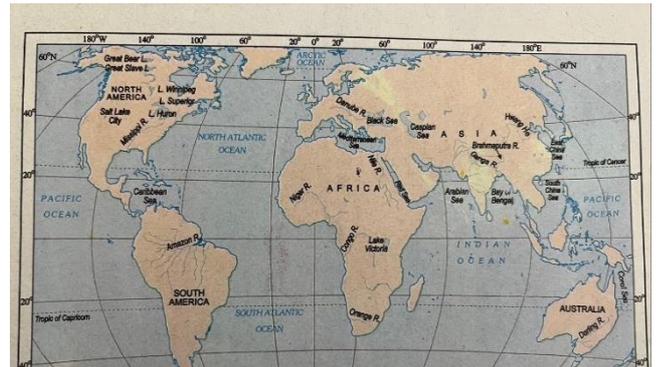
- A ship crossing international date line from West to East gains a day. It repeats a day.
- A day is subtracted from the calendar. So when it is Wednesday mid-night on Asiatic side it is Tuesday midnight on the American side.

### Additional Information

- **International Date Line (IDL):** The International Date Line (IDL) is an imaginary line on the surface of the Earth, that runs from the north to the south pole and demarcates one calendar day from the next.
- It passes through the middle of the Pacific Ocean, roughly following the  $180^\circ$  longitude but it deviates at Aleutian Islands, Fiji, Samoa, and the Gilbert Islands.
- The International Dateline is on the opposite side of the Earth-Prime Meridian.
- A traveller crossing the International Date Line eastbound (i.e., from Japan to the USA) subtracts one day, or 24 hours so that the calendar date to the west of the line is repeated after the following midnight. Crossing the IDL westbound i.e. from west to east results in 24 hours being added, advancing the calendar date by one day.



- Lake Malawi, also known as Lake Nyasa in Tanzania. It is the southernmost lake in the East African Rift system.



2. Consider the following pairs:

Name of Lake - Location

1. Great slave lake. – South America
2. Superior lake - North America
3. Lake Victoria - Africa

Which of the pairs given above is/are correct?

- 1 and 3 only
- 2 and 3 only
- 1 and 2 only
- 1, 2 and 3

Answer: - B

Explanation

Option A is incorrect.

- Great Slave Lake is the second-largest lake in the Northwest Territories of Canada, the deepest lake in North America at 614 m (2,014 ft) and the tenth-largest lake in the world by.

Option B is correct.

- Lake Superior is found in North America, and among freshwater lakes, it is the world's largest by surface area and the third-largest by volume.

Option C is correct.

- Lake Victoria is one of the African Great Lakes. Lake Victoria is Africa's largest lake by area, the world's largest tropical lake.

3. Which one of the following pairs is incorrectly matched?

Geographical Feature      Region

- Drakensberg Mountains: South Africa
- Atlas Mountains: North-Western Africa
- Zagros Mountains: West Asia
- Pyrennes Mountains: South America

Answer: - D



4. Which of the following pairs are correctly matched?

Feature	Description
Gulf	It is a narrow body of water that connects two larger bodies of water.
Cape	It is a high point of land that extends into a river, lake, or ocean.

## Peninsula

It is a piece of land that is almost entirely surrounded by water but is connected to the mainland on one side.

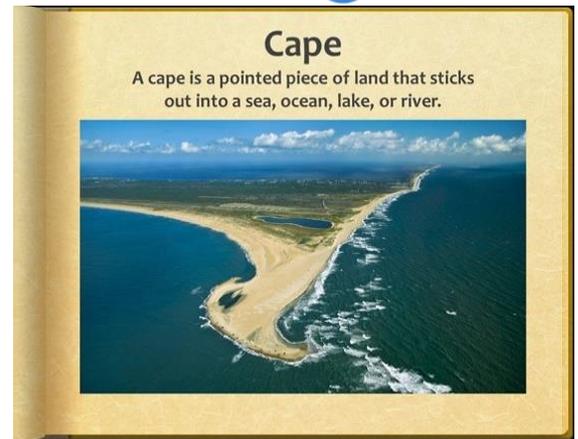
Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: - C

Option c is the correct answer.

- **Pair 1 is incorrect:** A strait is a narrow body of water that connects two larger bodies of water.
- An isthmus is a narrow strip of land that connects two larger landmasses and separates two bodies of water.
- **A gulf is a portion of the ocean that penetrates land. Gulfs vary greatly in size, shape, and depth.** They are generally larger and more deeply indented than bays. Like bays, they often make excellent harbors. Many important trading centers are located on gulfs.
- **Pair 2 is correct: A cape is a high point of land that extends into a river, lake, or ocean.** Some capes, such as the Cape of Good Hope in South Africa, are parts of large landmasses. Others, such as Cape Hatteras in the U.S. state of North Carolina, are parts of islands.
- Peninsulas are similar to capes. Capes are narrow features that jut into a body of water. Peninsulas can be large, and many are barely connected to the mainland at all.
- Capes can be formed through many different processes, including the movement of ocean currents, rivers, erosion, and glaciers.



- **Pair 3 is correct:** A peninsula is a piece of land that is almost entirely surrounded by water but is connected to the mainland on one side.
  - Peninsulas are found on every continent. In North America, the narrow peninsula of Baja California, in Mexico, separates the Pacific Ocean and the Sea of Cortez, also called the Gulf of California. In Europe, the nations of Portugal and Spain make up the Iberian Peninsula.



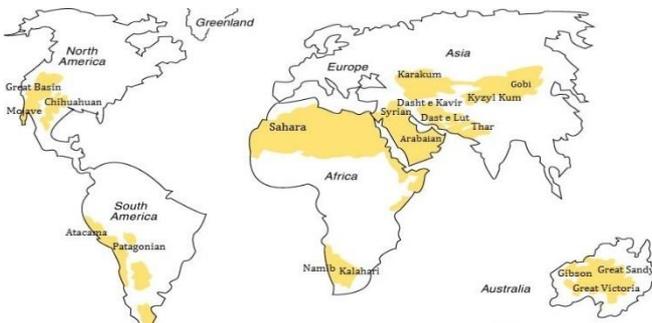
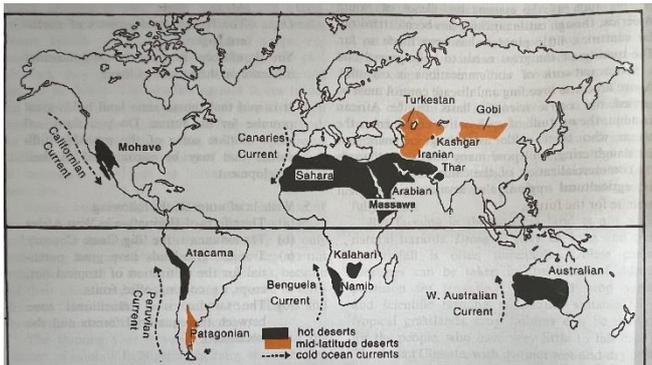
5. Consider the following pairs

Desert	Bordering Ocean Current
Gobi Desert	Canary current
Namib Desert	Benguela current
Atacama Desert	Peruvian Current
Mohave Desert	West Australian Current

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

- A. 2 and 3 only
- B. 1 and 3 only
- C. 1, 2 and 4 only
- D. 1, 2, 3 and 4

Answer: - A



## Questions for Today's

**1. Tropic of cancer passes through which of the following Indian states?**

1. Gujarat
2. Rajasthan
3. Jharkhand
4. Chhattisgarh
5. Manipur

**Select the correct answer using the code given below:**

- A. 1, 2, 3 and 4 only
- B. 2, 3 and 4 only
- C. 3, 4 and 5 only
- D. All of the above.

**2. A particular State in India has the following characteristics:**

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 the forest over 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

**3. Arrange the following land-border length of India with neighbouring countries in decending order:**

1. Pakistan
2. Nepal
3. China
4. Bangladesh
5. Myanmar

**Select the correct order using the code given below:**

- A. 4-3-1-2-5
- B. 4-1-3-5-2
- C. 3-4-1-5-2
- D. 1-4-3-2-5

**4. 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?**

- A. 6
- B. 7
- C. 8
- D. 9

**5. Among the following cities, which one lies on a longitude closest to that of Delhi?**

- A. Bengaluru
- B. Hyderabad
- C. Nagpur
- D. Pune

## Answer With Explanation

Click [here](#) to watch the following topics on YouTube

**1. Tropic of cancer passes through which of the following Indian states?**

1. Gujarat
2. Rajasthan
3. Jharkhand
4. Chattisgarh
5. Manipur

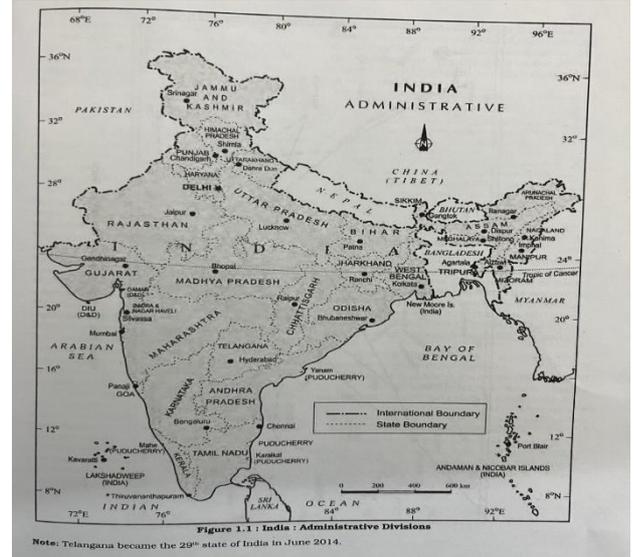
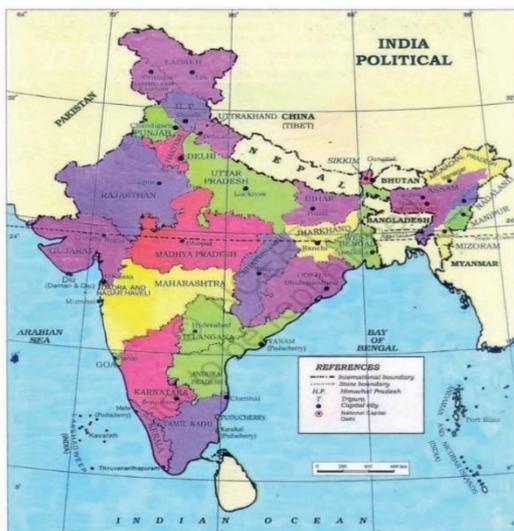
Select the correct answer using the code given below:

- A. 1, 2, 3 and 4 only
- B. 2, 3 and 4 only
- C. 3, 4 and 5 only
- D. All of the above.

**Answer : A**

**Explanation**

- India is located in the northern hemisphere. The Tropic Of Cancer (23°30'N) passes almost halfway through the country. From south to north, mainland of India extends between 8°4'N and 37°6'N latitudes. From west to east, India extends between 68°7'E and 97°25'E longitudes.



**2. A particular State in India has the following characteristics:**

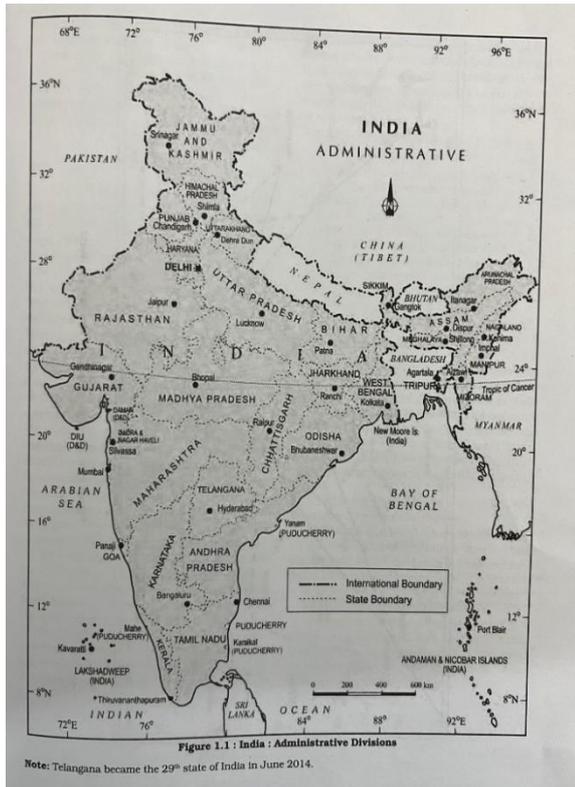
1. It is located on the same latitude which passes through northern Rajasthan.
2. It has over 80% of its area under forest cover.
3. Over 12% of the forest over constitutes Protected Area Network in this State.

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

- A. Arunachal Pradesh
- B. Assam
- C. Himachal Pradesh
- D. Uttarakhand

**Answer : A**

- Arunachal Pradesh and Northern Rajasthan lie on same latitude at around 28°N. Approximately, 82 percent area of Arunachal Pradesh is under forest cover and over 12% of the forest over constitutes Protected Area Network.



border with Thailand, Myanmar and Indonesia

**India sharing border**

- Bangladesh- total length of border is 4,096 kilometres (2,545 mi)
- China- total length of border is 3,488 kilometres (2,167 mi)
- Myanmar total length of border is 1,643 kilometres (1,021 mi)
- Nepal - total length of border is 1,752 kilometres (1,089 mi)
- Pakistan - total length of border is 3,310 kilometres (2,060 mi)
- Bhutan- total length of border is 578 kilometres (359 mi, hence option A is correct).

**3. Arrange the following land-border length of India with neighbouring countries in descending order:**

1. Pakistan
2. Nepal
3. China
4. Bangladesh
5. Myanmar

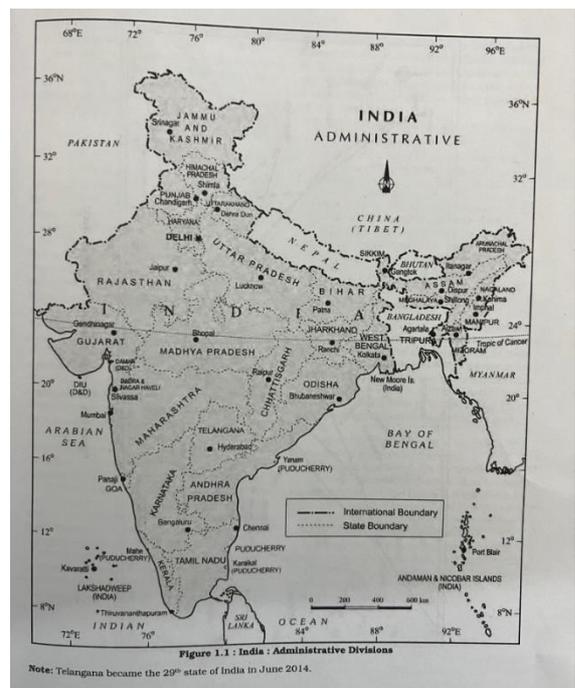
Select the correct order using the code given below:

- A. 4-3-1-2-5
- B. 4-1-3-5-2
- C. 3-4-1-5-2
- D. 1-4-3-2-5

**Answer : A**

**Explanation**

- India shares borders with several sovereign countries; it shares land borders with China, Bhutan, Nepal, Pakistan, Bangladesh and Myanmar and Afghanistan. India's Andaman and Nicobar Islands share a maritime



4. 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?

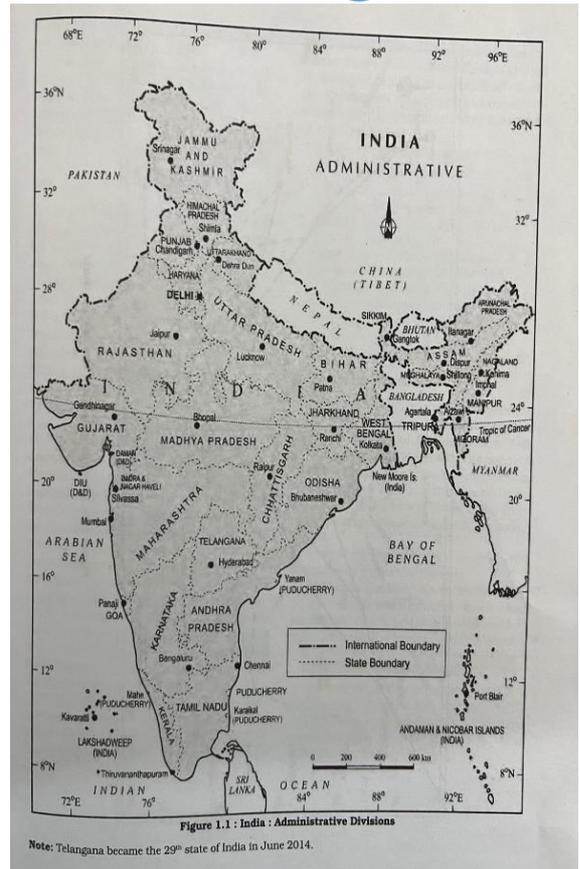
- A. 6
- B. 7
- C. 8
- D. 9

Answer: B

**Explanation**

option b is correct

- If we follow the shortest route, the minimum number of states through which we travel from Kohima (Nagaland) and Kottayam (Kerala):
- Nagaland - Assam - West Bengal - Odisha - Andhra Pradesh - Tamil Nadu or Karnataka - Kerala.



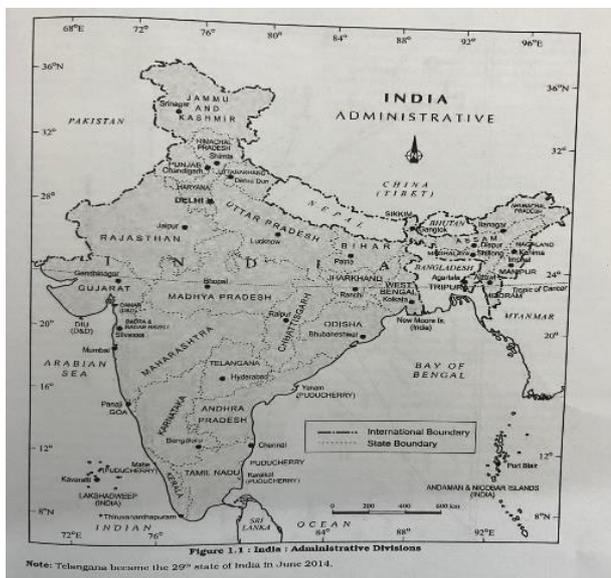
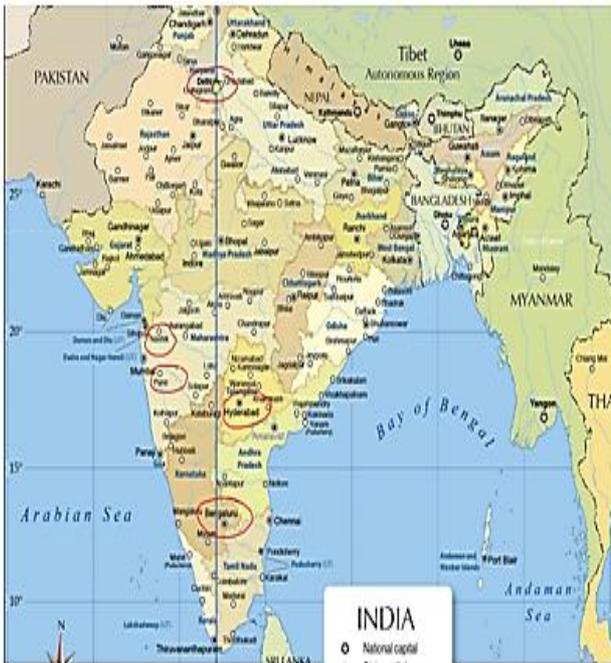
5. Among the following cities, which one lies on a longitude closest to that of Delhi?

- A. Bengaluru
- B. Hyderabad
- C. Nagpur
- D. Pune

Answer : A

**Explanation**

- Longitude is measured by imaginary lines that run around the Earth vertically (up and down) and meet at the North and South Poles. These lines are known as meridians. They are used to define the East-West position of a location on the planet.
- Longitude of Delhi- 77.1025° E
- Longitude of Bengaluru- 77.5946°E
- Longitude of Hyderabad- 78.4867° E
- Longitude of Nagpur- 79.0882° E
- Longitude of Pune- 73.8567° E



## Questions for Today

**1. Which of the following are the evidences of the Himalayas as young fold mountains?**

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

**Select the correct code:**

- A. 1 and 2 only
- B. 1, 2 and 4 only
- C. 3 and 4 only
- D. 1, 2, 3 and 4

**2. Consider the following pairs:**

<b>Pilgrimage sites</b>	<b>Mountains/ hills</b>
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1. Amarnath cave: Himalayan Mountain
2. Charar-e-sharif : Aravalli Range
3. Mt abu temple : Kashmir hill
4. Vaishno Devi shrine : Trikuta hills

**Which of the pairs given above is/are not correctly matched?**

- A. 3 and 4 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. 2 and 4 only

**3. Consider the following statements regarding to peninsula India:**

1. Major part of the Peninsula is made up of gneisses and granites.
2. Karbi-Anglong in the northeast is part of the peninsula block.
3. Some of its western coast is submerged under the sea.

**Which of the statements given above is/are correct?**

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

**4. Which of the following islands are part of Lakshadweep archipelago?**

1. Minicoy island
2. Amini Island
3. Cannanore Island
4. Chetlat island
5. Bitrab island

**Select the correct answer using the code given below:**

- A. 1, 2 and 3 only
- B. 2, 3, 4 and 5 only
- C. 1, 2, 4 and 5 only
- D. All of the above.

**5. Which of the following relics and residual mountains are part of Peninsula India?**

1. Lushai hills
2. Khasi hills
3. Aravali hills
4. Nallamala hills
5. Patkai Bum
6. Javadi hills

**Select the correct answer using the code given below:**

- A. 1, 2 and 4 only
- B. 2, 3, 4 and 6 only
- C. 3, 4, 5 and 6 only
- D. 3, 4 and 6 only

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube

**1. Which of the following are the evidences of the Himalayas as young fold mountains?**

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

**Select the correct code:**

- A. 1 and 2 only
- B. 1, 2 and 4 only
- C. 3 and 4 only
- D. **1, 2, 3 and 4**

**Answer : D**

**Explanation**

- Himalayas are young because they are being formed from the collision between Indian and Eurasian plates, a collision which began only about 30 million years ago and is still going on.
- They are folded mountains because they are formed by folding of the rocks along the edges of both plates from the force, pressure, and heat of the collision.
- Young fold mountains have not yet undergone extensive erosional process of exogenic forces, thus they have deep gorges, U-turn river courses, Parallel mountain ranges and steep gradients.
- These features are generally absent in old fold mountains which are characterized by lower altitude, rounded peaks, gentle slopes and rolling hills.
- Kali Gandaki Gorge, Indus Gorge, etc. are examples of deep gorges in the Himalayan mountains. Hence statement 1 is correct.

- Young fold mountains are rising under the influence of the earth's tectonic forces and these mountains are still continuing vertical growth. Due to these continuous mountain forces, steep gradients and land sliding are common in Himalayan areas.
- A recent glacier landslide in the Chamoli district of Himachal Pradesh is its example. Hence statement 4 is correct.
- The Himalayas consist of three parallel ranges, the Greater Himalayas known as the Himadri, the Lesser Himalayas called the Himachal, and the Shivalik hills, which comprise the foothills. Hence statement 3 is correct.
- Himalayan Rivers form meanders and often shifts their beds and even take U-turn-like shapes.
- They perform meanders because the upper areas of the Himalayas are highly tortuous and there is a sudden reduction of water speed when they enter plains, due to lessening speed rivers get the opportunity to form meanders. Hence statement 2 is correct.

**2. Consider the following pairs:**

Pilgrimage sites	Mountains/ hills
------------------	------------------

- |                          |                    |
|--------------------------|--------------------|
| 1. Amarnath cave:        | Himalayan Mountain |
| 2. Charar-e-sharif :     | Aravalli Range     |
| 3. Mt abu temple :       | Kashmir hill       |
| 4. Vaishno Devi shrine : | Trikuta hills      |

**Which of the pairs given above is/are not correctly matched?**

- A. 3 and 4 only
- B. **2 and 3 only**
- C. 1 and 2 only
- D. 2 and 4 only

Answer : B

### Explanation

- **Pair 1 is correct:** Annual pilgrimage to the cave shrine of Shri Amarnath Ji' is a holy ritual among the Hindu devotees of Lord Shiva. Located in the Himalayan Mountain Range in south Kashmir, the shrine is visited by thousands of devotees and altitude sickness is reportedly common.
- **Pair 2 is incorrect:** Charar-e-Sharief is a Sufi Muslim shrine and mosque situated in the town of Charari Sharief in Budgam district of Jammu and Kashmir union territory, India and one of the oldest and sacrosanct shrines of Indian Muslims, including Kashmir Valley dedicated to a Kashmiri Sufi saint Nund Rishi.
- **Pair 3 is incorrect:** Mount Abu is a hill station in the Aravalli Range in Sirohi district of the state of Rajasthan in western India. The mountain forms a rocky plateau 22 km long by 9 km wide.
- **Pair 4 is correct:** Vaishno Devi shrine is located in the lap of Trikuta hills which is 13 Kms from base camp Katra, which is one of the prominent town of District Reasi and 63 kms from Jammu city.

### 3. Consider the following statements regarding to peninsula India:

1. Major part of the Peninsula is made up of gneisses and granites.
2. Karbi-Anglong in the northeast is part of the peninsula block.
3. Some of its western coast is submerged under the sea.

Which of the statements given above is/are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

### Explanation

- **Statement 2 is correct:** The northern boundary of the Peninsular Block may be taken as an irregular line running from Kachchh along the western flank of the Aravali Range near Delhi and then roughly parallel to the Yamuna and the Ganga as far as the Rajmahal Hills and the Ganga delta. Apart from these, the Karbi Anglong and the Meghalaya Plateau in the northeast and Rajasthan in the west are also extensions of this block. The northeastern parts are separated by the Malda fault in West Bengal from the Chotanagpur plateau. In Rajasthan, the desert and other desert-like features overlay this block.
- **Statement 1 is correct:** The Peninsula is formed essentially by a great complex of very ancient gneisses and granites, which constitutes a major part of it. Since the Cambrian period, the Peninsula has been standing like a rigid block.
- **Statement 3 is correct:** With the exception of some of its western coast which is submerged beneath the sea and some other parts changed due to tectonic activity without affecting the original basement. As a part of the Indo-Australian Plate, it has been subjected to various vertical movements and block faulting. The rift valleys of the Narmada, the Tapi and the Mahanadi and the Satpura block mountains are some examples of it.

### 4. Which of the following islands are part of Lakshadweep archipelago?

1. Minicoy island
2. Amini Island
3. Cannanore Island
4. Chetlat island
5. Bitrab island

Select the correct answer using the code given below:

- A. 1, 2 and 3 only
- B. 2, 3, 4 and 5 only
- C. 1, 2, 4 and 5 only
- D. All of the above.

**Answer : D**

**Explanation**

- The islands of the Arabian sea include Lakshadweep and Minicoy. These are scattered between 8°N-12°N and 71°E - 74°E longitude. These islands are located at a distance of 280 km-480 km off the Kerala coast. The entire island group is built of coral deposits. There are approximately 36 islands of which 11 are inhabited. Minicoy is the largest island with an area of 453 sq. km.
- The entire group of islands is broadly divided by the Ten degree channel, north of which is the Amini Island and to the south is the Cannanore Island.
- The Islands of this archipelago have storm beaches consisting of unconsolidated pebbles, shingles, cobbles and boulders on the eastern seaboard.

5. Which of the following relics and residual mountains are part of Peninsula India?

- 1. Lushai hills
- 2. Khasi hills
- 3. Aravali hills
- 4. Nallamala hills
- 5. Patkai Bum
- 6. Javadi hills

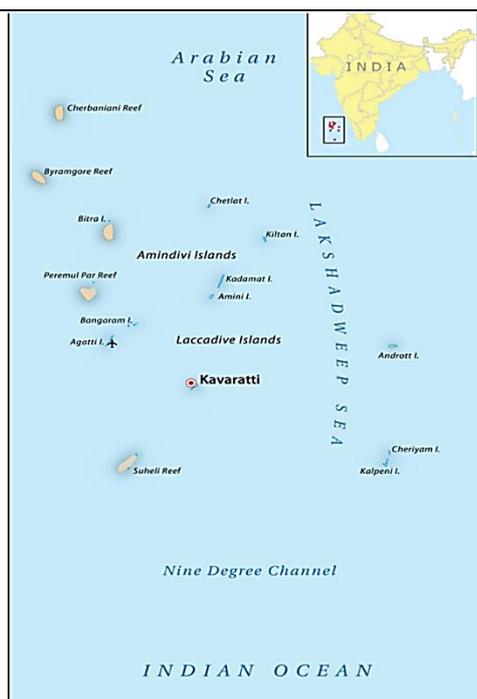
Select the correct answer using the code given below:

- A. 1, 2 and 4 only
- B. 2, 3, 4 and 6 only
- C. 3, 4, 5 and 6 only
- D. 3, 4 and 6 only

**Answer : B**

**Explanation**

- **Option B is correct:** The rift valleys of the Narmada, the Tapi and the Mahanadi and the Satpura block mountains are some examples of it. The Peninsula mostly consists of relict and residual mountains like the Aravali hills, the Nallamala hills, the Javadi hills, the Veliconda hills, the Palkonda range and the Mahendragiri hills, etc.
- Khasi Hills section of the Shillong Plateau and Cachar Hills section of the Karbi Anglong Plateau are also part of Peninsular India.
- The river valleys here are shallow with low gradients. Lushai Hills are present in Mizoram and are part of the Purvanchal Range. Patkai Bum are present in Nagaland.



## Questions for Today

**1. Consider the following pairs:**

Mountain Pass	Location
1. Thal Ghat	Mumbai and Pune
2. Bhor Ghat	Mumbai and Nasik
3. Pal Ghat	Coimbatore and Palakkad

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

- A. 1 and 2 only
- B. 1 only
- C. 2 and 3 only
- D. 3 only

**2. With the reference to the karewas, consider the following statements:-**

- 1. Karewas are the thick deposits of glacial clay only.
- 2. Karewas is located in the valley of Kashmir.
- 3. Karewas formations are useful for the cultivation of Zafran.

**Which of the statements given above is/are correct?**

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**3. Which of the following is/are important hill stations found in Dhauladhar range of Himalayas:**

- 1. Dharamshala
- 2. Mussoorie
- 3. Shimla

- 4. Kaosani
- 5. Chintpurni

**Select the correct answer using the code given below:**

- A. 1, 2 and 5 only
- B. 2 and 4 only
- C. 1, 3 and 5 only
- D. 1, 2, 3, 4 and 5

**4. Consider the following pairs in the context of the Northern plains in India:**

Type	Feature
1. Bhabar	Sand bars, meanders, ox-bow lakes
2. Tarai	Marshy and swampy conditions
3. Khadar	Deposits of heavy materials like rocks and boulders

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

- A. 1 only
- B. 2 only
- C. 3 only
- D. 1 and 2 only

**5. With reference to the Islands of India, consider the following pairs:**

Island	Location
1. Kiltan Island	Lakshadweep
2. Ghor Amara Island	Karnataka coast
3. Baratang Island	Odisha coast

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

- A. 1 and 2 only
- B. 3 only
- C. 1 only
- D. 2 and 3 only

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube

1. Consider the following pairs:

Mountain Pass	Location
1. Thal Ghat	Mumbai and Pune
2. Bhore Ghat	Mumbai and Nasik
3. Pal Ghat	Coimbatore and Palakkad

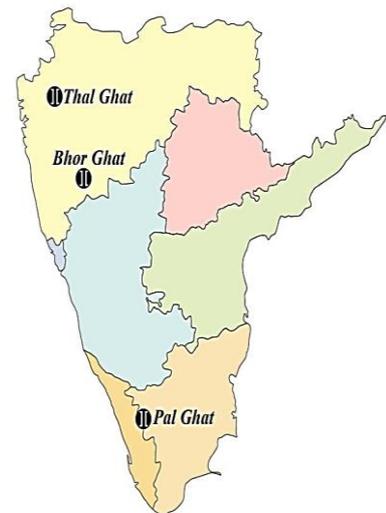
Which of the pairs given above is/are correctly matched?

- 1 and 2 only
- 1 only
- 2 and 3 only
- 3 only

**Answer : D**

**Explanation**

- **Pair 1 is incorrectly matched**– Thal Ghat (also called as Thul Ghat or Kasara Ghat) is a ghat section (mountain incline or slope) in the Western Ghats near the town of Kasara in Maharashtra. The Thal Ghat is located on the busy **Mumbai-Nashik route**.
- **Pair 2 is incorrectly matched** – It connects **Mumbai to Pune** via Khopoli. Bhore ghat is a mountain pass which is located near Khandala, Maharashtra which is the famous hill station of Sahyadri range.
- **Pair 3 is correctly matched** – **Palghat gap (Palakkad Gap)** mountain pass is located between Nilgiri Hills in the north and Anaimalai Hills towards the south and **connects Coimbatore in Tamil Nadu with Palakkad in Kerala**.



*Major Passes in India*

2. With the reference to the karewas, consider the following statements:-

1. Karewas are the thick deposits of glacial clay only.
2. Karewas is located in the valley of Kashmir.
3. Karewas formations are useful for the cultivation of Zafran.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

**Answer : B**

**Explanation**

- **Statement 1 is incorrect:** Karewas are the thick deposits of glacial clay and other materials embedded with moraines. These are unconsolidated lacustrine deposits. Lacustrine means “associated with lakes”.
- **Statement 2 is correct:** Karewas are lacustrine deposits in the Valley of Kashmir and in Bhaderwah Valley of the Jammu Division.

- The beautiful Kashmir valley resides between the Great Himalayas and the Pir Panjal ranges of the Kashmir Himalayas. In earlier times, when the upliftment of the Pir Panjal ranges happened, the flow of the river had stopped. As a result, the whole of Kashmir valley became a large lake. Slowly, the glacial deposits have accumulated here in this lake. Thus creating a large lacustrine plain. Later on, the water drained away and these unconsolidated deposits remained there. These unconsolidated gravel and mud deposits are known as Karewa formation.
- **Statement 2 is correct:** Karewa deposits have different soil and sediments such as sand, clay, silt, shale, mud, lignite and losses. It is very useful for agricultural and horticulture activities. Karewas formations are useful for the cultivation of Zafran is a local variety of Saffron in Kashmir valley and important for the cultivation of almond, walnut, apple, and orchards.

**3. Which of the following is/are important hill stations found in Dhauladhar range of Himalayas:**

1. Dharamshala
2. Mussoorie
3. Shimla
4. Kaosani
5. Chintpurni

Select the correct answer using the code given below:

- A. 1, 2 and 5 only
- B. 2 and 4 only
- C. 1, 3 and 5 only
- D. 1, 2, 3, 4 and 5

**Answer : C**

**Explanation**

- The Himalayas consists of The Great Himalayan range, the Lesser Himalayas (which is locally known as Dhauladhar in Himachal Pradesh and Nagtibha in Uttarakhand) and the Shiwalik range.
- In the section of Lesser Himalayas, **the altitude between 1,000-2,000 m** specially attracted to the British colonial administration, and subsequently, some of the important hill stations such as Dharamshala, Mussoorie, Shimla, Kaosani and the cantonment towns and health resorts such as Shimla, Mussoorie, Kasauli, Almora, Lansdowne and Ranikhet, etc. were developed in this region.
- Dhauladhar range includes hill stations of Dharamshala, Chintpurni and Shimla.



4. Consider the following pairs in the context of the Northern plains in India:

Type	Feature
1. Bhabar	Sand bars, meanders, ox-bow lakes
2. Tarai	Marshy and swampy conditions
3. Khadar	Deposits of heavy materials like rocks and boulders

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

- A. 1 only
- B. 2 only
- C. 3 only
- D. 1 and 2 only

**Answer : B**

**Explanation**

- Pair 1 is incorrectly matched. The alluvial plains of the northern India have a Bhabar region which is a narrow belt parallel to Shiwalik foothills at the break-up of the slope. This results in, deposition of heavy materials like rocks and boulders by the streams and rivers coming from the mountains. At times, the streams disappear in this zone.
- Pair 2 is correctly matched. South of the Bhabar is Tarai belt, where most of the streams and rivers reemerge without having any properly demarcated channel. This creates marshy and swampy conditions in this region. Therefore, Tarai belt has a luxurious growth of natural vegetation and houses a varied wild life.
- Pair 3 is incorrectly matched. Khadar is a new alluvial deposit region south of the Tarai and then the Bhangar (old alluvial deposits) region. Khadar and

Bhangar have characteristic features of mature stage of fluvial erosional and depositional landforms such as sand bars, meanders, ox-bow lakes and braided channels.

5. With reference to the Islands of India, consider the following pairs:

Island	Location
1. Kiltan Island	Lakshadweep
2. Ghoramara Island	Karnataka coast
3. Baratang Island	Odisha coast

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

- A. 1 and 2 only
- B. 3 only
- C. 1 only
- D. 2 and 3

**Answer : C**

**Explanation**

- **Pair 1 is correctly matched:** Kiltan Island is a coral island belonging to the Amindivi Subgroup of islands of Lakshadweep.
- **Pair 2 is incorrectly matched:** Ghoramara Island is in the Sundarban Delta of the Bay of Bengal. The island is small, roughly five square kilometers in area, and is quickly disappearing due to erosion and sea level rise.
- **Pair 3 is incorrectly matched:** Baratang Island is a part of the Andaman and Nicobar Island off the coast. It is located between South and Middle Andaman.

## Questions for Today

### Objective Of the Session

- 1) Solve The Question
- 2) Learning New Concepts

### Conceptual Question - Relevant for Mains As Well

1. Which of the following may be effective methods of Watershed Management ?
  1. Contour bunding
  2. Check dams
  3. Bench terracing

A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

### Current Affairs

#### Geopolitics And River System

2. Consider the following rivers:

1. Barak
2. Lohit
3. Subansiri

Which of the above rivers flows/flow through Arunachal Pradesh?

- A. 1 only  
B. 2 and 3 only  
C. 1 and 3 only  
D. 1, 2 and 3

### From Our Test Series- Fact Based Question

3. This river rises west of the Rohtang pass in the Kullu hills of Himachal Pradesh and flows through the Chamba valley of the state. It drains the area lying between the South Eastern part of the Pir Panjal and the Dhauladhar ranges.

This the best description of which of the following rivers:

- A. Chenab River  
B. Beas River  
C. Ravi River  
D. Sutlej River

### Learning Based Question

4. Which one of the following is the place of confluence of the Alaknanda and the Bhagirathi rivers?

- A. Vishnu Prayag  
B. Karan Prayag  
C. Rudra Prayag  
D. Deva Prayag

5. The Narmada river flows to the west, while most other large peninsular rivers flow to the east. Why?

1. It occupies a linear rift valley.
2. It flows between the Vindhya 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 of the above.

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube

### CONCEPTUAL QUESTION - RELEVANT FOR MAINS AS WELL

1. Which of the following may be effective methods of Watershed Management ?

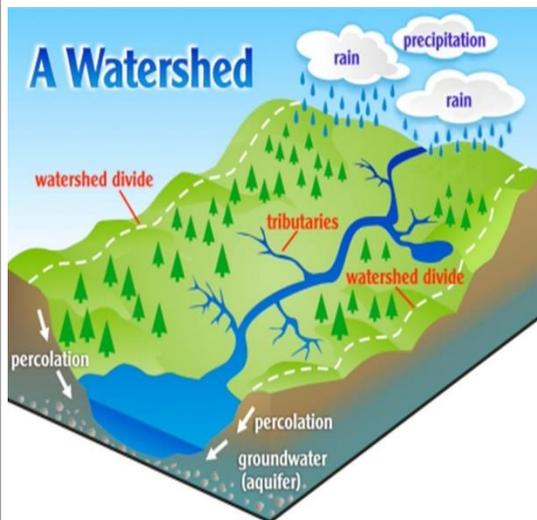
1. Contour bunding
  2. Check dams
  3. Bench terracing
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

**Answer : D**

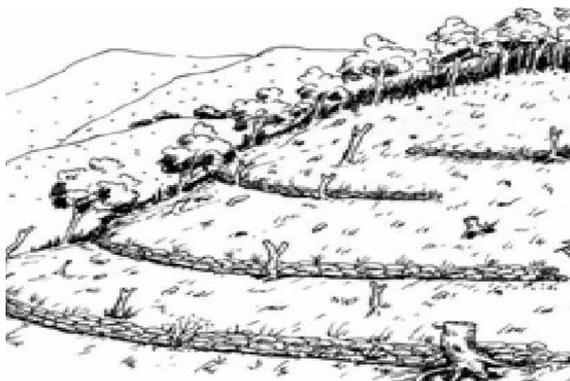
#### **Explanation**

All the statements are correct.

#### Basics



#### Contour Bunding



#### Check Dam



#### Bench Terracing



### CURRENT AFFAIRS

#### GEOPOLITICS AND RIVER SYSTEM

2. Consider the following rivers:

1. Barak
2. Lohit
3. Subansiri

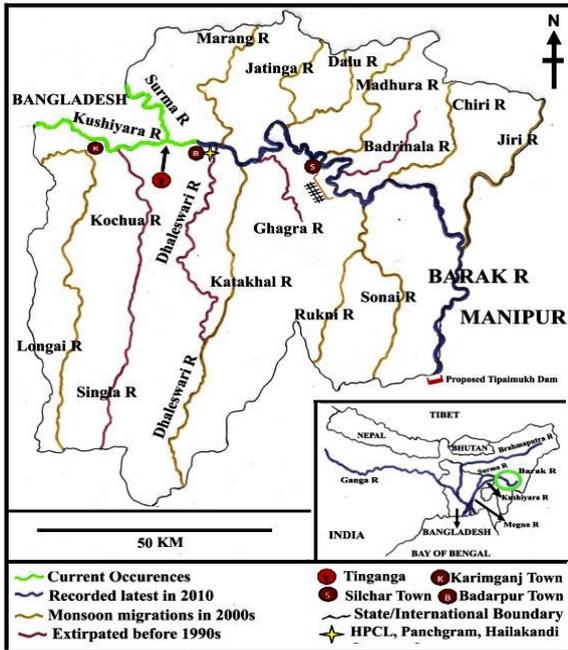
Which of the above rivers flows/flow through Arunachal Pradesh?

- A. 1 only  
B. 2 and 3 only  
C. 1 and 3 only  
D. 1, 2 and 3

### CURRENT AFFAIRS

#### GEOPOLITICS AND RIVER SYSTEM

- India and Bangladesh have finalized the text of the Memorandum of Understanding (MoU) on interim water sharing of the Kushiyara river.
- India and Bangladesh have finalised the text of the Memorandum of Understanding (MoU) on interim water sharing of the Kushiyara river.
- How Current News would have helped to Solve PYQ :



Answer : B

Explanation

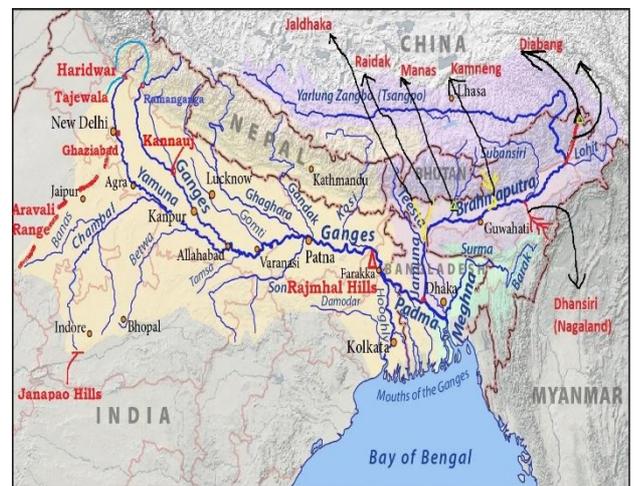
Option b is correct.

Option 1 is incorrect.

- Barak originates in Manipur, flows through Mizoram and Assam and drains into Bangladesh.

Option 2 and 3 are correct.

- Lohit and Subansiri are a tributaries of the Brahmaputra River. They originate in Tibet and flow through Arunachal Pradesh, before joining



Brahmaputra in Assam.

**FROM OUR TEST SERIES- FACT BASED QUESTION**

3. This river rises west of the Rohtang pass in the Kullu hills of Himachal Pradesh and flows through the Chamba valley of the state. It drains the area lying between the South Eastern part of the Pir Panjal and the Dhauladhar ranges.

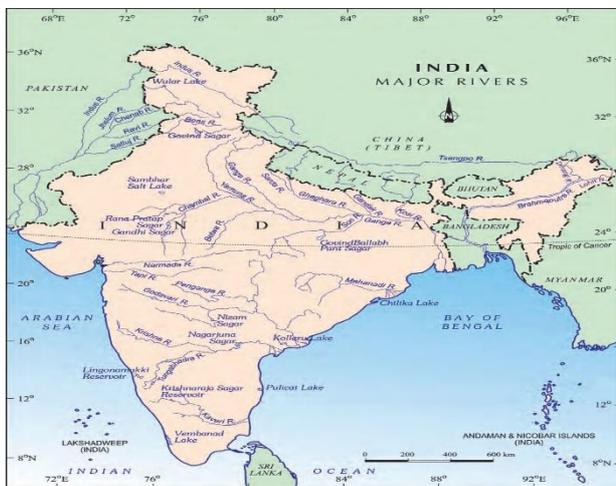
This the best description of which of the following rivers:

- A. Chenab River
- B. Beas River
- C. Ravi River
- D. Sutlej River

Answer : C

Explanation

- The Panjnad is the name given to the five rivers of Punjab, namely the Satluj, the Beas, the Ravi, the Chenab and the Jhelum.
- The Ravi is important tributary of the Indus. It rises west of the Rohtang pass in the Kullu hills of Himachal Pradesh and flows through the Chamba valley of the state. Before entering Pakistan and joining the Chenab near Sarai Sidhu, it drains the area lying between the South Eastern part of the Pir Panjal and the Dhauladhar ranges.



**FACT BASED QUESTION**

4. Which one of the following is the place of confluence of the Alaknanda and the Bhagirathi rivers?

- A. Vishnu Prayag
- B. Karan Prayag
- C. Rudra Prayag
- D. Deva Prayag

**Answer : D**

**Explanation**

At Devprayag, the Bhagirathi meets the Alaknanda; hereafter, it is known as the Ganga. The Alaknanda has its source in the Satopanth glacier above Badrinath. The Alaknanda consists of the Dhauli and the Vishnu Ganga which meet at Joshimath or Vishnu Prayag. The other tributaries of Alaknanda such as the Pindar joins it at

Karna Prayag while Mandakini or Kali Ganga meets it at Rudra Prayag. The Ganga enters the plains at Haridwar.

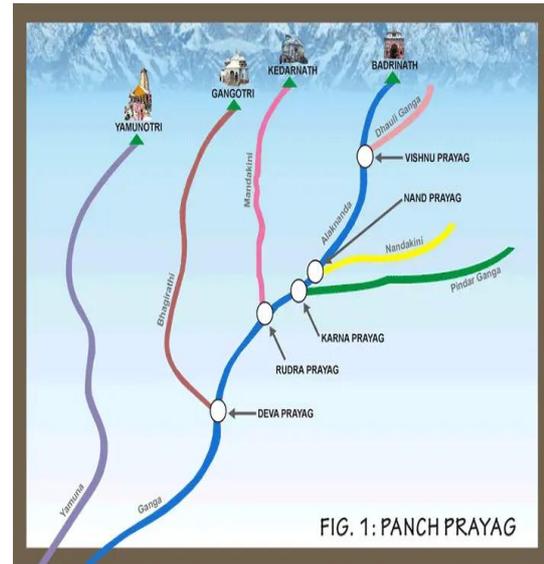


FIG. 1: PANCH PRAYAG

**LEARNING BASED QUESTION**

Q5. The Narmada river flows to the west, while most other large peninsular rivers flow to the east. Why?

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 of the above.

**Answer : A**

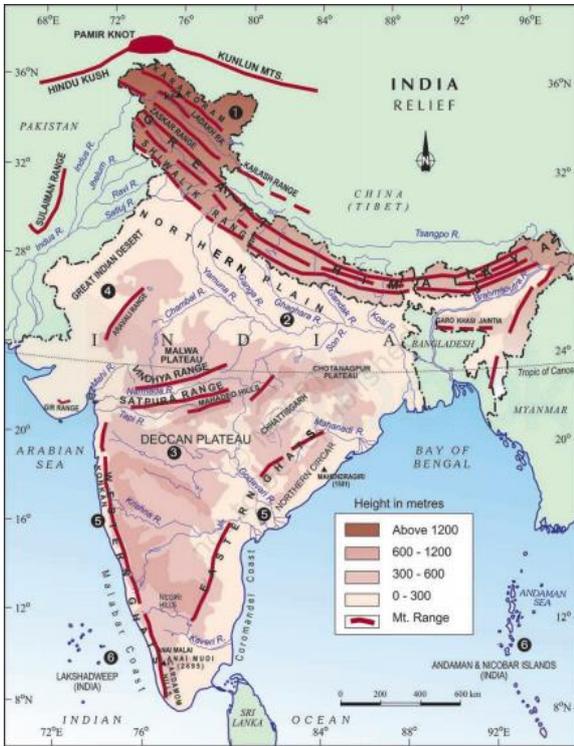
**Explanation**

**Statement 1 is correct.**

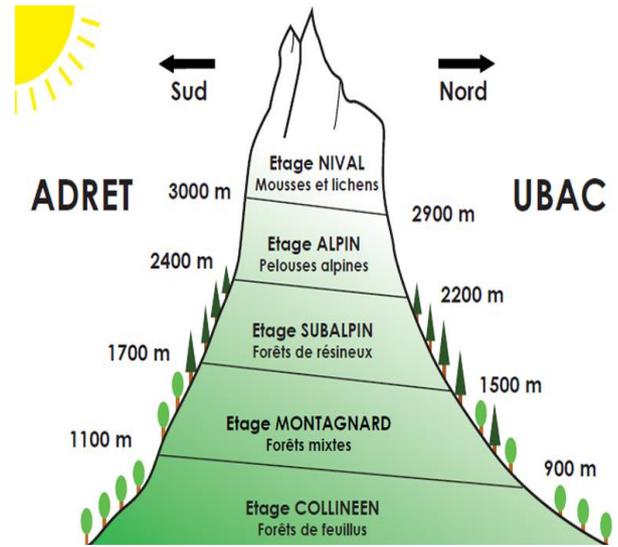
- The Narmada and the Tapi flow through the rift valley. The Narmada and The Tapti flow in trough faults. They along with many small rivers discharge their waters in the Arabian Sea.

**Statement 2 is incorrect.**

- Narmada flows between Vindhyas in north and the Satpuras in south but this is not the reason for flowing towards West.

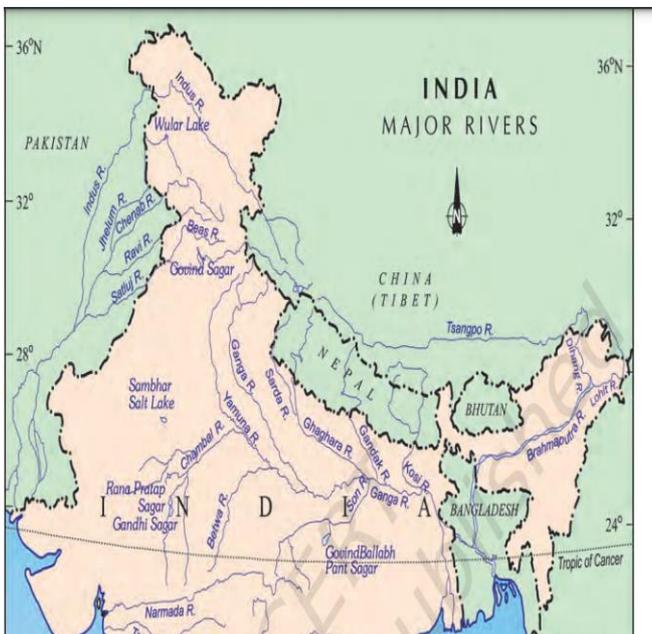


because of their exposure to **the direct ray's sun for longer duration**



**Statement 3 is incorrect.**

- The Peninsular plateau consists of two broad divisions, namely, the Central Highlands and the Deccan Plateau. The part of the peninsular plateau lying to the north of the Narmada river, covering a major area of the Malwa plateau, is known as the Central Highlands. The flow of the rivers draining this region, namely the Chambal, the Sind, the Betwa and the Ken is from southwest to northeast, thus indicating the slope. Thus, the slope is towards northeast.



**ADDITIONAL INFO : ADRET /UBAC SLOPE**

**Example**

In the **Northern hemisphere**, the **south facing slopes** of **east west stretching mountain** receive **greater amount of insolation** than the north facing slopes

## Questions for Today

### Objective Of the Session

- 1) Solve The Question
- 2) Learning New Concepts

### Learning Based Question

1. 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

- (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

### FACT BASED QUESTION + LEARNING

2. Consider the following pairs:

Indian Rivers	Origin
<b>1. Narmada</b>	Amarkantak Plateau
<b>2. Indus</b>	Bokarchu glacier
<b>3. Kosi</b>	Kailash range
<b>4. Kaveri</b>	Palni Hills

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

- A. 1 and 2 only
- B. 1 and 4 only
- C. 2 and 3 only
- D. 3 and 4 only

3. Two important rivers - one with its source in Jharkhand (and known by a different name in Odisha), and another, with its source in Odisha - merge at a place only a short distance from the coast of Bay of Bengal before flowing into the sea. This is an important site of wildlife and biodiversity and a protected area. Which one of the following could be this?

- a) Simlipal
- b) Bhitarkanika
- c) Chandipur-on-sea
- d) Gopalpur-on-sea

### FACT BASED QUESTION

4. Consider the following rivers:

1. Vamsadhara
2. Indravati
3. Pranhita
4. Pennar

Which of the above are tributaries of Godavari?

- A. 1, 2 and 3 only
- B. 2, 3 and 4 only
- C. 1, 2 and 4 only
- D. 2 and 3 only

### FACT & LEARNING BASED QUESTION

5. Consider the following rivers :

- 1) Indus
- 2) Satluj
- 3) Alaknanda
- 4) Gandak
- 5) Kosi
- 6) Brahmaputra

Which of the following are antecedent rivers ?

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

## Answers With Explanations

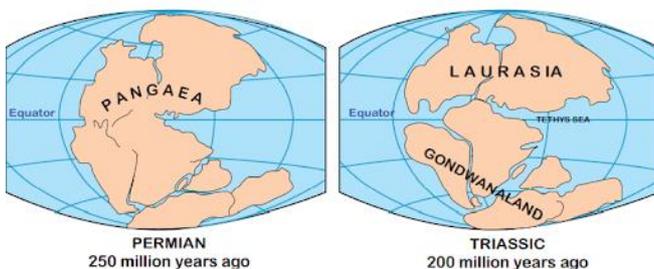
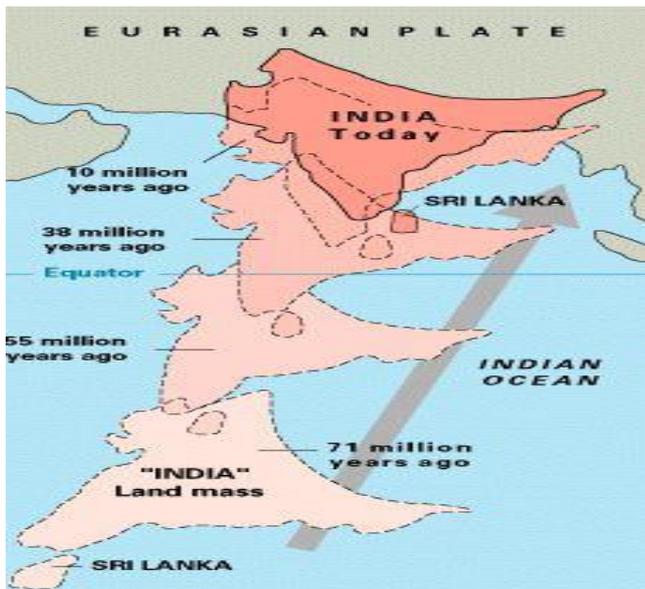
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### LEARNING BASED QUESTION

1. 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

- (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

**Ans : b**



- Due to this motion of Indian plate towards Australian Plate, when Indian plate collides with Eurasian plate compression started at those two

points first where the horns touched the Eurasian plate.

- These two points are now known as, Nanga Parbat and Namcha Barwa.
- Therefore it is due to the structure of the Indian Plate, having horn on two northern extremities is the cause behind the syntaxial bends at Himalayan extremities.
- Before Indian plate hit the Himalayan Rivers were flowing over Eurasian Plate . But after the hit Indus river turns around Nanga Parbat and Brahmaputra turns around Namcha Barwa.

### Note :

- The Himalayan Rivers existed even before the formation of Himalayas i.e. before the collision of Indian Plate with the Eurasian plate. {Antecedent Drainage}- A part of a river slope and the surrounding area gets uplifted and the river sticks to its original slope, cutting through the uplifted portion like a saw forming deep gorges
- They were flowing into the Tethys Sea. These rivers had their source in the now Tibetan region.

### FACT BASED QUESTION + LEARNING

2. Consider the following pairs:

Indian Rivers	Origin
1. Narmada	Amarkantak Plateau
2. Indus	Bokarchu glacier
3. Kosi	Kailash range
4. Kaveri	Palni Hills





## Explanation

- **Option 2 and 3 are correct :** The river Godavari is the largest of the peninsular rivers. Pranhita is the largest tributary of Godavari.

### Left Bank Tributaries of Godavari

- Banganga, Kadva, Shivana, Purna, Kadam, Pranhita, Indravati, Taliperu, Sabari, Dharna

### Right Bank Tributaries:

- Nasardi, Pravara, Sindphana, Manjira, Manair, Kinnerasani

## FACT & LEARNING BASED QUESTION

### 5. Consider the following rivers :

- 1) Indus
- 2) Satluj
- 3) Alaknanda
- 4) Gandak
- 5) Kosi
- 6) Brahmaputra

Which of the following are antecedent rivers?

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

**Answer : D**

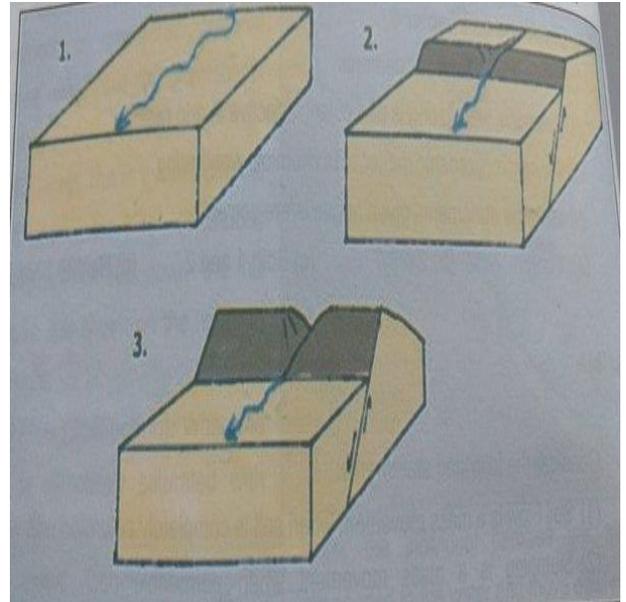
## Explanation

### Antecedent Drainage

- 1) The drainage pattern was already present before a period of uplift and folding that formed the present structure. As the uplift took place, the rivers were able to cut down at approximately the same rate and so maintain their courses.

- 2) The Indus, Satluj, Alaknanda, Gandak, Kosi, Brahmaputra all have an antecedent origin.

**They run transverse to the mountain ranges cutting deep V-shaped, steep-sided valleys**



## Questions for Today

### Objective Of The Session

- 1) Solve The Question
- 2) Learning New Concepts

### Conceptual Question

#### 1. Identify the incorrect statements:

1. Conventional El Nino is characterized by strong anomalous warming in the eastern Pacific Ocean .
2. El Nino Modoki is associated with strong anomalous warming in the central Pacific and cooling in the eastern and western Pacific Ocean.

Select the correct code.

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

### UPSC PREVIOUS YEAR QUESTION

#### 2. With reference to 'palm oil', consider the following statements:

1. The palm oil tree is native to Southeast Asia.
2. The palm oil is a raw material for some industries producing lipstick and perfumes.
3. The palm oil can be used to produce biodiesel.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

### UPSC PREVIOUS YEAR QUESTION

#### 3. Consider the following Rivers:

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

### MAP BASED QUESTION

#### 4. Mark the correct one:

1. Strait of Tartary: Caribbean Sea with the Gulf of Mexico
2. Dardanelles Strait: Black Sea to Sea of Marmara
3. Bosphorous Strait: Sea of Marmara to Aegean Sea
4. Kerch Strait: Black Sea and the Sea of Azov

- A. Only 1
- B. Only 2
- C. Only 3
- D. Only 4

### CONCEPT BASED QUESTION

5. With reference to the circumstances in Indian agriculture, the concept of "Conservation Agriculture" assumes significance. Which of the following fall under Conservation Agriculture?

1. Avoiding the monoculture practices
2. Adopting minimum tillage
3. Avoiding the cultivation of plantation crops

4. Using crop residues to cover the soil surface
5. Adopting spatial and temporal crop sequencing/crop rotations

Select the correct answer using the code given below:

- A. 1, 3 and 4
- B. 2, 3, 4 and 5
- C. 2, 4 and 5
- D. 1, 2, 3 and 5

## Answers With Explanations

Click [here](#) to watch the following topics on YouTube

### CONCEPTUAL QUESTION

1. Identify the incorrect statements :

1. Conventional El Nino is characterized by strong anomalous warming in the eastern Pacific Ocean .
2. El Nino Modoki is associated with strong anomalous warming in the central Pacific and cooling in the eastern and western Pacific Ocean.

Select the correct code.

- A. Only 1  
B. Only 2  
C. Both 1 and 2  
D. Neither 1 nor 2

Ans : d

### Explanation

- Conventional El Nino is characterized by strong anomalous warming in the eastern equatorial Pacific.
- Whereas, El Nino Modoki is associated with strong anomalous warming in the central tropical Pacific and cooling in the eastern and western tropical Pacific .
- Such zonal gradients result in anomalous two-cell Walker Circulation over the tropical Pacific, with a wet region in the central Pacific.

### UPSC PREVIOUS YEAR QUESTION

2. With reference to 'palm oil', consider the following statements:

1. The palm oil tree is native to Southeast Asia.
2. The palm oil is a raw material for some industries producing lipstick and perfumes.
3. The palm oil can be used to produce biodiesel.

Which of the statements given above are correct?

- A. 1 and 2 only  
B. 2 and 3 only  
C. 1 and 3 only  
D. 1, 2 and 3

- The apex edible oil industry associations from five major palm oil importing countries of Asia -- India, Pakistan, Sri Lanka, Bangladesh and Nepal -- have come together to form the Asian Palm Oil Alliance (APOA)

### UPSC PREVIOUS YEAR QUESTION

3. Consider the following Rivers:

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

Which of the above rise from the Eastern Ghats?

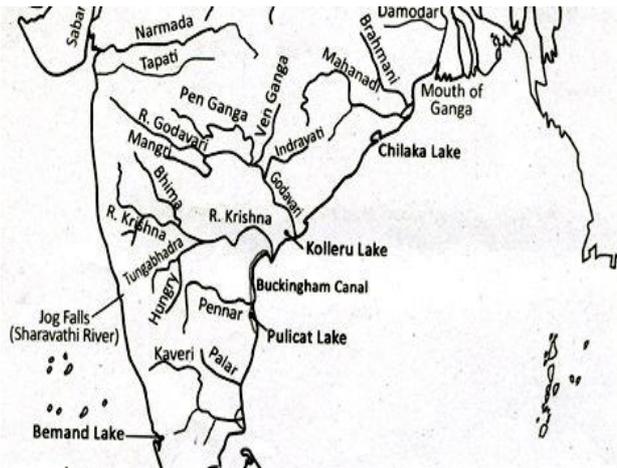
- (a) 1 and 2  
(b) 2 and 4  
(c) 3 and 4  
(d) 1 and 3

**Answer : D**

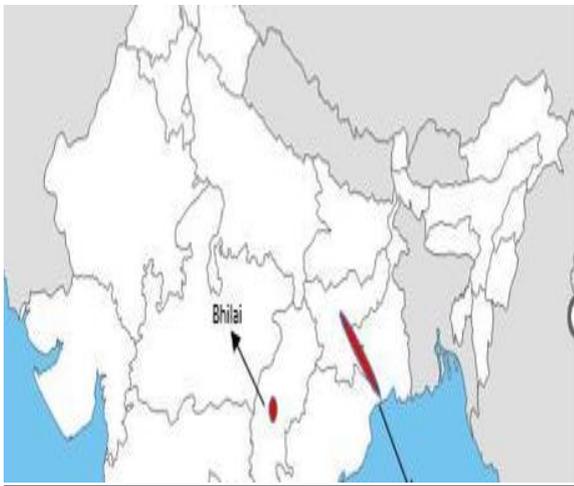
### Explanation



**Brahmani – Sankh and South Koel Rivers – Rourkela**



**Subarnarekha River- Ranchi Plateau – Jharkhand**



**Vamsadhara River -Kalahandi district of Odisha, flows in Odisha,**



**MAP BASED QUESTION**

4. Mark the correct one:

1. Strait of Tartary: Caribbean Sea with the Gulf of Mexico
  2. Dardanelles Strait: Black Sea to Sea of Marmara
  3. Bosphorous Strait: Sea of Marmara to Aegean Sea
  4. Kerch Strait: Black Sea and the Sea of Azov
- A. Only 1  
B. Only 2  
C. Only 3  
D. Only 4

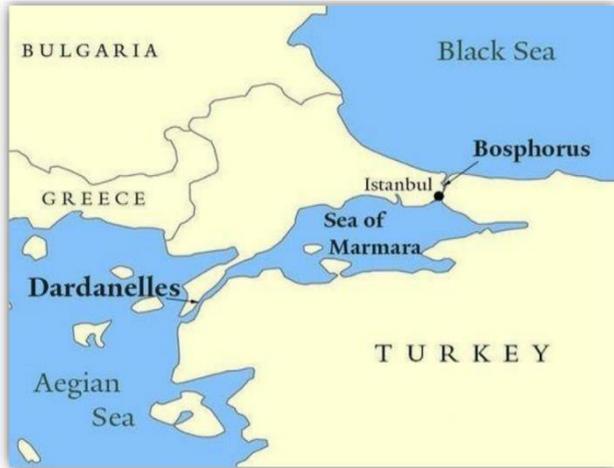
**Ans D**

**Explanation**

**Straits**

- 1) **Strait of Tartary:** Sea of Okhotsk from the Sea of Japan
- 2) **Kerch Strait:** Black Sea and the Sea of Azov
- 3) **Bosphorous Strait:** Black Sea to Sea of Marmara
- 4) **Dardanelles Strait:** Sea of Marmara to Aegean Sea
- 5) **Yucatan Strait:** Yucatán Basin of the Caribbean Sea with the Gulf of Mexico





Bosphorous Strait: Black Sea to Sea of Marmara



Kerch Strait: Black Sea and the Sea of Azov



Yucatan Strait: Yucatán Basin of the Caribbean Sea with the Gulf of Mexico

**CONCEPT BASED QUESTION**

5. With reference to the circumstances in Indian agriculture, the concept of “**Conservation Agriculture**” assumes significance. Which of the following fall under Conservation Agriculture?

- 1) Avoiding the monoculture practices
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- 3) Avoiding the cultivation of plantation crops
- 4) Using crop residues to cover the soil surface
- 5) Adopting spatial and temporal crop sequencing/crop rotations

Select the correct answer using the code given below:

- A. 1, 3 and 4
- B. 2, 3, 4 and 5
- C. **2, 4 and 5**
- D. 1, 2, 3 and 5

Ans - C

Explanation

Conservation Agriculture

- Conservation Agriculture is a farming system that **promotes minimum soil disturbance (i.e. no tillage), maintenance of a permanent soil cover, and diversification of plant species.**

Minimum mechanical soil disturbance

(i.e. no tillage) through direct seed and/or fertilizer placement.



Permanent soil organic cover

(at least 30 percent) with crop residues and/or cover crops.



Species diversification

through varied crop sequences and associations involving at least three different crops.



## Questions for Today

### Objective Of The Session

- 1) Solve The Question
- 2) Learning New Concepts

### Conceptual Question

1. Identify the **correct** statements :

1. MJO is an eastward moving pulse of cloud & rainfall in the tropics that recurs every 30 to 60 days.
2. The MJO can modulate the timing and strength of monsoons.

Select the correct code.

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

### Map Based Questions From Current Affairs

2. Gandikota canyon of South India was created by which one of the following rivers?

- A. Cauvery
- B. Manjira
- C. Pennar
- D. Tungabhadra

### UPSC PREVIOUS YEAR QUESTION

3. Choose the **correct statements in context with Salinity in Certain Marginal Seas:**

- 1) Baltic Sea records low salinity due to influx of river waters in large quantity.
- 2) The Mediterranean Sea records higher salinity due to high evaporation.
- 3) The North Sea, records higher salinity due to more saline water brought by the North Atlantic Drift.

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

### MAP BASED QUESTION

4. Which of the following is marked **incorrectly**?

- 1) Lake Baikal - Russia
  - 2) Lake Victoria- Africa
  - 3) Lake Ladoga - North America
  - 4) Lake Titicaca - South America
- A. Only 1
  - B. Only 2
  - C. Only 3
  - D. Only

### CONCEPT BASED QUESTION - UPSC PYQ

5. 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

## Answers With Explanations

Click [here](#) to watch the following topics on YouTube

### CONCEPTUAL QUESTION

1. Identify the correct statements :

1. MJO is an eastward moving pulse of cloud & rainfall in the tropics that recurs every 30 to 60 days.
2. The MJO can modulate the timing and strength of monsoons.

Select the correct code:

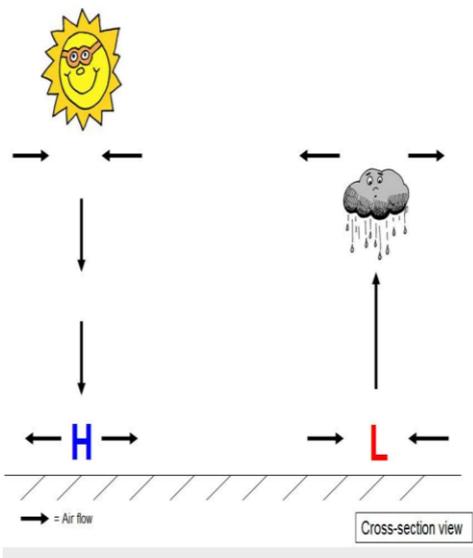
- Only 1
- Only 2
- Both 1 and 2
- Neither 1 nor 2

Answer : C

Explanation

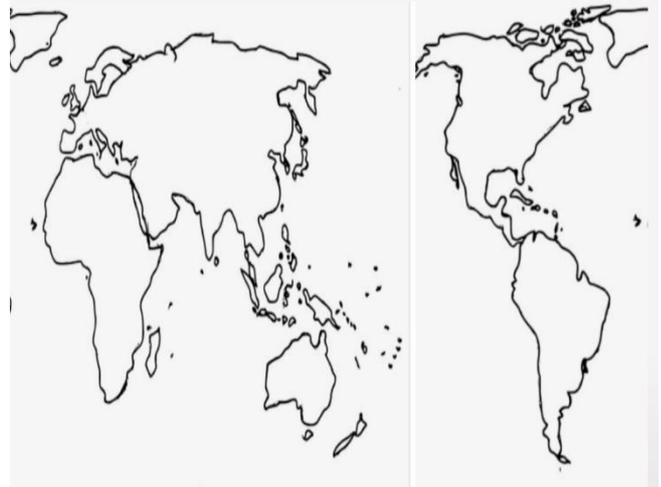
- MJO is an eastward moving pulse of cloud & rainfall in the tropics that recurs every 30 to 60 days.
- The MJO consists of enhanced rainfall convective phase and suppressed rainfall convective phase.
- The MJO can modulate the timing and strength of monsoons.

### 1) BASICS

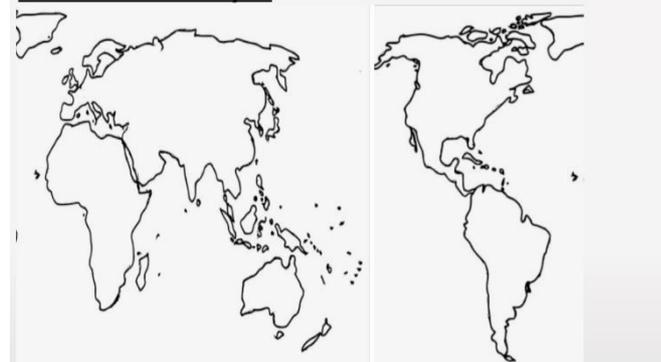


Let us make the cycle - Cell Generation + Tropical + Moves Eastwards

### EL - Nino /La - Nina - Year ?



MJO - 30 - 60 day Cycle - Starts from I/O and Fizzles out in P/O



### Map Based Questions from Current Affairs

2. Gandikota canyon of South India was created by which one of the following rivers?

- Cauvery
- Manjira
- Pennar
- Tungabhadra

Answer : C

Explanation

NEWS / CITY NEWS / VIDYAWADA NEWS / Andhra Pradesh Govt Plans To Renew Efforts To Get U...

THIS STORY IS FROM AUGUST 13, 2021

**Andhra Pradesh govt plans to renew efforts to get Unesco tag for Gandikota**



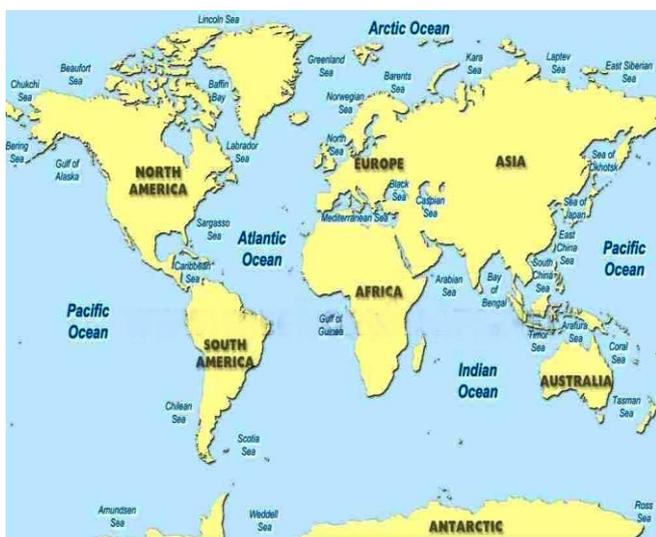
**UPSC PREVIOUS YEAR QUESTION**

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  - 2) The Mediterranean Sea records higher salinity due to high evaporation.
  - 3) The North Sea, records higher salinity due to more saline water brought by the North Atlantic Drift.
- a) 1 and 2 only
  - b) 2 and 3 only
  - c) 1 and 3 only
  - d) 1,2 and 3

**Answer : D**

**Explanation**



**MAP BASED QUESTION**

4. Which of the following is marked incorrectly?

- 1) Lake Baikal - Russia
- 2) Lake Victoria- Africa
- 3) Lake Ladoga - North America
- 4) Lake Titicaca - South America

- A. Only 1
- B. Only 2
- C. Only 3
- D. Only

**Answer : C**

**Explanation**



**Concept Based Question - UPSC PYQ**

5. Which of the following phenomena might have influenced the evolution of organisms?

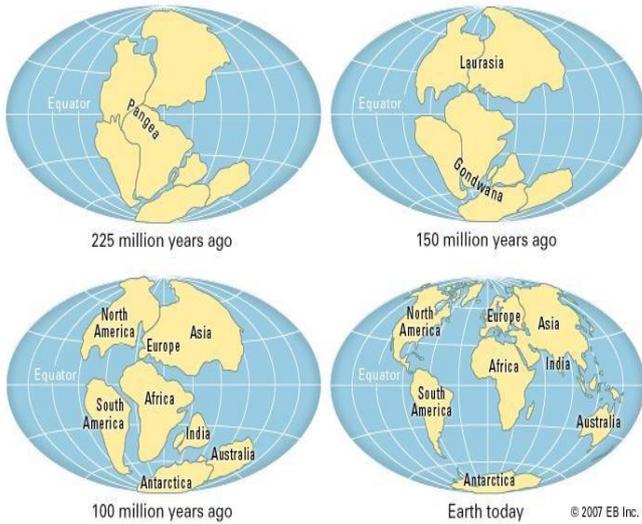
- 1) Continental drift
- 2) Glacial cycles

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

**Answer : C**

**Explanation**



## Continental Drift Theory

### Glacial Cycle

- 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**.

## Questions for Today

### Objective Of the Session

- 1) Solve The Question
- 2) Learning New Concepts

### Conceptual Question

1. Identify the **correct** statements:

- 1) Southern Oscillation is a coherent inter-annual fluctuation of atmospheric pressure over the tropical Indo-Pacific region.
  - 2) The changes in pressure conditions are connected to the El Nino and the phenomenon is referred to as ENSO.
- a) Only 1
  - b) Only 2
  - c) Both 1 and 2
  - d) Neither 1 nor 2

### Map Based Questions From Current Affairs

2. Which one of the lakes of West Africa has become dry and turned into a desert?

- a) Lake Victoria
- b) Lake Faguibine
- c) Lake Oguta
- d) Lake Volta

### UPSC Previous Year Question - MAINS

3. **The World's Major Deserts Located On 20 to 30 Degrees North Latitude. Identify the incorrect reason for the same:**

- 1) These deserts lie along Sub-Tropical High-Pressure Belts which is least favorable for precipitation of any kind to take place.
- 2) Whatever winds reach these deserts blow from cooler regions and leading to lower relative humidity, making condensation impossible.

- 3) The rain-bearing Trade Winds blow on-shore towards these deserts.
  - 4) On the western coasts, the presence of cold currents gives rise to these Deserts.
- a) 1,2 and 3 only
  - b) 2,3 and 4 only
  - c) 1,3 and 4 only
  - d) 1,2 and 4 only

### BASIC QUESTION

4. Which of the following is **not a minor tectonic plate**?

- a) Nazca plate
- b) Arabian plate
- c) Antarctic oceanic plate
- d) Philippine plate

### NCERT BASED QUESTION

5. What do you understand by the term '**Transhumance**'?

- a) Burning the forests to grow crop in the next season
- b) Migration from plain areas to pastures on mountains and vice versa
- c) Process of evolution of humans from apes
- d) A type of farming where humans plough the field without using cattle

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube

### CONCEPTUAL QUESTION

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  - 2) The changes in pressure conditions are connected to the El Nino and the phenomenon is referred to as ENSO.
- a) Only 1
  - b) Only 2
  - c) **Both 1 and 2**
  - d) Neither 1 nor 2

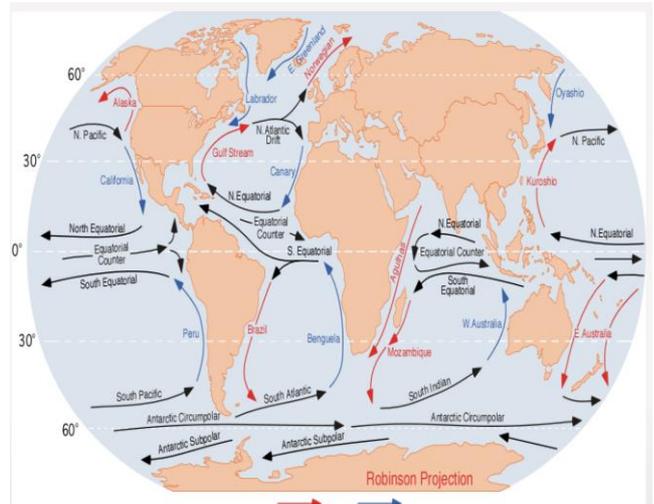
**Answer : C**

### Explanation

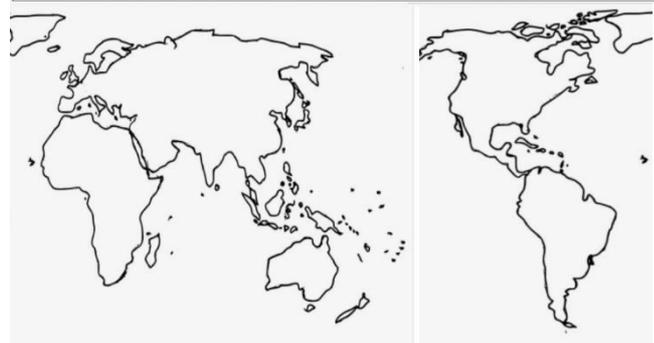
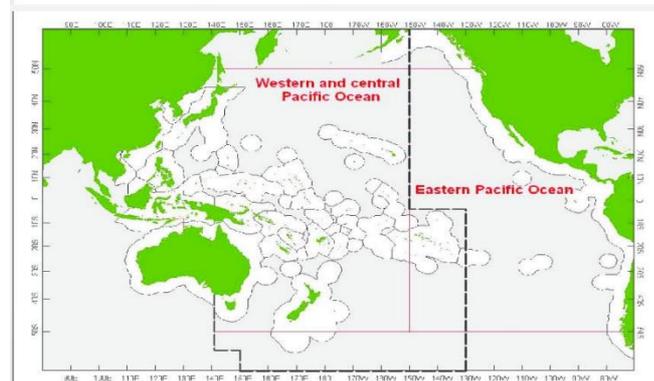
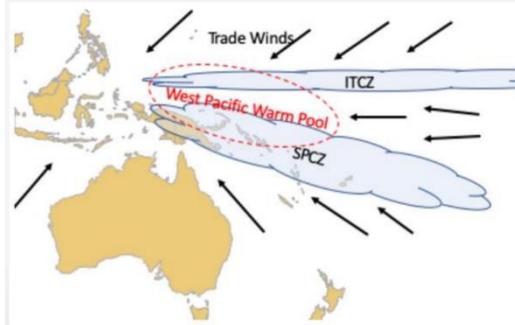
#### NCERT - ENSO

- Normally tropical eastern south Pacific Ocean experiences high pressure, the tropical eastern Indian Ocean experiences low pressure.
- But in certain years, there is a reversal in the pressure conditions and the eastern Pacific has lower pressure in comparison to the eastern Indian Ocean.
- This periodic change in pressure conditions is known as the Southern Oscillation or SO.
- A feature connected with the SO is the El Nino phenomenon in which a warm ocean current that flows past the Peruvian Coast, in place of the cold Peruvian current, every 2 to 5 years. The changes in pressure conditions are connected to the El Nino.

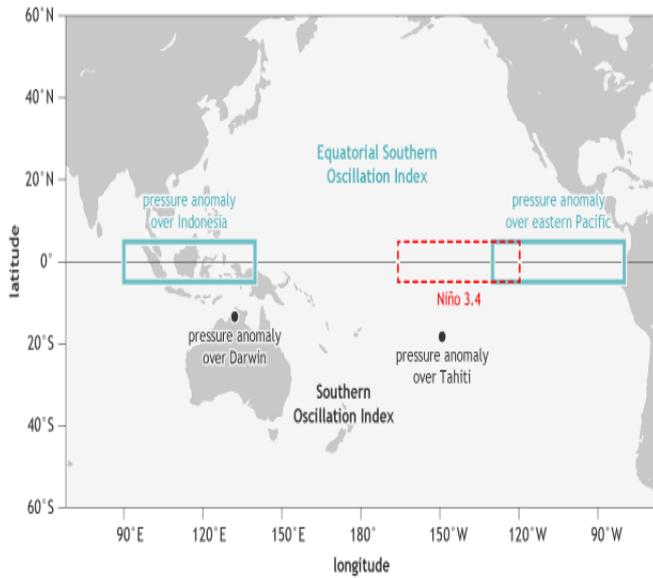
- Hence, the phenomenon is referred to as ENSO (El Nino Southern Oscillations).



### Western Pacific Warm Pool



ENSO indexes



### Map Based Questions From Current Affairs

2. Which one of the lakes of West Africa has become dry and turned into a desert?

- a) Lake Victoria
- b) **Lake Faguibine**
- c) Lake Oguta
- d) Lake Volta

**Answer: B**

### Explanation



2 minute read · November 4, 2021 10:53 PM GMT+5:30 · Last Updated a year ago

## Malian villagers battle advancing sands after lake dries

Reuters

- Lake Faguibine in northern Mali is dry and has been since the 1970s.
- The Lake Faguibine System, four interlinked lakes 80 km west of Timbuktu, was historically one of Mali's most fertile areas. But over seven years, droughts in the 1970s dried up the lakes.
- Then sand filled the channels connecting the lakes to the River Niger, with the result that when rain finally returned the water could no longer reach the lakes. The region's prosperity evaporated along with the water.
- In the past, during prolonged rainfall in the Fouta Djallon highlands in Guinea, the river flooded and forced water to flow through two channels into the lake.
- Unfortunately, climate change has led to erratic rainfall patterns as well as the advance southward of the Sahara desert. Sand dunes block parts of the channels, thereby preventing the replenishment of the lake. Upstream, people use the water for large-scale irrigation and to produce hydropower. All these factors combine to deprive Lake Faguibine of much needed water.
- With only 3.8 percent of Mali having arable land, one can understand the benefits that a restored lake could bring.
- **UNEP project:** At the request of the Government of Mali, UNEP in 2008 began implementing a project to rehabilitate the Lake Faguibine ecosystem.
- It followed UNEP's successful ecosystem rehabilitation of the Iraqi Marshlands, the world's largest wetland ecosystems.
- The Lake Faguibine ecosystem restoration project involved sensitizing communities upstream

and downstream on the need to regulate and preserve the water flow in the Niger and its channels. It aimed to re-flood the lake's 600 square kilometres in order to restore its vital ecosystems (fish catches were once estimated at 5,000 tons annually), boosting the livelihoods of local fishermen, reviving agriculture along the lakeside, and providing food to thousands of people as well as migratory waterbirds.

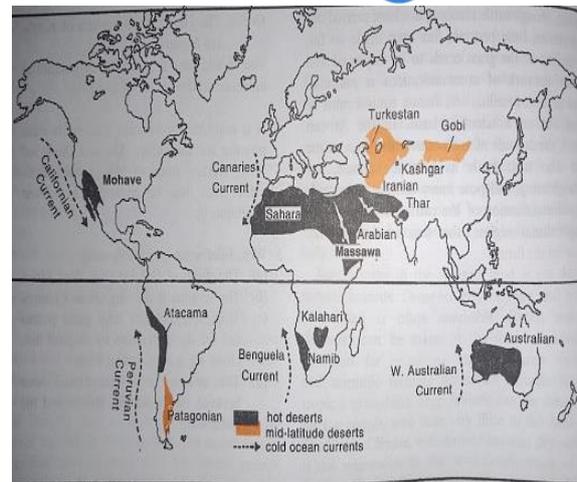
**UPSC Previous Year Question - MAINS**

**3. The World's Major Deserts Located On 20 to 30 Degrees North Latitude. Identify the incorrect reason for the same:**

- 1) These deserts lie along Sub-Tropical High Pressure Belts which is least favorable for precipitation of any kind to take place.
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  - 3) The rain-bearing Trade Winds blow on-shore towards these deserts.
  - 4) On the western coasts, the presence of cold currents gives rise to these Deserts.
- a) 1,2 and 3 only  
b) 2,3 and 4 only  
c) 1,3 and 4 only  
d) 1, 2 and 4 only

**Answer : D**

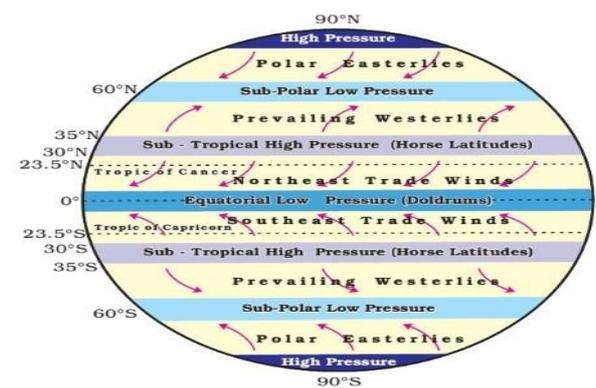
**Explanation**



**The Hot Desert and Mid - Latitude Desert Climate**

**Hot Deserts - Sub Tropical High Pressure Belt**

**Hot Deserts - Sub Tropical High Pressure Belt**



Major Pressure Belts and Wind System

**Hot Deserts - Cold Currents**

**Hot Deserts - Off Shore Trade Winds**

**Hot Deserts - What ever wind reaches the desert blow Cooler to Warmer Regions - Relative humidity low - Making Condensation impossible - Drought Prone Conditions**

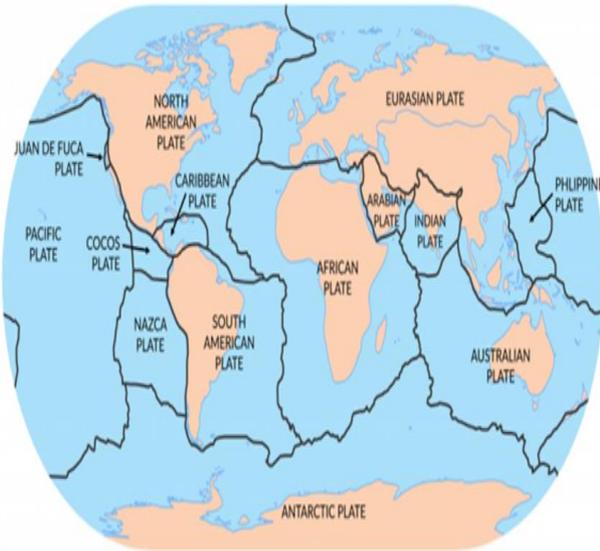
**BASIC QUESTION**

4. Which of the following is **not a minor tectonic plate**?

- a) Nazca plate
- b) Arabian plate
- c) **Antarctic oceanic plate**
- d) Philippine plate

**Answer: C**

### Explanation



- In mountain regions, such as Himalayas, Gujjars, Bakarwals, Gaddis and Bhotiyas migrate from plains to the mountains in summers and to the plains from the high-altitude pastures in winters.
- Similarly, in the tundra regions, the nomadic herders move from south to north in summers and from north to south in winters.

### NCERT BASED QUESTION

5. What do you understand by the term 'Transhumance'?

- a) Burning the forests to grow crop in the next season
- b) **Migration from plain areas to pastures on mountains and vice versa**
- c) Process of evolution of humans from apes
- d) A type of farming where humans plough the field without using cattle

**Answer : B**

### Explanation

- Movement in search of pastures is undertaken either over vast horizontal distances or vertically from one elevation to another in the mountainous regions.
- The process of migration from plain areas to pastures on mountains during summers and again from mountain pastures to plain areas during winters is known as transhumance.

## Questions for Today

### Objective Of The Session

- 1) Solve The Question
- 2) Learning New Concepts

### Conceptual Question - From Our Test Series

1. With reference to Vertical farming, consider the following statements:

- 1) Vertical farming is a system of indoor farming and it uses artificial light and temperature.
- 2) It uses more water and pesticides than traditional agricultural methods.
- 3) Vertical farming can reduce carbon consumption.

Which of the statements given above is/are correct?

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

### UPSC Previous Year Question- Again In News

2. In which one of the following States is Pakhui Wildlife Sanctuary located?

- (a) Arunachal Pradesh
- (b) Manipur
- (c) Meghalaya
- (d) Nagaland

### Conceptual Question

3. Which of the following are true about Westerlies?

1. They bring much precipitation in the western parts of the continents as they pick up

moisture while passing over the vast stretches of the oceans.

2. These become more vigorous in the northern hemisphere because of a lack of land and dominance of oceans.

3. The westerlies are best developed between 40° and 65°S latitude

Select the correct answer code:

- A. Only 1 and 2
- B. Only 2 and 3
- C. Only 1 and 3
- D. 1, 2 and 3

### From Our Test Series

4. Consider the following statements with reference to Footloose Industries.

- 1) These industries are prone to relocation.
- 2) Footloose industries are generally eco friendly.
- 3) Diamond cutting and polishing is a footloose industry.
- 4) Footloose industries generally have a strong locational preference.

Which of the above statements is/are correct?

- a) 1 & 2 only
- b) 2 & 3 only
- c) 1 & 3 only
- d) 1, 2 & 3 only

**Conceptual Question**

5. Which of the following statements **best describes “carbon fertilization”**?

- a) Increased plant growth due to increased concentration of carbon dioxide in the atmosphere
- b) Increased temperature of Earth due to increased concentration of carbon dioxide in the atmosphere
- c) Increased acidity of oceans as a result of increased concentration of carbon dioxide in the atmosphere
- d) Adaptation of all living beings on Earth to the climate change brought about by the increased concentration of carbon dioxide in the atmosphere

## Answers with Explanations

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### Conceptual Question- From Our Test Series

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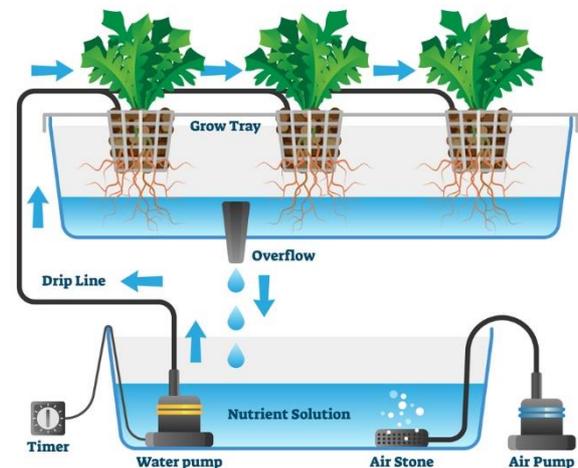
**Answer: B**

### Explanation

- **Statement 1 is correct:** Vertical farming is a system of indoor farming that can be practised for producing food in vertically stacked layers, vertically inclined surfaces and/or integrated with other structures. It often incorporates controlled-environment agriculture, which aims to optimise plant growth, and soilless farming techniques such as hydroponics, aquaponics, and aeroponics.
- The modern idea of vertical farming uses controlled-environment agriculture technology like utilisation of artificial control of light, environmental control (humidity, temperature, gases etc.), and fertigation. Vertical farms come in different shapes and sizes, from simple two-level or wall-mounted systems to large warehouse type.



### HYDROPONICS DRIP SYSTEM



- **Statement 2 is incorrect:** The vertical farm is cheap to construct, safe to operate and offers the promise of urban renewal, sustainable production of a varied food supply (year-round production), and the eventual repair of ecosystems that have been sacrificed for horizontal farming. By controlling the growing environment Vertical Farms do not need to use much pesticides or

**fungicides** to provide healthier, safer food products untainted by chemicals. **It uses significantly less water as the climate and drainage can be more easily controlled and regulated.**

- **Statement 3 is correct:** Vertical farming can **relieve the pressure on land consumption for farming** and **provide those lands to regenerate themselves which in turn reduces the carbon consumption** associated with **traditional farming and supply chain delivery.**

**UPSC Previous Year Question- Again In News**

2. In which one of the following States is **Pakhui Wildlife Sanctuary** located?

- (a) Arunachal Pradesh
- (b) Manipur
- (c) Meghalaya
- (d) Nagaland

**Answer : A**

**Explanation**

**Arunachal: In a first, NTCA meets outside of New Delhi, at Pakke**

*The meeting was held under the chairmanship of Union Minister for Environment, Forest & Climate Change Bhopender Yadav.*

**CONCEPTUAL QUESTION**

3. Which of the following are true about **Westerlies** ?

1. They bring much precipitation in the western parts of the continents as they pick up
2. moisture while passing over the vast stretches of the oceans.
3. These become more vigorous in the northern hemisphere because of a lack of land and dominance of oceans.

4. The westerlies are best developed between 40° and 65°S latitude

**Select the correct answer code:**

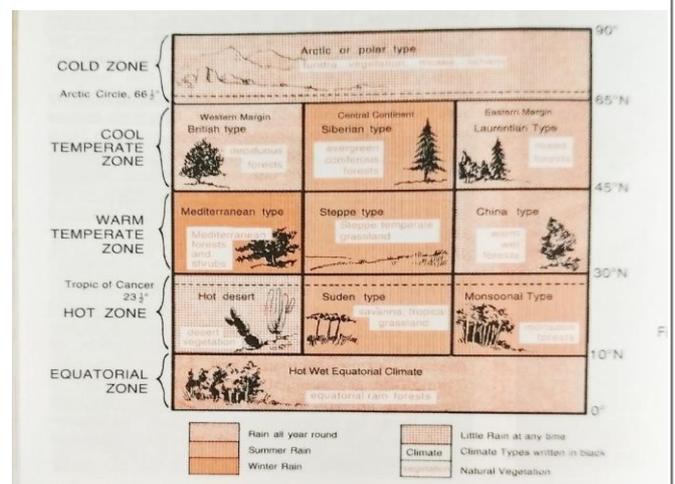
- A. Only 1 and 2
- B. Only 2 and 3
- C. Only 1 and 3
- D. 1, 2 and 3

**Answer: C**

**Explanation**

- The westerlies - winds blowing from the subtropical high-pressure belts towards the sub-polar lowpressure belts in both hemispheres.
- These bring much precipitation in the western parts of the continents because they pick up much moisture while passing over the vast stretches of the oceans.
- The westerlies become more vigorous in the southern hemisphere because of a lack of land and dominance of oceans.
- The westerlies are best developed between 40° and 65°S latitudes. These latitudes are often called Roaring Forties, Furious Fifties, and Shrieking Sixties.

**Interesting Point to Notice**



**From Our Test Series**

4. Consider the following statements with reference to **Footloose Industries**.

- 1) These industries are prone to relocation.
- 2) Footloose industries are generally eco friendly.
- 3) Diamond cutting and polishing is a footloose industry.
- 4) Footloose industries generally have a strong locational preference.

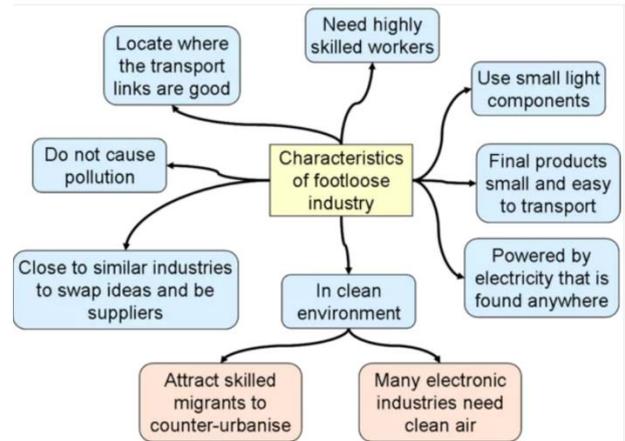
Which of the above statements is/are correct?

- a) 1 & 2 only
- b) 2 & 3 only
- c) 1 & 3 only
- d) 1, 2 & 3 only

**Answer : D**

**Explanation**

- **Statement 1 is correct.** Footloose industry is a general term for an industry that can be placed and located in a wide variety of places without much effect from factors such as raw material. These are called footloose as these types of industries are prone to relocation.
- **Statement 2 is correct.** These are environment-friendly industries as the process involved in these industries have a negligible carbon footprint.
- **Statement 3 is correct.** Diamond cutting and polishing is a footloose industry as it's location is independent of factors like raw material. Other examples are - watch making, precision electronics.
- **Statement 4 is not correct.** Footloose industry doesn't have a strong locational preference as the input resources and output markets can be found in many places.



**CONCEPTUAL QUESTION**

5. Which of the following statements **best describes "carbon fertilization"**?

- a) Increased plant growth due to increased concentration of carbon dioxide in the atmosphere
- b) Increased temperature of Earth due to increased concentration of carbon dioxide in the atmosphere
- c) Increased acidity of oceans as a result of increased concentration of carbon dioxide in the atmosphere
- d) Adaptation of all living beings on Earth to the climate change brought about by the increased concentration of carbon dioxide in the atmosphere

**Answer : A**

**Explanation**

- **Carbon fertilization is also known as Carbon Dioxide Fertilisation.**
- It is the **phenomena (artificial enrichment ) that the increase of carbon dioxide in the atmosphere increases the rate of photosynthesis in plants.**

## Questions for Today

### Objective Of the Session

### Focus On the Concept

### Conceptual Question- Ncert Based

1. With reference to **the Northern Plains in India**, consider the following statements:

1. Bhabhar - The streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in this zone.
2. Tarai - With an approximate width of 10-20 km where most of the streams and rivers re-emerge without having any properly demarcated channel, thereby, creating marshy and swampy conditions which has a luxurious growth of natural vegetation and houses a varied wildlife.

Which of the statements given above is/are **incorrect**?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

### Conceptual Question- Ncert Based

2. With reference to **the Northern Plains in India**, consider the following statements:

1. Bhangar - The largest part of the northern plain is formed of older alluvium which lies above the floodplains of the rivers and presents a terracelike feature.
2. Khadar - This newer, younger deposits of the floodplains are renewed almost every year and so are fertile, thus, ideal for intensive agriculture.

Which of the statements given above is/are **correct**?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

### NCERT Based Question

3. Land which is **left uncultivated for one or less than one agricultural year is known as:**

- A. Culturable Waste-Land
- B. Current Fallow
- C. Fallow other than Current Fallow
- D. None of the above

### From Our Test Series

4. Which one of the **water bodies separates the Andaman from the Nicobar?**

- A. 11° Channel
- B. 10° Channel
- C. Sunda strait
- D. Malacca strait

### World Geography

5. Consider the following:

1. It is a hot wind of local importance in the Alps.
2. It is a strong, gusty, dry and warm wind which develops on the leeward side of a mountain range.
3. As the windward side takes away whatever moisture there is in the incoming wind in the form of orographic precipitation, the air that descends on the leeward side is dry and

warm.

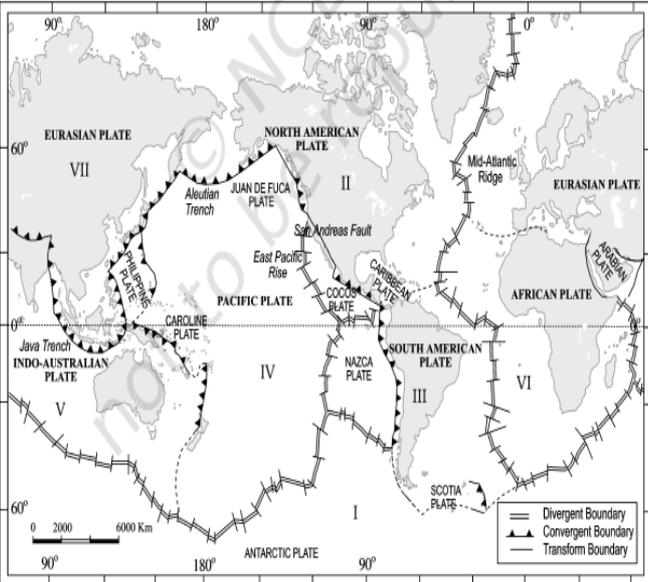
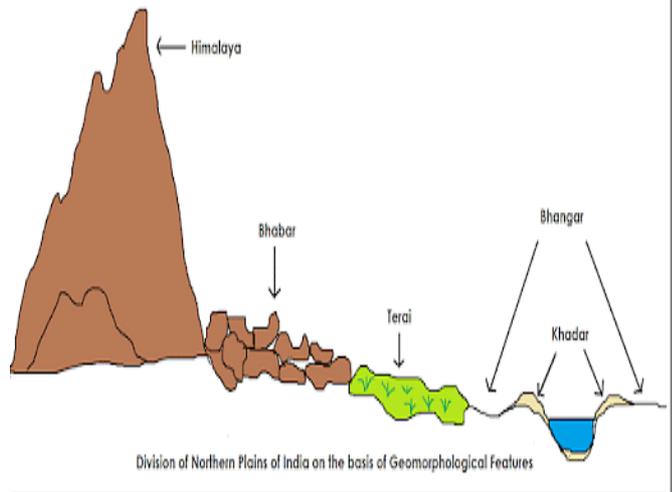
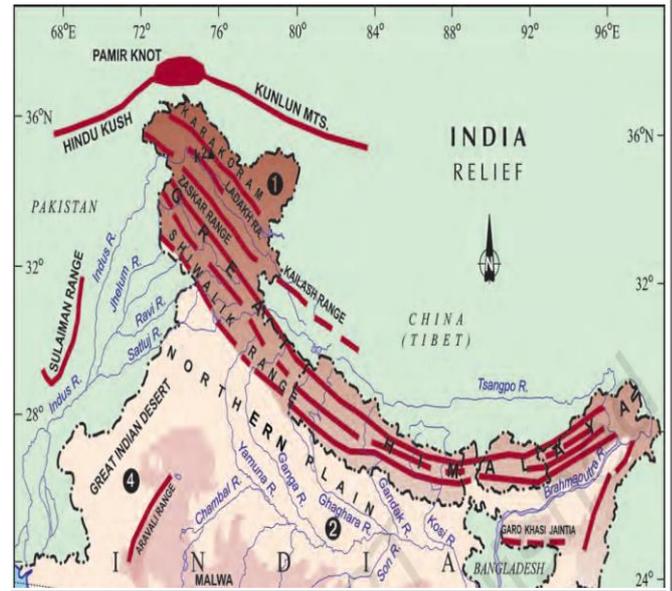
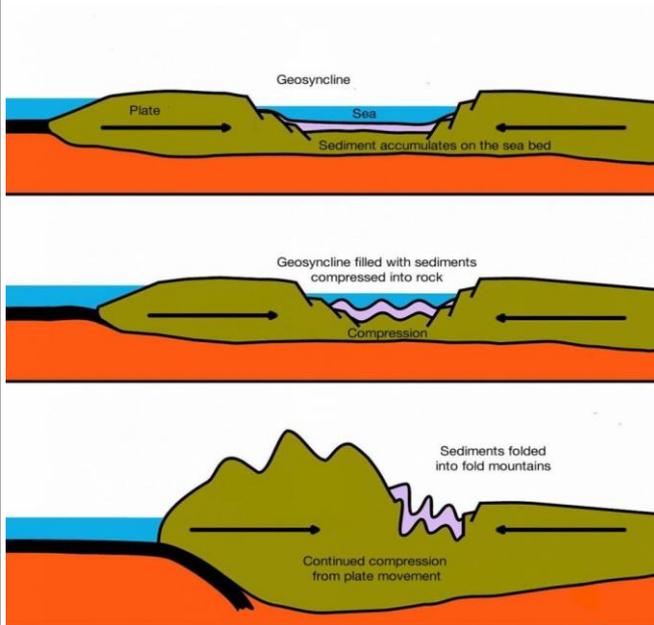
4. The wind helps animal grazing by melting snow and aids the ripening of grapes.

**Which of the following is being described in the above passage?**

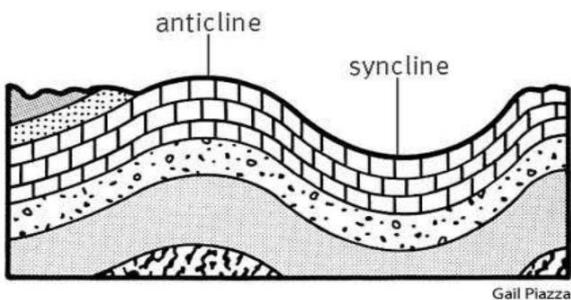
- A. Chinook
- B. Sirocco
- C. Foehn
- D. Harmattan

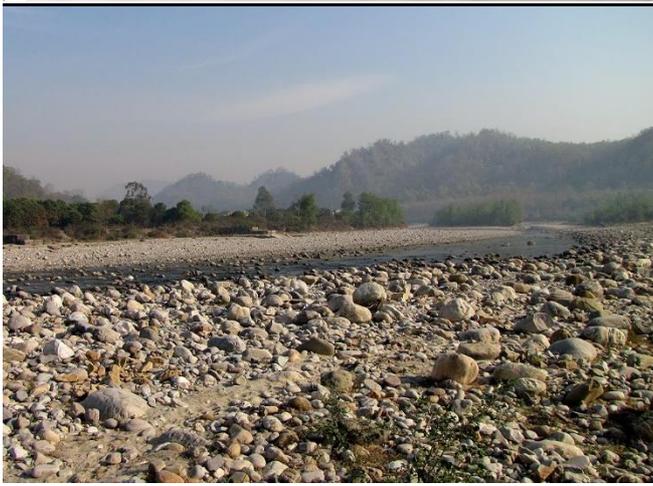
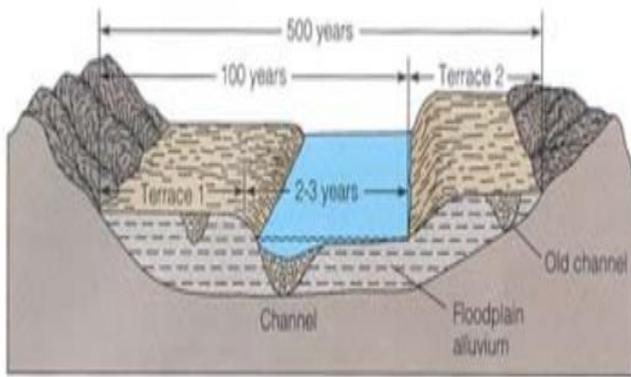
**Answers with Explanations**

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**LET US UNDERSTAND THE CONCEPT**





### CONCEPTUAL QUESTION- NCERT BASED

1. With reference to **the Northern Plains in India**, consider the following statements:

1. Bhabhar - The streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in this zone.
2. Tarai - With an approximate width of 10-20 km where most of the streams and rivers re-emerge without having any properly demarcated channel, thereby, creating marshy and swampy conditions which has a luxurious growth of natural vegetation and houses a varied wildlife.

Which of the statements given above is/are **incorrect**?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer : D**

**Explanation**

- The northern plains are formed by the alluvial deposits brought by the rivers - the Indus, the Ganga and the Brahmaputra.
- Bhabhar is a narrow belt ranging between 8-10 km parallel to the Shiwalik foothills at the break-up of the slope. As a result of this, the streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in this zone.
- South of the Bhabhar is the Tarai belt, with an approximate width of 10-20 km where most of the streams and rivers re-emerge without having any properly demarcated channel, thereby, creating marshy and swampy conditions known as the Tarai. This has a luxurious growth of natural vegetation and houses a varied wildlife

### CONCEPTUAL QUESTION- NCERT BASED

2. With reference to **the Northern Plains in India**, consider the following statements:

1. Bhangar - The largest part of the northern plain is formed of older alluvium which lies above the floodplains of the rivers and presents a terracelike feature.
2. Khadar - This newer, younger deposits of the floodplains are renewed almost every year and so are fertile, thus, ideal for intensive agriculture.

Which of the statements given above is/are **correct**?

- A. Only 1
- B. Only 2
- C. **Both 1 and 2**
- D. Neither 1 nor 2

**Answer: C**

**Explanation**

- The largest part of the northern plain is formed of older alluvium. It lies above the floodplains of the rivers and presents a terracelike feature. This part is known as bhangar.
- The soil in this region contains calcareous deposits, locally known as kankar.
- The newer, younger deposits of the floodplains are called khadar. They are renewed almost every year and so are fertile, thus, ideal for intensive agriculture.

### NCERT BASED QUESTION

3. Land which is left uncultivated for one or less than one agricultural year is known as:

- Culturable Waste-Land
- Current Fallow**
- Fallow other than Current Fallow
- None of the above

Answer : B

Explanation

Fallowing is a cultural practice adopted for giving the land rest.

Some of the land-use categories as maintained in the Land Revenue Records are as follows:

- **Culturable Waste-Land:** Any land which is left fallow (uncultivated) for more than five years is included in this category. It can be brought under cultivation after improving it through reclamation practices.
- **Current Fallow:** This is the land which is left without cultivation for one or less than one agricultural year. The land recoups the lost fertility through natural processes.
- **Fallow other than Current Fallow:** This is also a cultivable land which is left uncultivated for more than a year but less than five years.

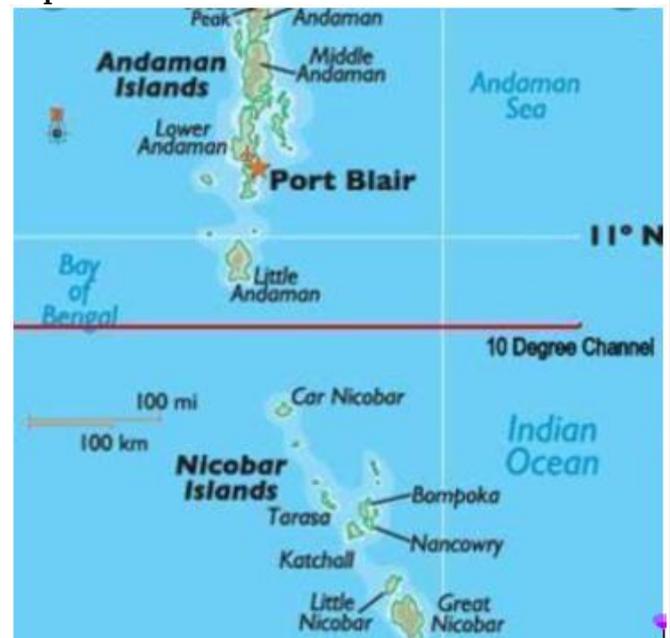
### FROM OUR TEST SERIES

4. Which one of the water bodies separates the Andaman from the Nicobar?

- 11° Channel
- 10° Channel**
- Sunda strait
- Malacca strait

Answer : B

Explanation



- The Andaman in the north and the Nicobar in the south. They are separated by a waterbody which is called the Ten degree channel.
- It is believed that these islands are an elevated portion of submarine mountains.
- However, some smaller islands are volcanic in origin. Barren island, the only active volcano in India is also situated in the Nicobar islands.

### WORLD GEOGRAPHY

5. Consider the following:

1. It is a hot wind of local importance in the Alps.
2. It is a strong, gusty, dry and warm

wind which develops on the leeward side of a mountain range.

3. As the windward side takes away whatever moisture there is in the incoming wind in the form of orographic precipitation, the air that descends on the leeward side is dry and warm.
4. The wind helps animal grazing by melting snow and aids the ripening of grapes.

Which of the following is being described in the above passage ?

- A. Chinook
- B. Sirocco
- C. **Foehn**
- D. Harmattan

Answer : C

Explanation



**Foehn or Fohn**

- Foehn is a hot wind of local importance in the Alps. It is a strong, gusty, dry and warm wind which develops on the leeward side of a mountain range. As the windward side takes away whatever moisture there is in the incoming wind in the form of orographic precipitation, the air that descends on the leeward side is dry and warm (Katabatic Wind).

- The temperature of the wind varies between 15°C and 20°C. The wind helps animal grazing by melting snow and aids the ripening of grapes.

**Chinook**

- Foehn like winds in USA and Canada move down the west slopes of the Rockies and are known as Chinook . It is beneficial to ranchers east of the Rockies as it keeps the grasslands clear of snow during much of the winter

**Sirocco**

- Sirocco is a Mediterranean wind that comes from the Sahara. The Sirocco causes dusty dry conditions along the northern coast of Africa, storms in the Mediterranean Sea, and cool wet weather in Europe. Since they carry red dust over Sahara , the rainfall which they cause is called blood rain sometimes.

**Harmattan**

- Harmattan or doctor wind is an easterly or North Easterly winds that blows in West Africa in Tropic of Cancer. It blows from Sahara Desert over West Africa into the Gulf of Guinea. It is called Doctor Wind due to its excessive dryness it kills pests, germs etc which helps in reduction in diseases.

## Questions for Today

### CONCEPTUAL QUESTION

1. The seasonal reversal of winds is the typical characteristic of

- A. Equatorial climate
- B. Mediterranean climate
- C. Monsoon climate
- D. All of the above climates

### CONCEPTUAL QUESTION

2. What explains the eastward flow of the Equatorial Counter Current?

- 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

### CONCEPTUAL QUESTION

3. What is/are the advantage/ advantages of zero tillage in agriculture?

- 1. Sowing of wheat is possible without burning the residue of previous crop.
- 2. Without the need for nursery of rice saplings, direct planting of paddy seeds in the wet soil is possible.
- 3. Carbon sequestration in the soil is possible.

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 3 only
- D. 1, 2 and 3

### CONCEPTUAL QUESTION

4. What is the use of biochar in farming?

- 1. 'Biochar can be used as a part of the growing medium in vertical farming.
- 2. When biochar is a part of the growing medium, it promotes the growth of nitrogen fixing microorganisms.
- 3. When biochar is a part of the growing-medium, it enables the growing medium to retain water for a longer time.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

### CONCEPTUAL QUESTION

5. Why are dewdrops 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 a low temperature on cloudy nights.
- D. Clouds deflect the blowing wind to ground level.

**Answers with Explanations**

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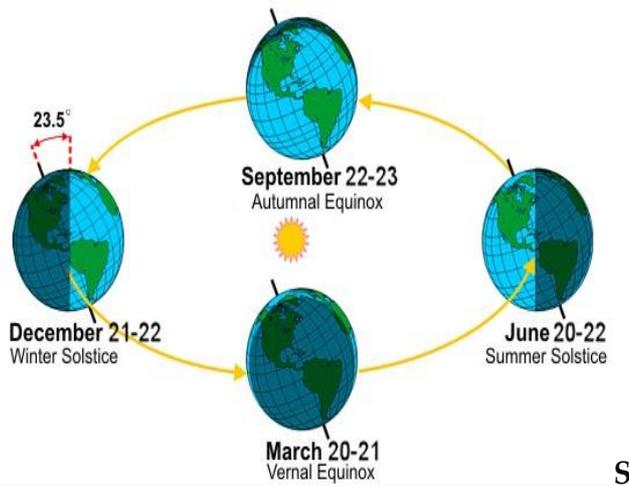
**CONCEPTUAL QUESTION**

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- C. **Monsoon climate**
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Answer : C

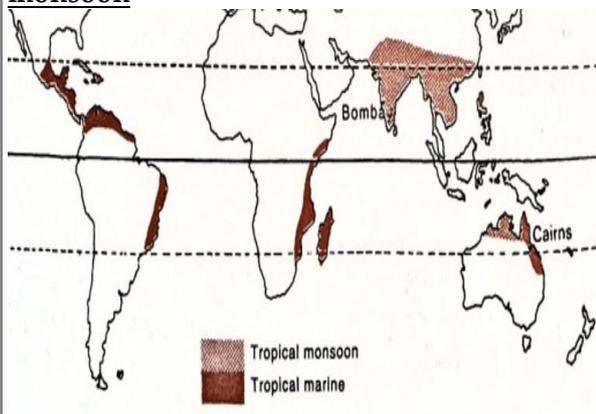
Explanation



**an Overhead Tropic of Capricorn**

**Summer Conditions - South East and South West**

**monsoon**



**Winter Conditions - North East Monsoon and North West Monsoon**

**CONCEPTUAL QUESTION**

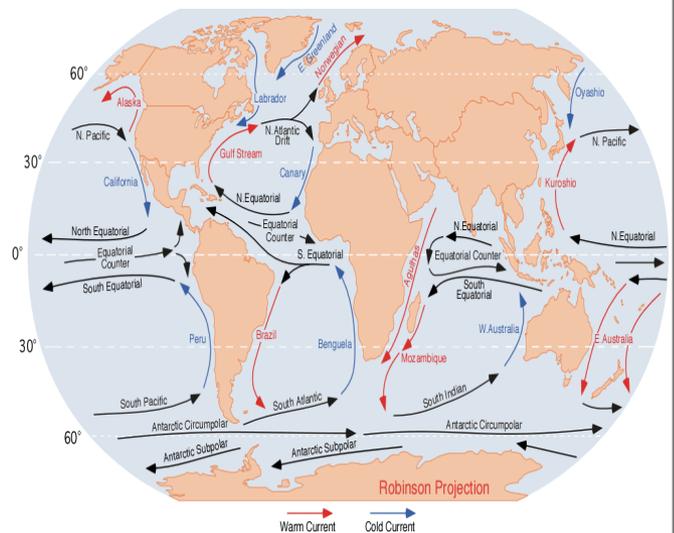
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- A. The Earth's rotation on its axis
- B. **Convergence of the two equatorial currents**
- C. Difference in salinity of water
- D. Occurrence of the belt of calm near the equator

Answer: B

Explanation

**Basics**



**CONCEPTUAL QUESTION**

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- 1. Sowing of wheat is possible without burning the residue of previous crop.
- 2. Without the need for nursery of rice saplings, direct planting of paddy seeds in the wet soil is possible.
- 3. Carbon sequestration in the soil is possible.

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer : D

Explanation



Happy Seeder - Zero -till farming is a way of growing wheat crops without tillage or disturbing the soil in harvested fields.

- A Happy Seeder is a no-till planter, towed behind a tractor, that sows (plants) seeds in rows directly without any prior seedbed preparation.
- Direct seeded rice (DSR) has received much attention because of its low - input demand. It involves sowing pre - germinated seed into a puddled soil surface (wet seeding), standing water (water seeding) or dry seeding into a prepared seedbed (dry seeding).

### CONCEPTUAL QUESTION

4. What is the use of biochar in farming?

1. 'Biochar can be used as a part of the growing medium in vertical farming.
2. When biochar is a part of the growing medium, it promotes the growth of nitrogen fixing microorganisms.
3. When biochar is a part of the growing-medium, it enables the growing medium to retain water for a longer time.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer : D

Explanation



Biochar is a high-carbon, fine-grained residue that is produced via pyrolysis; it is the direct thermal decomposition of biomass in the absence of oxygen (preventing combustion), which produces a mixture of solids (the biochar proper), liquid (bio-oil), and gas (syngas) products.

Biochar can improve water quality, reduce soil emissions of greenhouse gases, reduce nutrient leaching, reduce soil acidity, and reduce irrigation and fertilizer requirements.

Points :

- Carbon Sink
- Soil Amendment
- Water Retention

### CONCEPTUAL QUESTION

5. 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 a low temperature on cloudy nights.
- D. Clouds deflect the blowing wind to ground level.

**Answer: B**

### **Explanation**

#### **Dew**

- When the moisture is deposited in the form of water droplets on cooler surfaces of solid objects (rather than nuclei in air above the surface) such as **stones, grass blades and plant leaves, it is known as dew.**
- The ideal conditions for its formation are **clear sky, calm air, high relative humidity, and cold and long nights.**
- For the formation of dew, it is necessary that the **dew point is above the freezing point.**

## Questions for Today

### Objective Of The Session

### Focus On The Concept

### Conceptual Question

1. Which of the following **are true for Warm Fronts?**

- 1) It is a frontal surface that slopes downward where warm air actively moves over cold air.
  - 2) When the warm air mass entirely covers the cold air mass, or when the warm air mass makes room for it on the ground, frontolysis begins.
  - 3) These fronts bring about light to moderate precipitation across a wide area and for several hours.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

### CONCEPTUAL QUESTION

2. Choose the **correct** statements among the following:

- 1) Steppes are intermediate regions, not receiving enough rainfall to support a forest but are also not as dry as a desert.
- 2) The steppes in the northern hemisphere have a very high annual range of temperatures.
- 3) To its contrast, the steppes in the southern hemisphere, due to maritime influence, have a moderate climate throughout the year.
- 4) The average annual rainfall over the steppes varies from 25 to 75 cm, depending upon the region.

- A. Only 1 and 4  
B. Only 2 and 3  
C. 1, 2 and 3  
D. 1, 2, 3 and 4

### NCERT BASED QUESTION

3. Which of the following are **true about Jute?**

1. It grows **well on** alluvial soil and requires high temperature, heavy rainfall and humid climate.
  2. This crop is generally **well grown in the extra - tropical areas.**
  3. India and Bangladesh are the leading producers of jute.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

### UPSC - PYQ - INDUSTRIES - FOR BOTH PRELIMS AND MAINS

4. With reference to the "**Tea Board**" in India, **consider the following statements:**

- 1) The Tea Board is a statutory body.
- 2) It is a regulatory body attached to the Ministry of Agriculture and Farmers Welfare.
- 3) The Tea Board's Head Office is situated in Bengaluru.
- 4) The Board has overseas offices at Dubai and Moscow.

Which of the statements given above are **correct?**

- A. 1 and 3  
B. 2 and 4  
C. 3 and 4  
D. 1 and 4

---

**UPSC - PYQ**

5. The **black cotton soil of India has been formed due to the weathering of:**

- A. Brown forest soil
- B. Fissure volcanic rock
- C. Granite and schist
- D. Shale and limestone

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube.

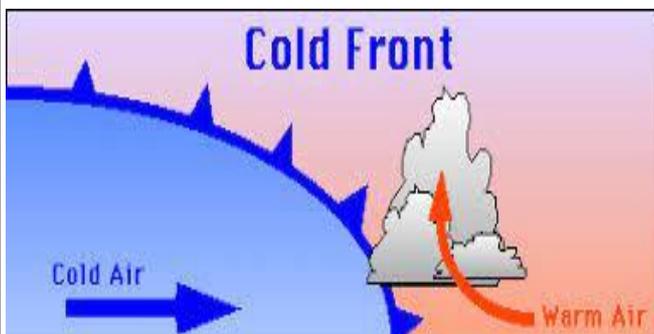
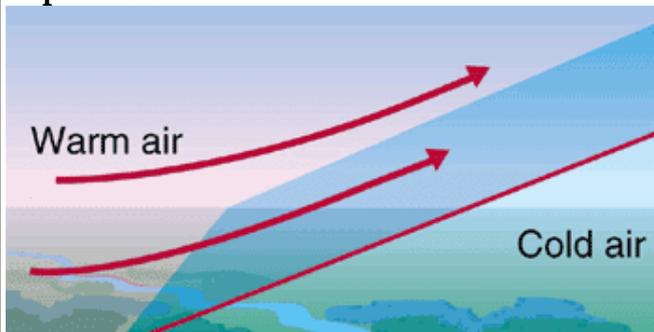
### CONCEPTUAL QUESTION

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1. It is a frontal surface that slopes downward where warm air actively moves over cold air.
  2. When the warm air mass entirely covers the cold air mass, or when the warm air mass makes room for it on the ground, frontolysis begins.
  3. These fronts bring about light to moderate precipitation across a wide area and for several hours.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

**Answer: D**

### Explanation



- It is a sloping frontal surface along which active movement of warm air over cold air takes place (warm air mass is too weak to beat the cold air mass). Frontolysis (front dissipation) begins when the warm air mass makes way for cold air mass on the ground, i.e., when the warm air mass completely sits over the cold air mass.
- As the warm air moves up the slope, it condenses and causes precipitation but, unlike a cold front, the temperature and wind direction changes are gradual. Such fronts cause moderate to gentle precipitation over a large area, over several hours. The passage of warm front is marked by rise in temperature, pressure and change in weather.

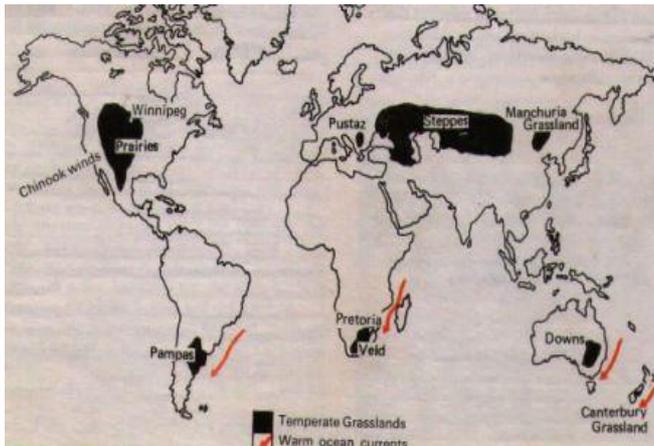
### CONCEPTUAL QUESTION

2. Choose the **correct** statements among the following:

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  3. To its contrast, the steppes in the southern hemisphere, due to maritime influence, have a moderate climate throughout the year.
  4. The average annual rainfall over the steppes varies from 25 to 75 cm, depending upon the region.
- A. Only 1 and 4  
B. Only 2 and 3  
C. 1,2 and 3  
D. 1, 2,3 and 4

**Answer: D**

**Explanation**



### NCERT BASED QUESTION

3. Which of the following are **true about Jute**?

1. It grows **well on** alluvial soil and requires high temperature,
  2. heavy rainfall and humid climate.
  3. 2) This crop is generally well grown in the extra - tropical areas.
  4. India and Bangladesh are the leading producers of jute.
- A. Only 1 and 2  
B. Only 2 and 3  
C. **Only 1 and 3**  
D. 1, 2 and 3

**Answer: C**

**Explanation**

- Jute: Jute was also known as the 'Golden Fibre'. It grows well on alluvial soil and requires high temperature, heavy rainfall and humid climate. This crop is grown in the tropical areas. India and Bangladesh are the leading producers of jute.

### UPSC - PYQ - INDUSTRIES - FOR BOTH PRELIMS AND MAINS

4. With reference to the "**Tea Board**" in India, consider the following statements:

1. The Tea Board is a statutory body.
2. It is a regulatory body attached to the Ministry of Agriculture and Farmers Welfare.
3. The Tea Board's Head Office is situated in Bengaluru.
4. The Board has overseas offices at Dubai and Moscow.

Which of the statements given above are **correct**?

- A. 1 and 3  
B. 2 and 4  
C. 3 and 4  
D. **1 and 4**

**Answer : D**

**Explanation**

- The Tea Board of India is a statutory body created under the Tea Act, 1953.
- It is functioning as a statutory body of the Central Government under the Ministry of Commerce.
- Tea Board of India's Head Office is situated in Kolkata.
- The Tea Board of India has overseas offices in Moscow, Dubai, Hamburg, London and New York.

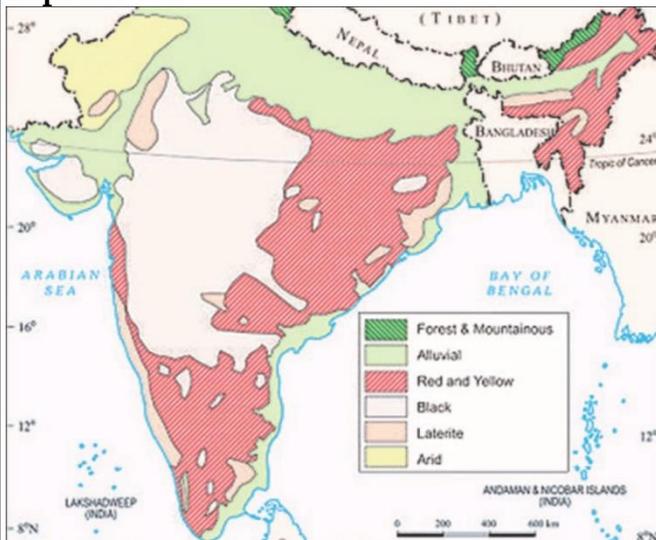
### UPSC - PYQ

5. The **black cotton soil of India has been formed due to the weathering of:**

- A. Brown forest soil  
B. **Fissure volcanic rock**  
C. Granite and schist  
D. Shale and limestone

Answer : B

**Explanation**



**MAINS QUESTION - 2022 - Discuss the natural resource potentials of 'Deccan trap'.**

- When the molten magma comes out and spreads horizontally on the earth's surface in layers and begins to cool, minerals like iron ore, aluminum, etc., constituting these solidified rocks are formed here.
- Again, minerals like gold, silver, copper are formed in the plateau regions constituted by metamorphic rocks.
- The Chota Nagpur Plateau in India is rich in such mineral resources and thus this region is known as the 'Mineral Reserve of India'.

**All Geography Mains Questions - in less than an Hour**

**UPSC MAINS GS-1** UPSC Mains GS - 1 Geography Questions Analysis  
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Agenda Of The Lecture

- Line Of Thought
- Structure + Content
- How to Enrich your Answer

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48:30

## Questions for Today

### WORLD CLIMATE SPECIAL

1. Identify the correct statements among the following in context with Natal Type Climate:

1. It consists the warm temperate eastern margin of the southern hemisphere including Natal (in Brazil), eastern Australia, and southern Brazil – Paraguay – Uruguay and Northern Argentina.
2. The narrowness of the continents and the dominance of maritime influence eliminate the monsoonal elements from this Climate Type.
3. The South-East Trade Winds over here bring about even distribution of rainfall throughout the year.

- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3 only

2. Find the correct statements in context of Crust:

1. The continents are composed of heavier silicates while the oceans have the lighter silicates.
2. The thickness of the crust generally varies in the range of range of 5-30 km in case of the oceanic crust and as 50-70 km in case of the continental crust.

- A. Only 1  
B. Only 2  
C. Both 1 and 2  
D. Neither 1 nor 2

### UPSC Previous Year Question

3. Tides occur in the oceans and seas due to which among the following?

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:

- A. 1 only  
B. 2 and 3 only  
C. 1 and 3 only  
D. 1, 2 and 3

4. The strong gravitational pull exerted by the sun and the moon on the earth's surface causes the tides. Which of the following can be considered as advantages of Tides?

1. High tides help in navigation.
  2. The high tides also help in fishing.
  3. Tides can be used to generate electricity in some places.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

5. Consider the following statements:

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?

- A. 1 only  
B. 2 only  
C. Both 1 and 2  
D. Neither 1 and 2

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube.

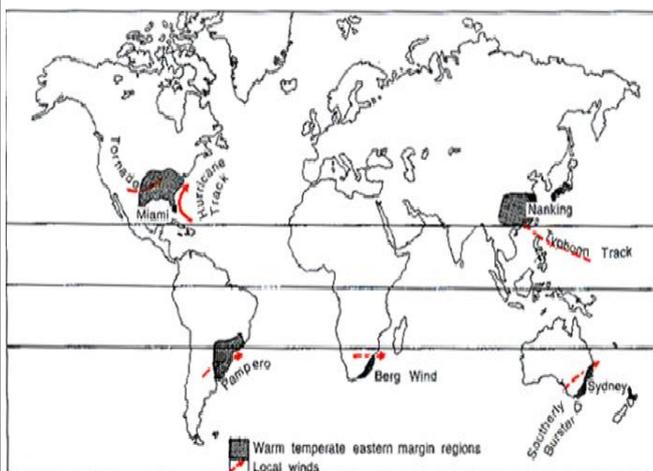
### WORLD CLIMATE SPECIAL

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1. It consists the warm temperate eastern margin of the southern hemisphere including Natal (in Brazil), eastern Australia, and southern Brazil – Paraguay – Uruguay and Northern Argentina.
  2. The narrowness of the continents and the dominance of maritime influence eliminate the monsoonal elements from this Climate Type.
  3. The South-East Trade Winds over here bring about even distribution of rainfall throughout the year.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3 only

**Answer : D**

**Explanation**



### Natal Type Climate

- The narrowness of the continents and the dominance of maritime influence eliminate the monsoonal elements.
- The South-East Trade Winds bring about a more even distribution of rainfall throughout the year.
- It consists the entire warm temperate eastern margin (non-monsoonal areas) of the southern hemisphere including Natal (in Brazil), eastern Australia, and southern Brazil – Paraguay – Uruguay and northern Argentina.

2. Find the correct statements in context of Crust:

1. The continents are composed of heavier silicates while the oceans have the lighter silicates.
  2. The thickness of the crust generally varies in the range of range of 5-30 km in case of the oceanic crust and as 50-70 km in case of the continental crust.
- A. Only 1  
B. Only 2  
C. Both 1 and 2  
D. Neither 1 nor 2

**Answer: C**

**Explanation:**

- The continents are composed of lighter silicates – silica + aluminum while the oceans have the heavier silicates – silica + magnesium (also called sima).
- Density increases with depth, and the average density is about 2.7 g/cm<sup>3</sup>.
- The thickness of the crust varies in the range of range of 5-30 km in case of the oceanic crust and as 50-70 km in case of the continental crust.

- The continental crust can be thicker than 70 km in the areas of major mountain systems. It is as much as 70-100 km thick in the Himalayan region.

**UPSC Previous Year Question**

**3. Tides occur in the oceans and seas due to which among the following?**

- Gravitational force of the Sun
- Gravitational force of the Moon
- Centrifugal force of the Earth

Select the correct answer using the code given below:

- 1 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

**Answer: D**

**Explanation:**

- The moon's gravitational pull to a great extent and to a lesser extent the sun's gravitational pull, are the major causes for the occurrence of tides. Another factor is centrifugal force, which is the force that acts to counter balance the gravity.

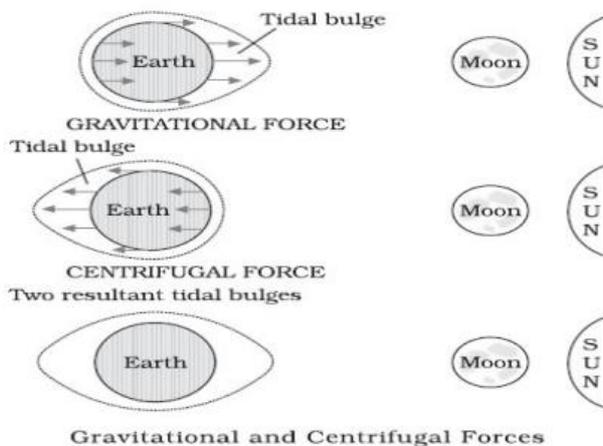


Figure 14.2 : Relation between gravitational forces and tides

**4. The strong gravitational pull exerted by the sun and the moon on the earth's surface causes the tides. Which of the following can be considered as advantages of Tides?**

- High tides help in navigation.
  - The high tides also help in fishing.
  - Tides can be used to generate electricity in some places.
- Only 1 and 2
  - Only 2 and 3
  - Only 1 and 3
  - 1, 2 and 3

**Answer: D**

**Explanation:**

- High tides help in navigation. They raise the water level close to the shores. This helps the ships to arrive at the harbour more easily. The high tides also help in fishing. Many more fish come closer to the shore during the high tide. This enables fishermen to get a plentiful catch. The rise and fall of water due to tides is being used to generate electricity in some places.

**5. Consider the following statements:**

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

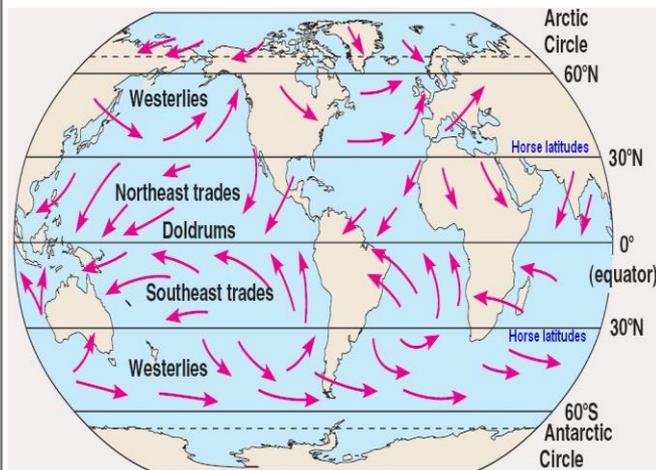
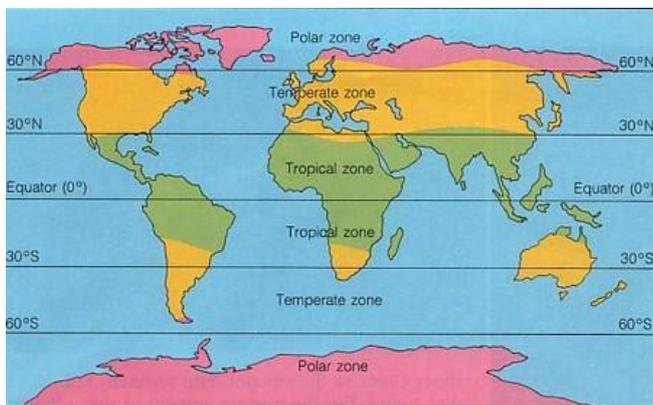
**Which of the statements given above is/are correct?**

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 and 2

**Answer: D**

**Explanation:**

- Warmer water is transported westward in the ocean by the Northeast trade winds in the Northern hemisphere of the tropical zone. Therefore, In the tropical zone, the western sections of the oceans are warmer than the eastern sections, owing to the influence of trade winds.
- Warmer water is transported eastward in the ocean by the Westerlies in temperate zones. Therefore in the temperate Zone, westerlies make the eastern sections of oceans warmer than the western sections.



## Questions For Today

### WORLD CLIMATE

#### 1. Identify the correct statements for British Type Climate:

1. These cool temperate western margins are under the influence of the Westerlies all-round the year.
  2. They are the regions of frontal cyclonic activity.
  3. Relief can make great difference in the annual amount of rainfall in this type of Climate.
- A. 1 and 3 only  
B. 2 and 3 only  
C. 1 and 2 only  
D. 1, 2 and 3

### WORLD GEOGRAPHY - VEGETATION

#### 2. Identify the Characteristics of Vegetation found in British Type Climate:

1. The natural vegetation of this climatic type is deciduous forest.
  2. The trees shed their leaves in the warm season.
  3. Higher up the mountains the deciduous trees are generally replaced by the conifers which can survive a higher altitude, a lower temperature and poorer soils.
- A. Only 1 and 2  
B. Only 2 and 3  
C. Only 1 and 3  
D. 1, 2 and 3

### UPSC PYQ - MAP BASED QUESTION

#### 3. Consider the following countries:

1. Azerbaijan
2. Kyrgyzstan

3. Tajikistan
4. Uzbekistan
5. Turkmenistan

#### 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

### UPSC PYQ

#### 4. The term “Levant” often heard in the news roughly corresponds to which of the following regions?

- 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

#### 5. Identify the correct climate type by reading the passage given below:

This biome has developed between 30°-40° (some time up to 45°) latitudes in both the hemispheres in the western parts of the continents. These characteristic climatic features of the biome have developed because of the seasonal shifting of the pressure and wind belts due to northward and southward migration of the sun. These regions are marked for hot dry summers and mild rainy winters.

- A. Mediterranean Climate  
B. Temperate Grasslands  
C. Steppe Biome  
D. China Type

## Answers with Explanations

Click [here](#) to watch the following topics on YouTube.

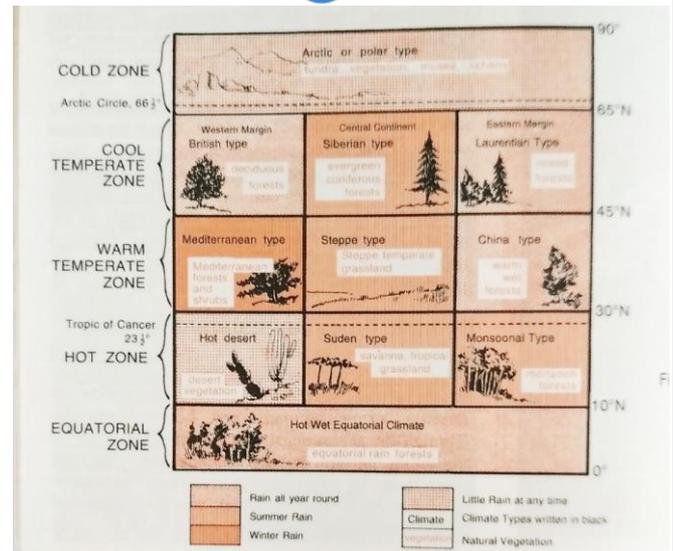
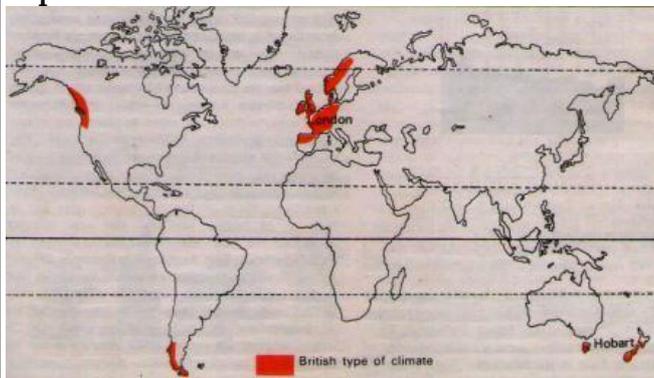
## WORLD CLIMATE

### 1. Identify the correct statements for British Type Climate:

1. These cool temperate western margins are under the influence of the Westerlies all-round the year.
  2. They are the regions of frontal cyclonic activity.
  3. Relief can make great difference in the annual amount of rainfall in this type of Climate .
- A. 1 and 3 only  
B. 2 and 3 only  
C. 1 and 2 only  
D. 1, 2 and 3

Answer : D

### Explanation



- All throughout the year, the Westerlies have an impact on the chilly, temperate western edges. These areas are the sites of frontal cyclonic activity. Due to the higher impact of the ocean, it is also known as the North-West European Maritime Climate.
- Moderately warm summers and fairly mild winters. Rainfall occurs throughout the year with winter maxima. Relief might significantly alter the annual amount. This is especially noteworthy in New Zealand, where the eastern Canterbury plains experience relative drought due to the rain-shadow effect while the western edges are subjected to substantial orographic rainfall.

## WORLD GEOGRAPHY - VEGETATION

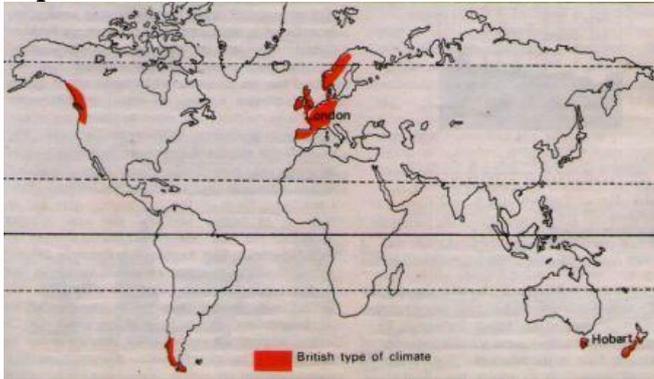
### 2. Identify the Characteristics of Vegetation found in British Type Climate:

1. The natural vegetation of this climatic type is deciduous forest.
2. The trees shed their leaves in the warm season.
3. Higher up the mountains the deciduous trees are generally replaced by the conifers which can survive a higher altitude, a lower temperature and poorer soils.

- A. Only 1 and 2
- B. Only 2 and 3
- C. Only 1 and 3
- D. 1, 2 and 3

**Answer : C**

**Explanation**



- The natural vegetation of this climatic type is deciduous forest. During the colder months, trees lose their foliage. They have made this adaption to safeguard themselves from the winter snow and ice. Fall, or autumn, is the start of the shedding season. Oak, elm, ash, birch, beech, and poplar are a few of the most popular species. Willows flourish in the wetter places; they are used to make light cricket bats. Willows can be found in Kashmir, India. The conifers, which can endure a higher altitude, a lower temperature, and poorer soils, typically replace the deciduous trees further up the mountains in the Scandinavian highlands, the Rockies, southern Andes, and the Southern Alps of New Zealand.

**UPSC PYQ - MAP BASED QUESTION**

**3. Consider the following countries:**

1. Azerbaijan
2. Kyrgyzstan
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**Explanation**



**UPSC PYQ**

4. The term “Levant” often heard in the news roughly corresponds to which of the following regions?

- 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

**Answer: A**



Explanation

- C. Steppe Biome
- D. China Type

**Answer : A**

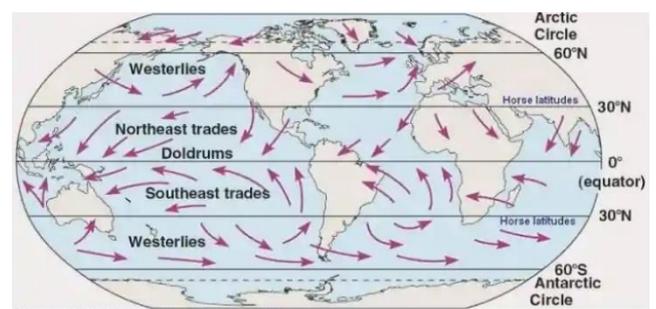
**Explanation**

- This biome has developed between 30°-40° (some time up to 45°) latitudes in both the hemispheres in the western parts of the continents. These characteristic climatic features of the biome have developed because of the seasonal shifting of the pressure and wind belts due to northward and southward migration of the sun. These regions are marked for hot dry summers and mild rainy winters.
- The amount of soil-water increases during the winter and spring because of the rainfall, which is what allows for the greatest growth in the vegetation. However, the dry summer season results in a deficiency in the amount of soil-water because of water and moisture loss from increased evaporation and evapotranspiration because of the significant increase in temperature and, of course, because of the general lack of precipitation during the summer season.
- Soil water deficiency during the dry summer months hinders vegetation development.

5. Identify the correct climate type by reading the passage given below:

This biome has developed between 30°-40° (some time up to 45°) latitudes in both the hemispheres in the western parts of the continents. These characteristic climatic features of the biome have developed because of the seasonal shifting of the pressure and wind belts due to northward and southward migration of the sun. These regions are marked for hot dry summers and mild rainy winters.

- A. Mediterranean Climate
- B. Temperate Grasslands



## Question For Today

### OBJECTIVE OF THE SESSION

### FOCUS ON THE CONCEPT

#### Current Affairs

1. The Term “Fujiwhara Effect” has been in news. It is associated with

- A. Agriculture
- B. Tropical Cyclones
- C. Monsoon Climate
- D. Vertical Farming

#### Application Based Question

2. Which of the following can be considered as an **example of Temperature inversion?**

- 1. Frontal Inversion
  - 2. Subsidence Inversion
- A. Only 1
  - B. Only 2
  - C. Both 1 and 2
  - D. Neither 1 nor 2

#### CONCEPTUAL QUESTION

3. Choose the **about Natural Vegetation in the Boreal Climate:**

- 1. The predominant vegetation is evergreen coniferous forest.
  - 2. The greatest single band of the coniferous forest is the taiga in Siberia .
  - 3. The coniferous forest belts of Eurasia and North America are the one of richest sources of softwood in the world.
- A. 1 and 2 only
  - B. 2 and 3 only
  - C. 1 and 3 only
  - D. 1, 2 and 3

#### Application Based Question

4. In the context of India, **which of the following is/are considered to be of practice(s) of eco-friendly agriculture?**

- 1. Crop diversification
- 2. Legume intensification
- 3. Tensiometer use
- 4. Vertical farming

Select the correct answer using the code given below:

- A. 1, 2 and 3 only
- B. 3 only
- C. 4 only
- D. 1, 2, 3 and 4

#### CONCEPTUAL QUESTION

5. Choose the **correct statements :**

- 1. Diurnal and annual range of temperatures are usually highest in the interiors of continents due to the effect of continentality.
  - 2. Diurnal and annual range of temperatures are usually least in oceans.
- A. Only 1
  - B. Only 2
  - C. Both 1 and 2
  - D. Neither 1 nor 2

## Answers with Explanations

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### OBJECTIVE OF THE SESSION

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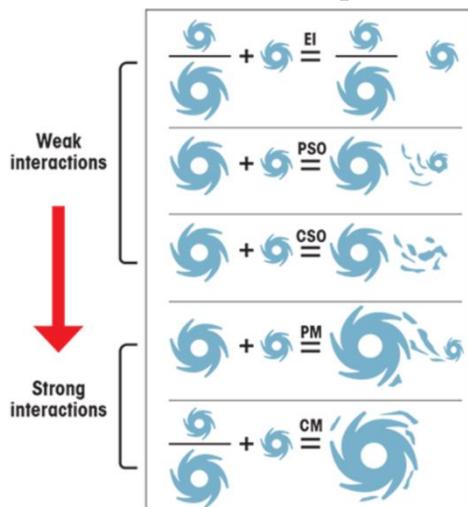
- A. Agriculture
- B. Tropical Cyclones
- C. Monsoon Climate
- D. Vertical Farming

**Answer : B**

#### Explanation

#### Fujiwara Effect

- The Fujiwara 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

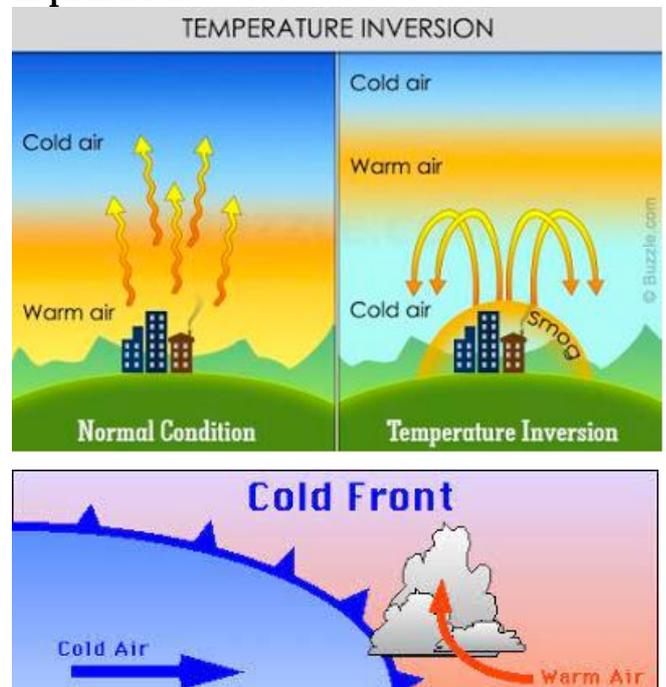
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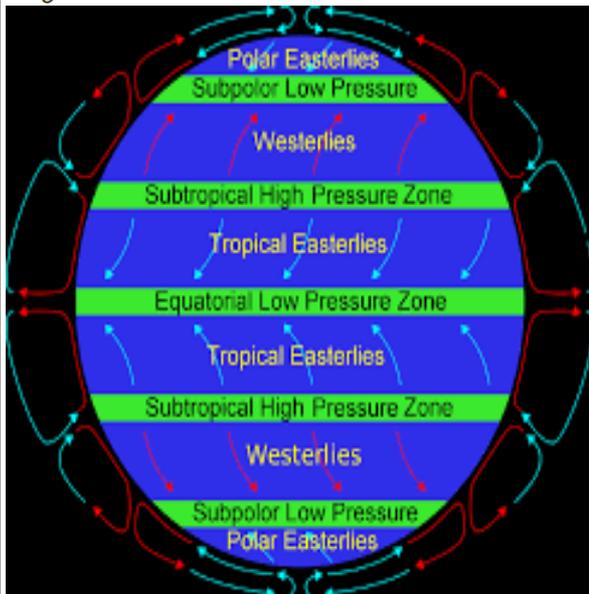
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- 1. Frontal Inversion
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- A. Only 1
  - B. Only 2
  - C. Both 1 and 2
  - D. Neither 1 nor 2

**Answer: C**

#### Explanation





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### Temperature Inversion

- It is a reversal of the normal behavior of temperature in the troposphere. Under this meteorological phenomenon a layer of warm air lies over the cold air layer.
- Frontal Inversion: When the warm and cold fronts meet, then the warm front rises up and being heavier the cold front sinks down. It results in formation of Frontal Inversion.
- Subsidence Inversion: When a widespread layer of air descends, it is compressed and heated by the resulting increase in atmospheric pressure, and as a result the lapse rate of temperature is reduced.

### CONCEPTUAL QUESTION

3. Chose the **about Natural Vegetation in the Boreal Climate:**

1. The predominant vegetation is evergreen coniferous forest.
2. The greatest single band of the coniferous forest is the taiga in Siberia.
3. The coniferous forest belts of Eurasia and North America are the one of richest sources of softwood in the world.

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**Answer: D**

### Explanation



### Siberian Vegetation

- The predominant vegetation is evergreen coniferous forest. The conifers, which require little moisture are best suited to this type of sub-Arctic climate. The greatest single band of the coniferous forest is the taiga (a Russian word for coniferous forest) in Siberia. The coniferous forest belts of Eurasia and North America are one of the richest sources of softwood. Their presence in pure stands and the existence of only a few species are a great advantage in commercial forest exploitation.

### Application Based Question

4. In the context of India, **which of the following is/are considered to be of practice(s) of eco-friendly agriculture?**

1. Crop diversification
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3. Tensiometer use
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Select the correct answer using the code given below:

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**Answer: D**

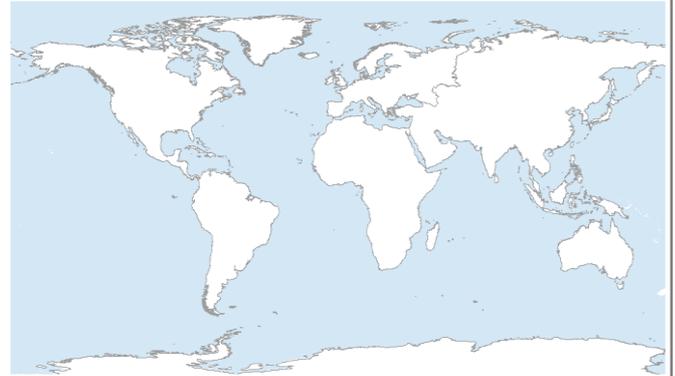
**Explanation**

- Crop diversification has proved to be of paramount importance in mitigating the environmental problems arising on account of monoculture. Inclusion of certain crops has been found to reduce some obnoxious weeds to considerable extent, thereby reducing the need of herbicides.
- Understanding of Soil Moisture - One could save huge quantity of water and energy by knowing when and how much water is required by a crop. Use of tensiometers (typically a sealed, water-filled tube with a ceramic porous cup and a vacuum gauge at the top) could be really helpful in providing estimates of soil moisture.
- Vertical Farming is an adoptable solution where land resource is very scarce and rampant urbanization puts a threat to land availability for agriculture. Vertical farming uses significantly less water and pesticides than traditional agricultural methods.

- A. Only 1
- B. Only 2
- C. **Both 1 and 2**
- D. Neither 1 nor 2

**Answer : C**

**Explanation**



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### CONCEPTUAL QUESTION

5. Choose the **correct statements**:

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