2025 Prelims Geography Report Card

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IAS Classes and Study Material

Total Questions = 12
Hits = 11
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PrepMate IAS

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q1. Consider the following pairs: Country Resource-rich in I. Botswana : Diamond II. Chile : Lithium III. Indonesia : Nickel In how many of the above rows is the given information correctly matched? a. Only one b. Only two c. All the three d. None **Correct Option: (c)**	Pair I is correct. **Geography, Page 335** ▪ Source of the Blue Nile river Katanga Plateau: ▪ One of the largest copper and diamond producing regions of Zaire and Zambia Drakensberg Range: ▪ Located in South Africa Pair II and III are correct. **Geography, Page 571**

CHAPTER 26 WORLD ECONOMIC AND SOCIAL GEOGRAPHY

MINERALS

Name	Leading country/other facts
Iron	▪ Producer: Australia, Brazil, China and India
Manganese	▪ Producer: South Africa ▪ Exporter: South Africa
Copper	▪ Chile
Bauxite	▪ Producer: Australia, China
Mica	▪ China, Russia
Tin	▪ Producer: China, Indonesia
Gold	▪ Producer: China, Australia, Russia
Silver	▪ Mexico, China, Peru
Lead	▪ Reserves: Australia ▪ Production: China
Zinc	▪ China
Nickel	▪ Indonesia, Philippines
Platinum	▪ South Africa, Russia
Cobalt	▪ Zaire
Diamond	▪ South Africa (Kimberley mines are the largest diamond mines in the world) ▪ Producer: Russia
Lithium	▪ Australia, Chile and China

September 2024 Edition, Page 130

10. Chile's Atacama salt flat sinking due to lithium mining: What a new study says

Introduction

According to a new study, Chile's Atacama salt flat is sinking at a rate of 1 to 2 centimetres per year due to lithium brine extraction — a process in which salt-rich water is pumped to the surface and into a series of evaporation ponds to eventually obtain lithium.

Prelims 2025 Questions	PrepMate IAS Notes - Miss
Q2. Consider the following countries: I. United Kingdom II. Denmark III. New Zealand IV. Australia V. Brazil How many of the above-countries have more than four time zones? [A] All the five [B] Only four [C] Only three [D] Only two **Correct Option: (a)**	**Explanation** **Country** — **No. of time zones** **Australia** — 9 **United Kingdom** — 9 **New Zealand** — 5 **Brazil** — 4 **Denmark** — 5

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q3. Consider the following statements: I. Anadyr in Siberia and Nome in Alaska are a few kilometers from each other, but when people are waking up and getting set for breakfast in these cities, it would be different days. II. When it is Monday in Anadyr, it is Tuesday in Nome. Which of the statements given above is/are correct? [A] I only [B] II only [C] Both I and II [D] Neither I nor II **Correct Option: (a)**	**Statement I is correct, and II is incorrect.** **Geography, Page 70** In other words, the International Date Line (IDL) is an imaginary line that runs mostly along the 180th meridian of longitude in the Pacific Ocean, from the North Pole to the South Pole. The line serves as a demarcation between two consecutive calendar days. When one crosses the IDL from west to east, one gains a day, and when one crosses the IDL from east to west, one loses a day.

The line was established by international agreement in 1884 at a conference held in Washington D.C. The Line is not a straight line, but rather zigzags around various island groups and territories in the Pacific Ocean in order to avoid splitting them into two different calendar days. For instance, the International Dateline zigzags from 180° meridian at the Bering Strait, Fiji and other islands so that it does not cross from them. If IDL in the mid pacific would have been straight, then it would have crossed from the centre of the islands located in Pacific Ocean and caused confusion of date in these islands. Moreover, in order to avoid confusion of date, some countries choose to observe the same calendar day across the entire country, regardless of where they fall on the line.

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q4. Consider the following statements: Statement I: Scientific studies suggest that shift is taking place in the Earth's rotation and axis. Statement II: Solar flares and associated coronal mass ejections bombarded the Earth's outermost atmosphere with tremendous amount of energy. Statement III: As the Earth's polar ice melts, the water tends to move towards the equator. Which one of the following is correct in respect of the above statements? a. Both Statements II and Statement III are correct and both of them explain Statement I b. Both Statement II and Statement III are correct but only one of them explains Statement I c. Only one of the Statements II and III is correct and that explains Statement I	Statement II: Solar flares and associated coronal mass ejections bombarded the Earth's outermost atmosphere with tremendous amount of energy. However, Solar flares affect Earth's magnetosphere and ionosphere, not the rotation or axis shift. Geography, Page 40 · **Solar Flares**: A Solar flare is a sudden, extreme brightening of a Sun region that lasts between minutes and hours. It occurs due to massive discharges of electromagnetic radiations from the atmosphere of the Sun. Flares arise when the Sun's powerful magnetic fields become excessively entangled. Like a rubber band snaps after it is too much twisted, the magnetic fields that become excessively entangled release energy when they break. The energy emitted by a solar flare is more than one million times as that of a volcanic eruption on Earth!

d. Neither Statement II nor Statement III is correct

Sol. (c) This question can be handled through conventional Geography. To answer this question, we need to determine accuracy of Statements II and III. As statement II is incorrect, the answer is option (c).

· **Solar Prominences**: A solar prominence is a big, luminous structure that protrudes from the Sun's surface. These protrusions originate in the photosphere and extend into the corona (the Sun's outer atmosphere). When stable, a prominence can persist for several months and extend thousands of kilometres into space.

Solar Prominence is composed of Plasma, a mixture of charged hydrogen and helium particles in a heated, gaseous state. Solar Prominence gets its meandering shape under the influence of the Sun's magnetic field.

The primary distinction between solar prominences and solar flares is that solar prominences do not pose a threat to Earth.

A solar prominence remains within the Sun's magnetic field, whereas a flare escapes the Sun's grasp and disperses waves throughout the solar system.

· **Solar Winds**: The Solar Winds are a constant flow of charged particles from the corona, the sun's outermost atmosphere. These charged particles travel through the solar system at speeds between 400 and 800 kilometers per second.

When the solar winds reach Earth, charged particles are deflected towards the poles (of Earth) by our planet's magnetic field. These charged particles also interact with the layer of upper atmosphere called ionosphere. The interaction of these particles with ionosphere produce aurora displays over polar regions.

So, Statement II is correct but doesnot explain Statement I.

Statement III: As the Earth's polar ice melts, the water tends to move towards the equator. Melting polar ice redistributes mass from the poles to lower latitudes (closer to the equator). This shift in mass affects Earth's moment of inertia, leading to changes in its rotation and axis — similar to a figure skater extending their arms.

	So, Statement III is correct and it explains Statement I. Thus, Only one of the Statements II and III is correct and that explains Statement I.

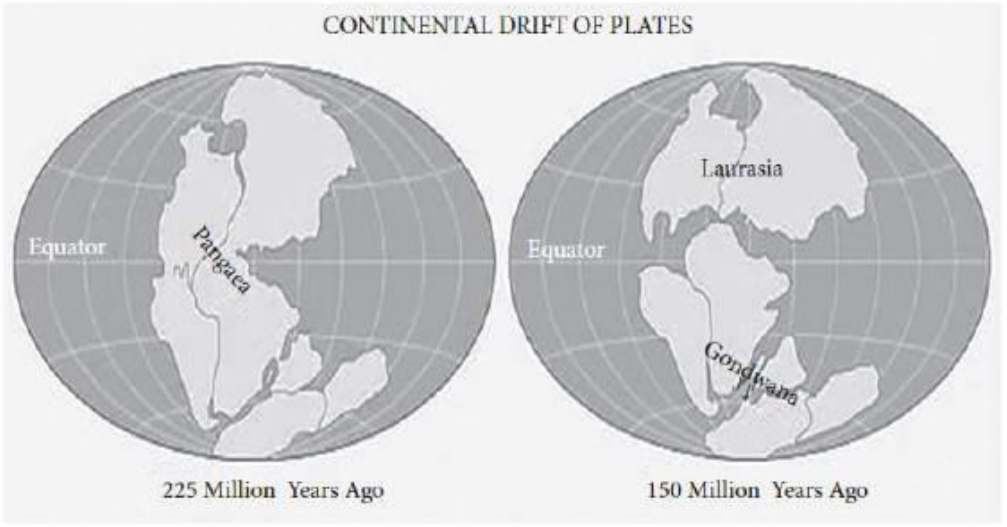
Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q5. Consider the following countries: 1. Bolivia 2. Brazil 3. Colombia 4. Ecuador 5. Paraguay 6. Venezuela Andes mountains pass through how many of the above countries? a. Only two b. Only three c. Only four d. Only five **Correct Option: (c)**	**Geography, Chapter 16 Continents, Page 328** **Mountains** **Name** / **Information** The Andes mountain system ▪ Second highest mountain system in the world after the Himalayas ▪ Part of seven countries: Venezuela, Colombia, Ecuador, Bolivia, Peru, Chile, and Argentina 328

<table>
<tr><th>Prelims 2025 Questions</th><th>PrepMate IAS Notes - Hits</th></tr>
<tr><td>Q6. Consider the following water bodies:
1. Lake Tanganyika
2. Lake Tonle Sap
3. Patos Lagoon
Through how many of them does the equator pass?
a. Only one
b. Only two
c. All the three
d. None

Correct Option: (d)</td><td>Geography, Chapter 16 Continents, Page 332

Lakes: South to North<table><tr><th>Name</th><th>Information</th></tr><tr><td>Lake Kariba</td><td>▪ Located on the Zambezi river in Zambia
▪ Famous for commercial fishing</td></tr><tr><td>Lake Victoria</td><td>▪ Largest lake of Africa
▪ Located in Uganda, Kenya, and Tanzania
▪ Source of the White Nile river
▪ Equator passes through this lake.</td></tr></table>
Lake Tanganyika is south of Lake Victoria.</td></tr>
</table>

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q7. Which of the following are the evidences of the phenomenon of continental drift? I. The belt of ancient rocks from Brazil coast matches with those from Western Africa. II. The gold deposits of Ghana are derived from the Brazil plateau when the two continents lay side by side. III. The Gondwana system of sediments from India is known to have its counterparts in six different landmasses of the Southern Hemisphere. Select the correct answer using the code given below. a. I and III only b. I and II only c. I, II and III d. II and III only **Correct Option: (c)**	**Statement III is correct.** Geography Notes, Chapter 6 Lithosphere, Page 119 **CONTINENTAL DRIFT THEORY ALFRED WEGENER, 1922** According to the Continental Drift Theory, in the beginning, a single landmass called Pangaea was surrounded by a huge ocean called Panthalassa. A sea named Tethys divided Pangaea into two huge landmasses: Laurasia in the north and Gondwanaland in the south. Laurasia consisted of the present continents of Asia, Europe, and North America. Gondwanaland consisted of the continents of Africa, South America, Antarctica, Australia, and the Indian subcontinent. According to Wegener, the single landmass began to break and the various parts formed drifted away from each other 200 million years ago.



Statements 1 and 2 are also correct.

	▪ **Similarity of physical features:** The bulging part of Brazil seems to fit into the Gulf of Guinea (part of Africa), suggesting that South America and Africa were part of a single landmass. ▪ Far landmasses such as Australia, India, and South Africa share similar rocks and plant species. ▪ The drift of continents is also proved by the fact that old magnetic rocks show different directions of magnetism compared to newly formed magnetic rocks.

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q8. Consider the following statements: Statements I: The amount of dust particles in the atmosphere is more in subtropical and temperate areas than in equatorial and polar regions. Statement II: Subtropical and temperate areas have less dry winds. Which one of the following is correct in respect of the above statements? a. Both Statement I and Statement II are correct and Statement II explains Statement I b. Both Statement I and Statement II are correct but Statement II does not explain Statement I c. Statement I is correct but Statement II is not correct d. Statement I is not correct but Statement II is correct **Correct Option: (c)**	Geography, Chapter 8 The Atmosphere, Page 169 **Dust Particles** The highest concentration of dust particles is in the subtropical and temperate regions. Within these regions, deserts have the highest concentration on account of negligible rainfall and dry winds. The concentration of dust particles is low in the equatorial regions because continuous rainfall makes dust particles to settle down on the surface of the Earth. Dust particles act as the nuclei/centre around which water vapour condense to form clouds. They originate from various sources, including soil, ash, sea salts, etc. The density of dust particles is high in the lower layers of the atmosphere.

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q9. Consider the following statements: Statement I: In January, in the Northern Hemisphere, the isotherms bend equatorward while crossing the landmasses, and poleward while crossing the oceans. Statement II: In January, the air over the oceans is warmer than that over the landmasses in the Northern Hemisphere. Which one of the following is correct in respect of the above statements? a. Both Statement I and Statement II are correct and Statement II explains Statement I b. Both Statement I and Statement II are correct but Statement II does not explain Statement I c. Statement I is correct but Statement II is not correct d. Statement I is not correct but Statement II is correct **Correct Option: (a)**	Statement I is correct. **Chapter 9 Insolation and Temperature, Page 180** **DISTRIBUTION OF TEMPERATURE** The distribution of temperature is shown on a map with the help of isotherms, which are imaginary lines joining places having the same temperature. They are generally parallel to the latitudes. However, there are deviations from the normal trend, especially in the months of January and July. Such deviations are larger in the northern hemisphere because of the presence of a large proportion of land. In the southern hemisphere, deviation is very less because of the presence of more water and lesser land. The deviation is less in the southern hemisphere because water has moderating influence on temperature. In the northern hemisphere, during the month of January, the isotherms shift northwards over the oceans and southwards over continents; while in July, isotherms shift southwards over the oceans and northwards over continents. **Statement II is also correct and is explanation of Statement I.** **Chapter 10 Air Circulation and Winds, Page 204**

Monsoon

Monsoon refers to the "seasonal reversal in the direction of winds". In other words, winds that change their direction with the change in seasons are called Monsoon. Monsoon winds arise on account of differential heating of land and water.

Differential heating of land and water arises because the specific heat capacity of water is higher than the specific heat capacity of land. Thus, more heat is required by water, as compared to the heat required by land to raise its temperature. Also, once heated, water takes longer time to release heat. Thus, the variability of temperature is higher on land than on a waterbody.

In summers, the temperature on land is higher than the temperature at sea; thus, a low-pressure belt emerges over land and winds blow from sea to land. Consequently, moisture-laden winds blow from sea towards land and thus bring rainfall over land.

In winters, land is colder than sea. A low-pressure belt emerges over sea and thus winds blow from land to sea. These winds are dry and thus do not bring rainfall over land or sea.

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q10. Consider the following statements: Statement I: In the context of effect of water on rocks, chalk is known as a very permeable rock whereas clay is known as quite an impermeable or least permeable rock. Statement II: Chalk is porous and hence can absorb water. Statement III: Clay is not at all porous. Which one of the following is correct in respect of the above statements? a. Both Statement II and Statement III are correct and both of them explain Statement I b. Both Statement II and Statement III are correct but only one of them explains Statement I c. Only one of the Statements II and III is correct and that explains Statement I d. Neither Statement II nor Statement III is correct	Statement II is correct. It is a commonly known fact. We have seen in our childhood that chalk is using for blotting purposes. Statement III is incorrect. It is incorrect to say that clay is not at all porous. If clay would not at all been porous, then black soil made of it would not swell. **Geography, Chapter 20, Page 439** The black soils are generally clayey, deep, and impermeable. These soils swell and become sticky when wet and shrink when dried. So during the dry season, the soil develops wide cracks. Thus, there occurs a kind of "self-ploughing". The black soil absorbs moisture, which evaporates from the soil at a very low rate. Because of this character of slow absorption and loss of moisture, the black soil retains moisture for a very long time. This moisture helps crops, especially the rain-fed ones, to sustain even during the dry season.

Correct Option: (c)	

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q11. Consider the following statements: I. Without the atmosphere, temperature would be well below freezing point everywhere on the Earth's surface. II. Heat absorbed and trapped by the atmosphere maintains our planet's average temperature. III. Atmosphere's gases, like carbon dioxide, are particularly good at absorbing and trapping radiation. Which of the statements given above are correct? a. I and III only b. I and II only c. I, II and III d. II and III only **Correct Option: (c)**	Statement I is incorrect. Atmosphere has moderating effect on temperature. On account of atmosphere, the earth does not heat up and cools down gradually. In case the earth does not have temperature, then it will heat up as well as cools down rapidly. The side facing the Sun will be very hot and the other side will be very cold. This can be implied from the Mercury, which has no atmosphere and Mars, has very thin atmosphere. **Geography Notes, Chapter 2 Solar System, Page 43** **1. Mercury** • **No atmosphere** - It is the smallest planet in the solar system. Thus, this planet has the weakest gravitational pull among all the planets. Due to weak gravitational pull, this planet does not have atmosphere. As there is no atmosphere, this planet is characterized by highest diurnal range of temperature (the difference between the maximum and minimum temperature of the day). Statements II and III are correct. **Geography Notes, Page 180**

HEAT BUDGET OF THE EARTH

The Earth receives all its heat in the form of insolation from the Sun. The heat received by the Earth in the form of insolation is reflected back in the form of terrestrial radiation.

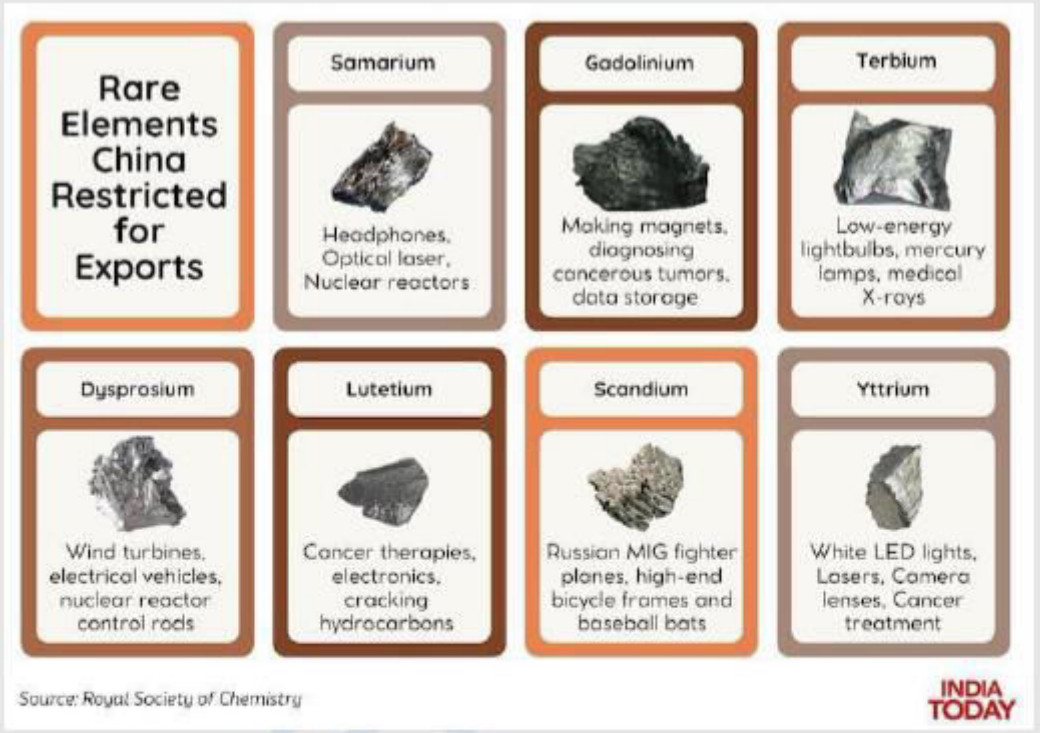
Of the 100 insolation units received from the Sun, 35 units are reflected back to space. The remaining 65 units are absorbed—14 units within the atmosphere and 51 units by the Earth's surface. Of the 35 units reflected back to space, 27 units are reflected back from the clouds.

The Earth radiates back 51 units in the form of terrestrial radiation. Of these 51 units, 17 units are directly radiated back to the space and the remaining 34 units are absorbed (19 through latent heat of condensation, 9 via convection, and 6 on account of direct contact) by the atmosphere.

The atmosphere radiates back 48 units (34 units received from the Earth and 14 units directly absorbed from insolation).

Thus, there is continuous inflow and outflow of heat on the Earth. Global warming occurs on account of increasing concentration of greenhouse gases such as CO_2, which trap the terrestrial radiation and prevent it from going outside into the space.

Prelims 2025 Questions	PrepMate IAS Notes - Hits
Q12. Consider the following statements: Statement I: Some rare earth elements are used in the manufacture of flat television screens and computer monitors. Statement II Some rare earth elements have phosphorescent properties. Which one of the following is correct in respect of the above statements: a. Both statement I and statement II are correct and statement II explains statement I b. Both statement I and Statement II are correct but statement II does not explain statement I c. Statement I is correct but statement II is not correct d. Statement I is not correct but statement II is correct. **Correct Option: (a)**	**May 2025 Edition, Page 57** These elements are crucial for manufacturing high-value goods, including in the fields of defence and clean energy, as well as everyday items like smartphones and electronic displays. Since the 1990s, China has held an unrivalled dominance over rare earths, supplying 85 to 95 per cent of the world's demand.



What are rare earths?

Rare Earth Elements or Rare Earth Metals are a set of 17 chemical elements in the periodic table — cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y). All have similar chemical properties and appear silver-coloured.

Geography, Page 523

Detailed Uses

Cerium, lanthanum, and neodymium have a multitude of applications. They serve as valuable glass additives in optical lenses and display screens, act as catalysts in automotive systems to reduce sulfur dioxide emissions, and find use in multilayer capacitors. When combined with yttrium, they become essential components in magnesium, aluminum, and hydrogen storage alloys. Mischmetal, an alloy of cerium with small quantities of other rare earth metals, is employed in various applications, including lighter flints, desulfurization in steel and foundry processes, and, when blended with lanthanum alloys, in batteries and hydrogen storage systems designed for electronics and hybrid vehicles. Cerium oxide plays a pivotal role in the glass polishing industry.

Lanthanum oxide and neodymium compounds are integral to the production of specialized glass. Lanthanum is employed in X-ray films as phosphors, while yttrium contributes to advanced ceramics, such as nitrides and Y-stabilized ceramics. Gadolinium is a key component in magnet alloys, while yttrium, europium, and terbium function as phosphors in computer and TV displays. These elements, in conjunction with lanthanum, cerium, and gadolinium, also serve as phosphors in fluorescent and halogen lamps.