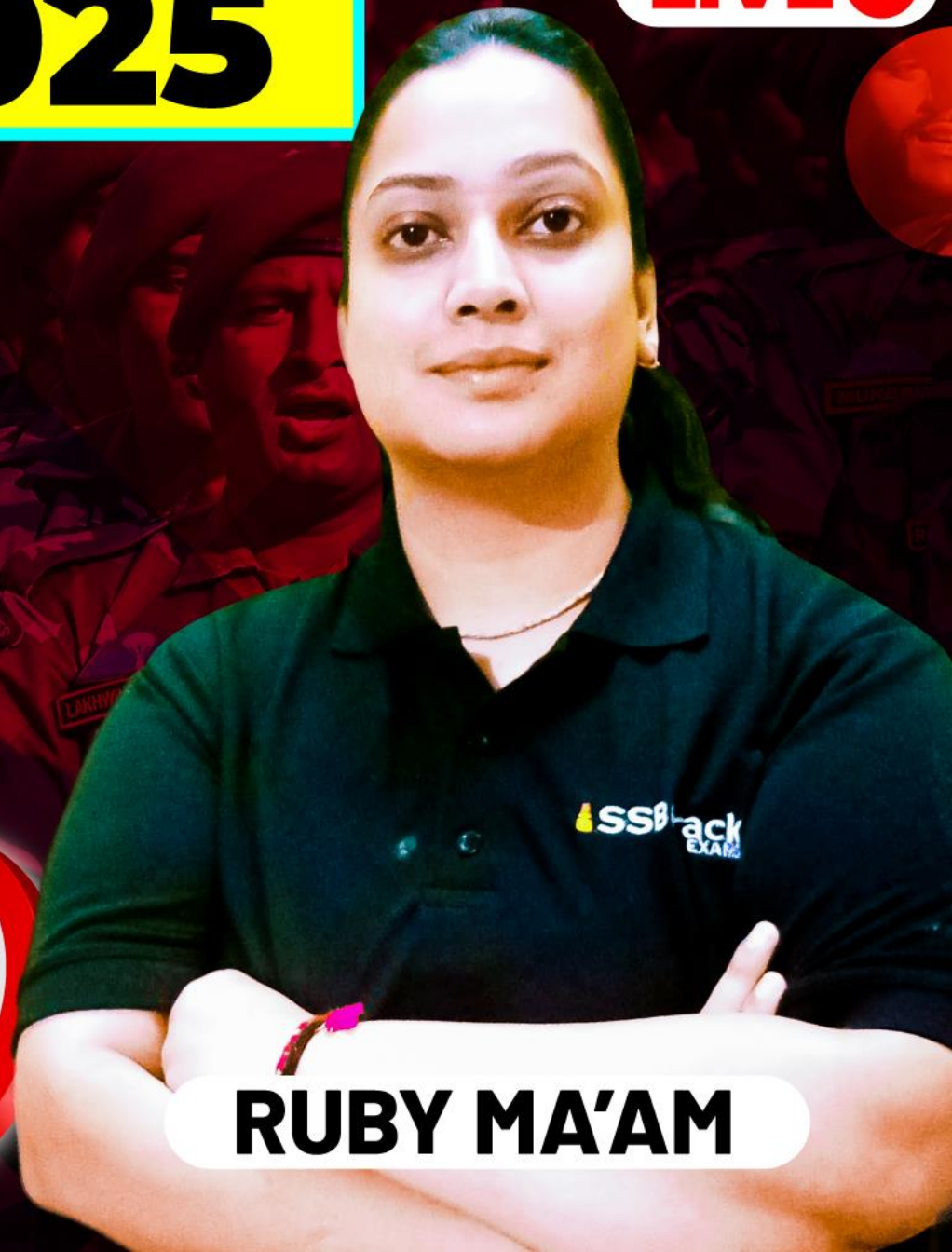
NDA-CDS 1 2025

LIVE

GK

PHYSICAL GEOGRAPHY

CLASS 2



RUBY MA'AM

SSBCrack EXAMS

25 Sep 2024 Live Classes Schedule

8:00AM	25 SEP 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	25 SEP 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

NDA 1 2025 LIVE CLASSES

11:30AM	GK - PHYSICAL GEOGRAPHY - CLASS 2	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 2	SHIVANGI MA'AM
4:00PM	MATHS - QUADRATIC EQUATIONS - CLASS 2	NAVJYOTI SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 1	ANURADHA MA'AM

CDS 1 2025 LIVE CLASSES

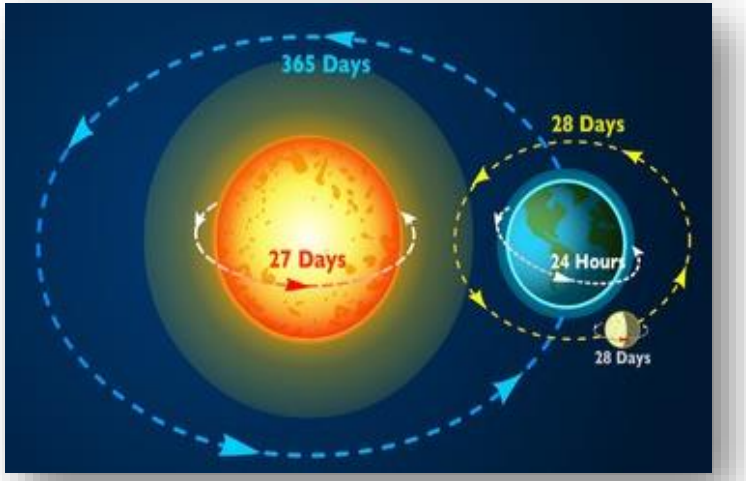
11:30AM	GK - PHYSICAL GEOGRAPHY - CLASS 2	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 2	SHIVANGI MA'AM
2:30PM	MATHS - PERCENTAGE - CLASS 2	NAVJYOTI SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 1	ANURADHA MA'AM

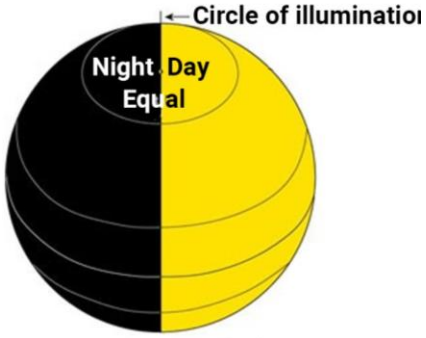
AFCAT 1 2025 LIVE CLASSES

10:00AM	REASONING - VERBAL CLASSIFICATION	RUBY MA'AM
2:30PM	MATHS - PERCENTAGE - CLASS 1	NAVJYOTI SIR
4:00PM	STATIC GK - DEFENCE EXERCISE	DIVYANSHU SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 1	ANURADHA MA'AM

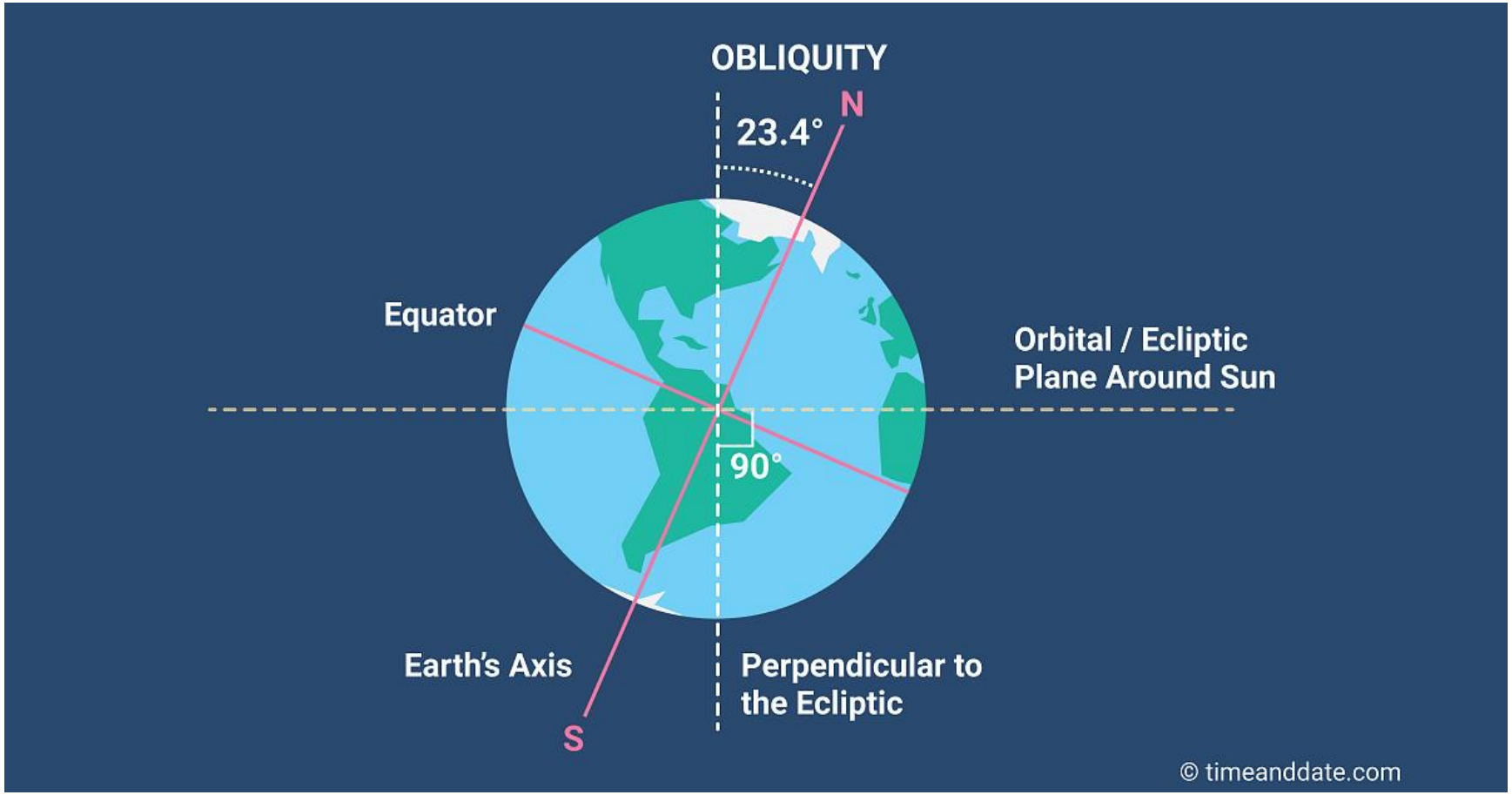
Rotation Of Earth

Earth Rotates Along Its Axis From **West To East.** It Takes Approximately **24 Hrs** To Complete On Rotation. **Days And Nights** Occur Due To The Rotation Of The Earth**.** The **Circle That Divides** The Day From Night On The Globe Is Called The **Circle Of Illumination**

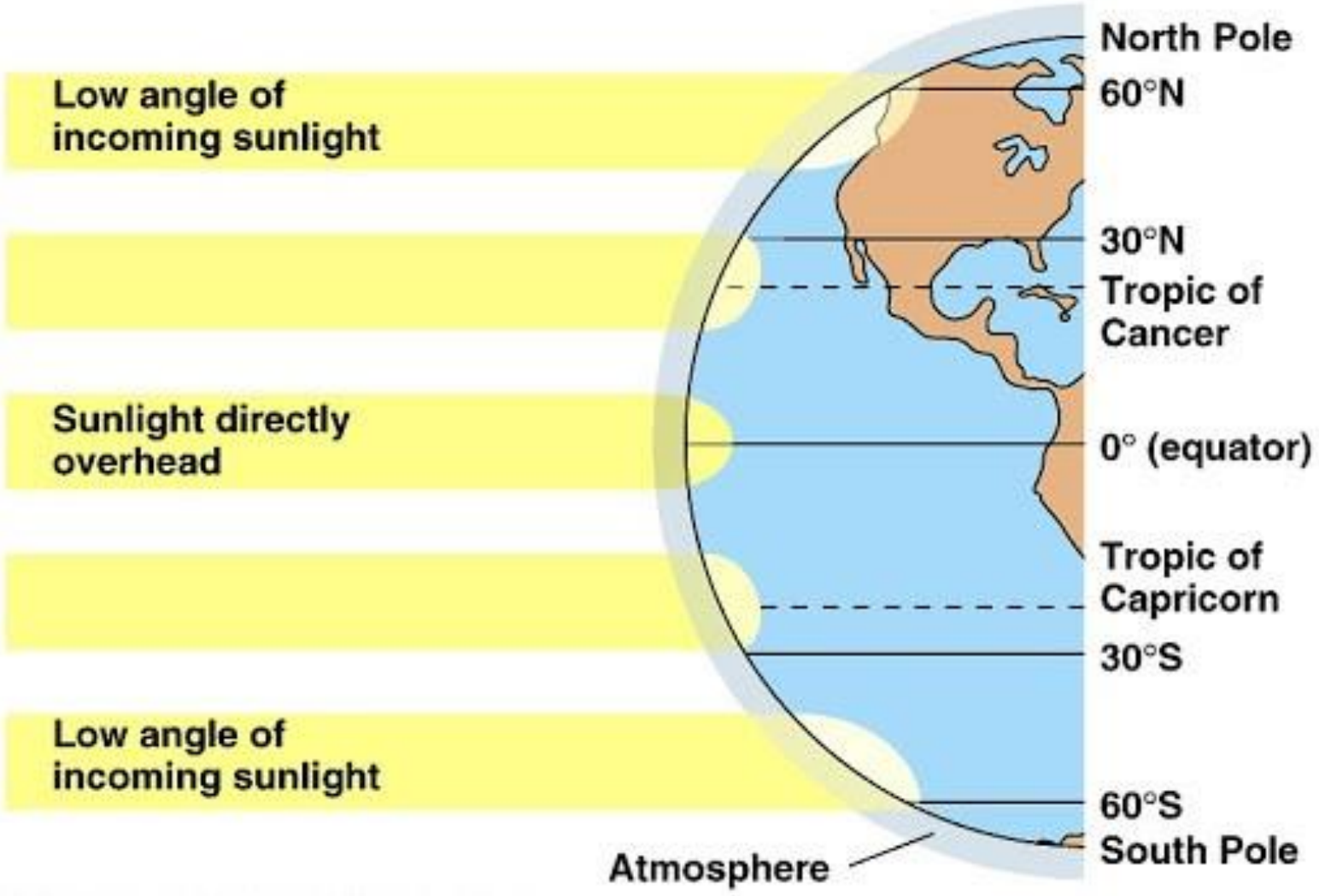




Rotation Of Earth

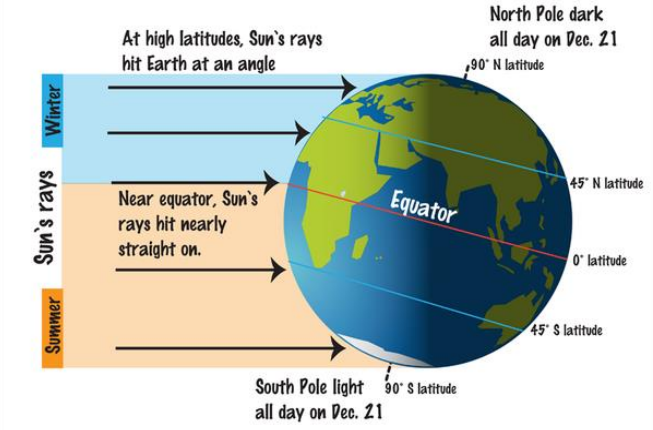


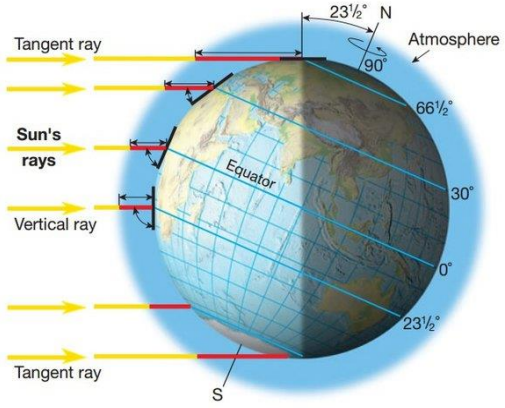
Why Temperature Falls With Increasing Latitude



Why Temperature Falls With Increasing Latitude

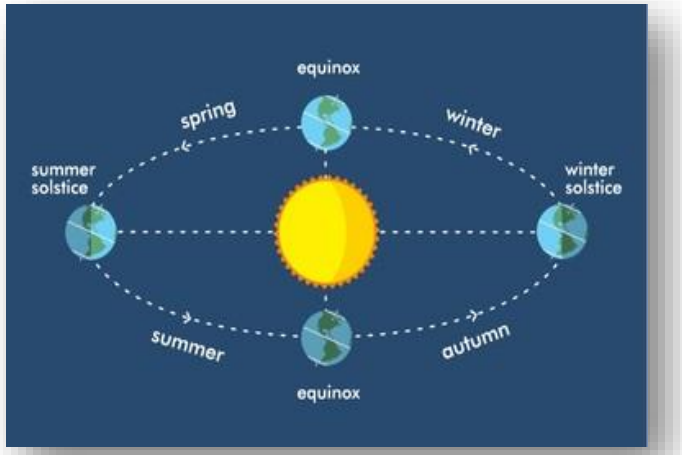
The **Spherical (Geoid) Shape Of The Earth** And The Position Of The Sun Is The Main Reason Behind It. Because The Energy Received Per Unit Area Decreases From the Equator To the Poles. The Equator Receives Direct Sunlight While Poles Receive Slant Or Oblique Rays Of The Sun.





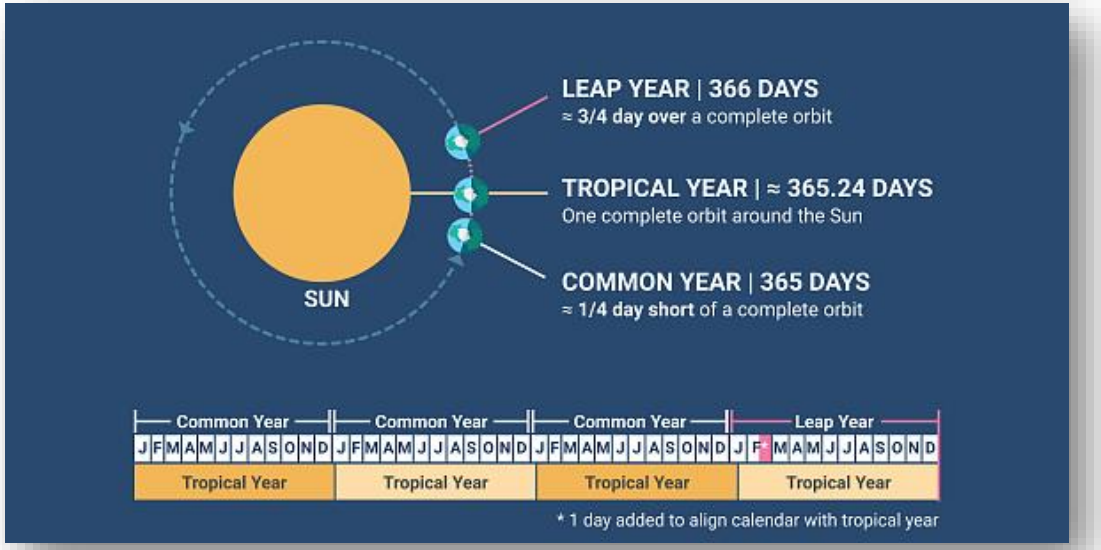
Revolution

The Second Motion Of The Earth Around The **Sun** In Its Orbit Is Called **Revolution.** It Takes **365¼ Days (One Year)** To Revolve Around The Sun. **Six Hours** Saved **Every Year** Are Added To Make One **Day (24 Hours)** Over A Span Of **Four Years.**

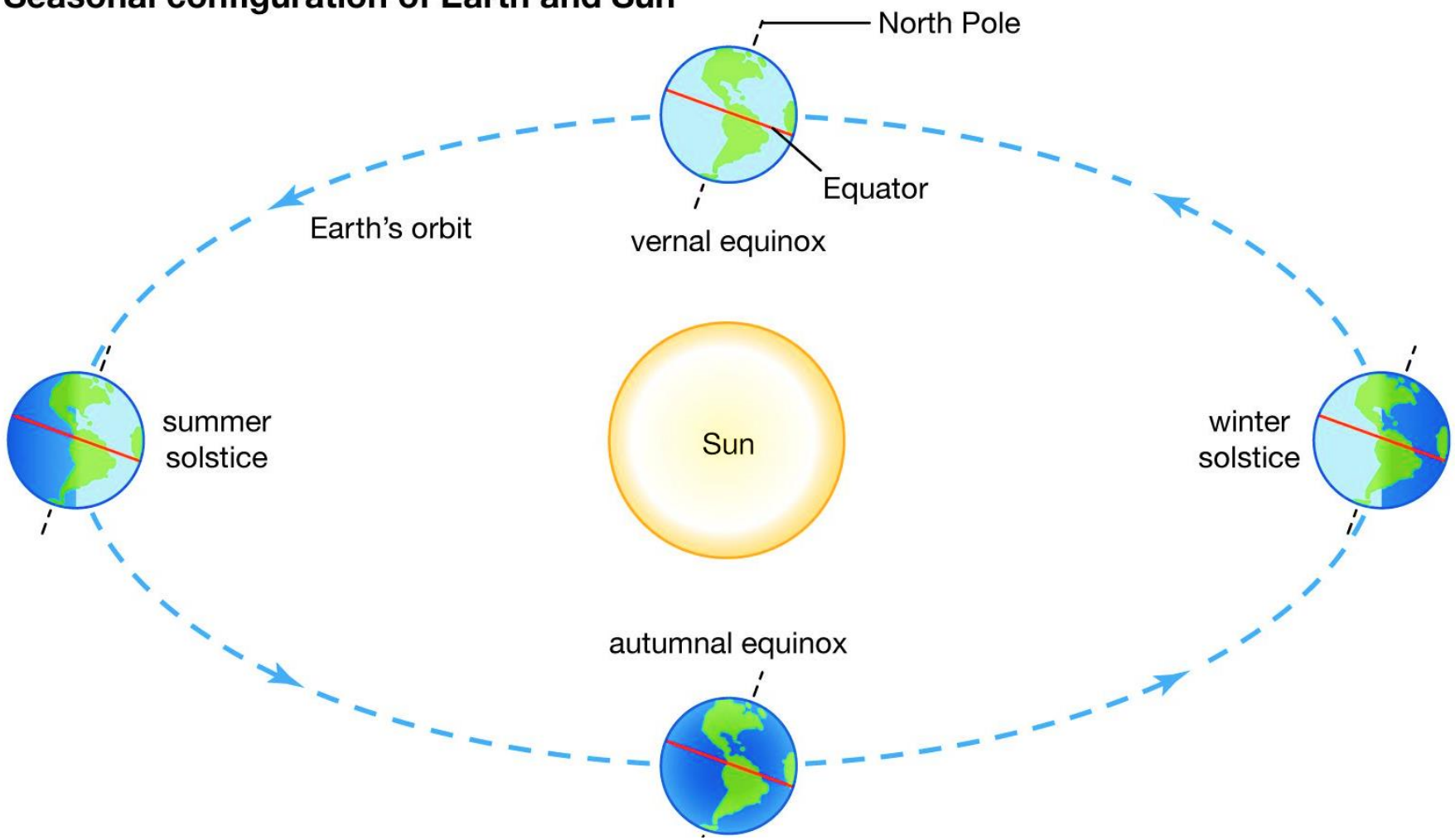


Revolution

This Surplus Day Is Added To The Month Of **February**. Thus, **Every Fourth Year**, **February** Is Of **29 Days** Instead Of 28 Days. Such A Year With **366 Days** Is Called A **Leap Year.**

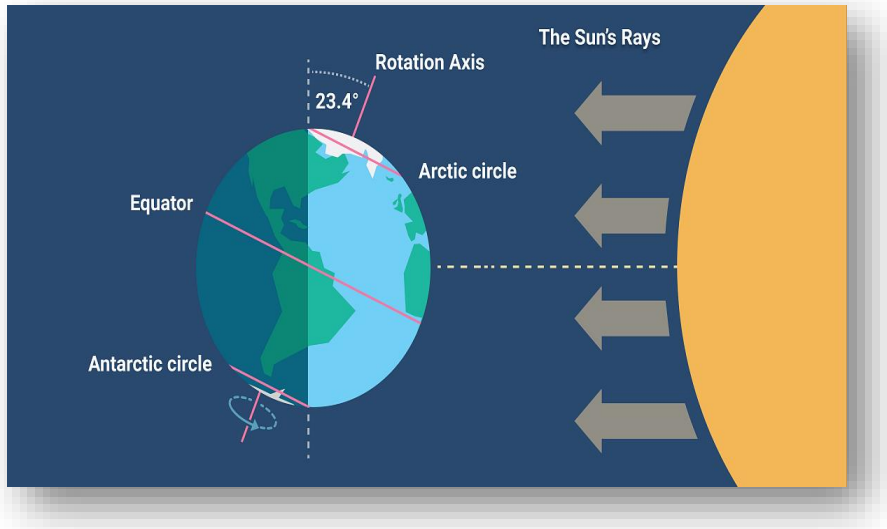


Seasonal configuration of Earth and Sun

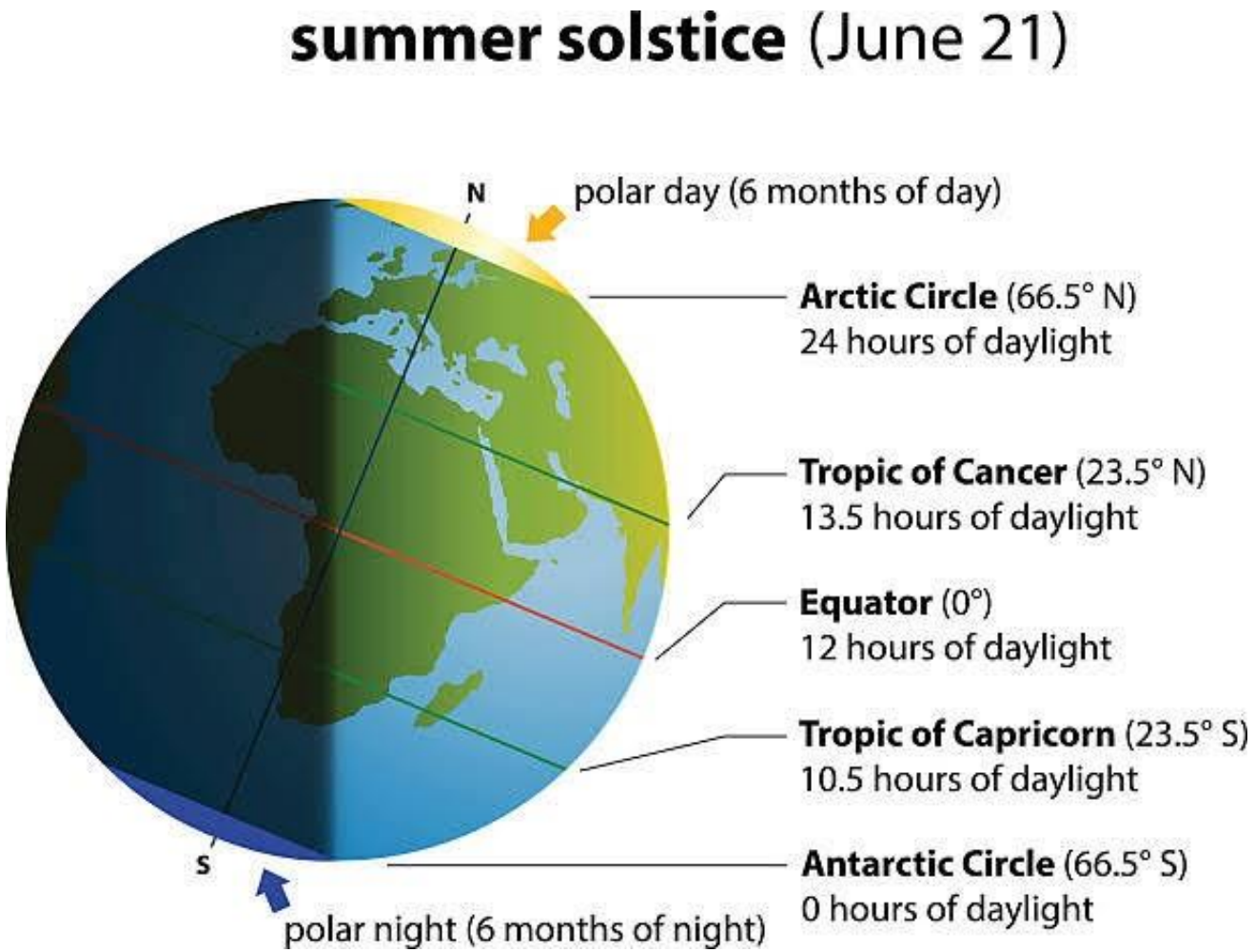


Summer Solstice

On **21st June**, The **Northern Hemisphere** Is Tilted Towards The Sun. The Rays Of The Sun Fall Directly On The **Tropic Of Cancer**. As A Result, These Areas Receive More Heat. The Areas Near The Poles Receive Less Heat As The Rays Of The Sun Are Slanting.

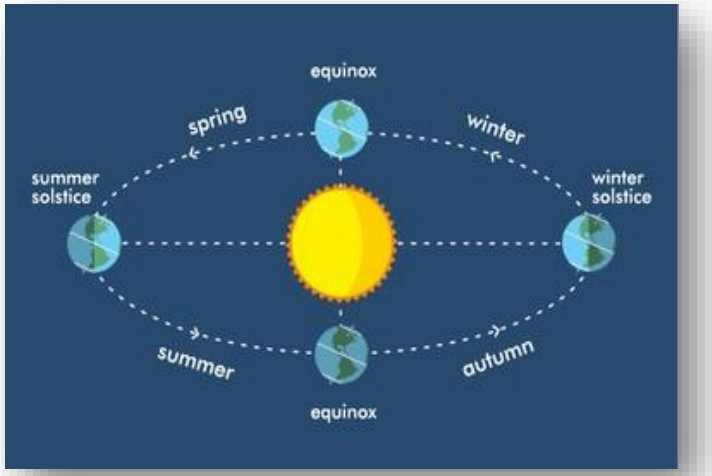


Summer Solstice



Summer Solstice

The North Pole Is Inclined Towards The Sun And The Places Beyond The **Arctic Circle** Experience **Continuous Daylight** For About **Six Months**. Since A Large Portion Of The Northern Hemisphere Is Getting Light From The Sun, It Is **Summer** In The Regions **North Of The Equator**.



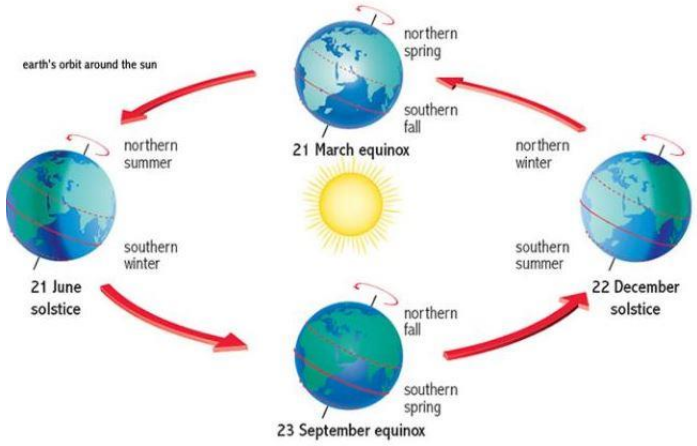
Summer Solstice

The **Longest Day And The Shortest Night** At These Places Occur On **21st June**.

At This Time In The **Southern Hemisphere,** All These Conditions Are Reversed.

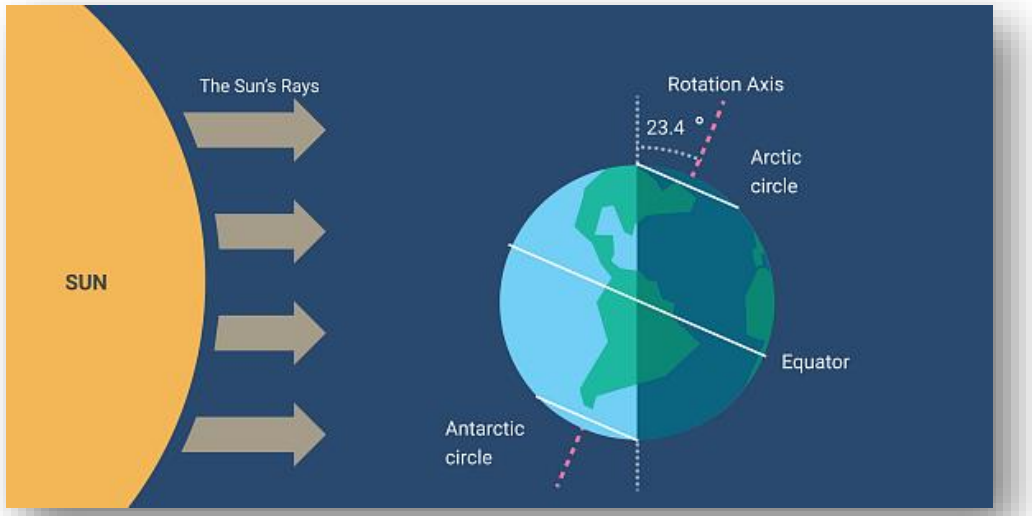
It Is **Winter Season** There. The Nights Are Longer Than The Days. This Position

Of The Earth Is Called The **Summer Solstice**.



Winter Solstice

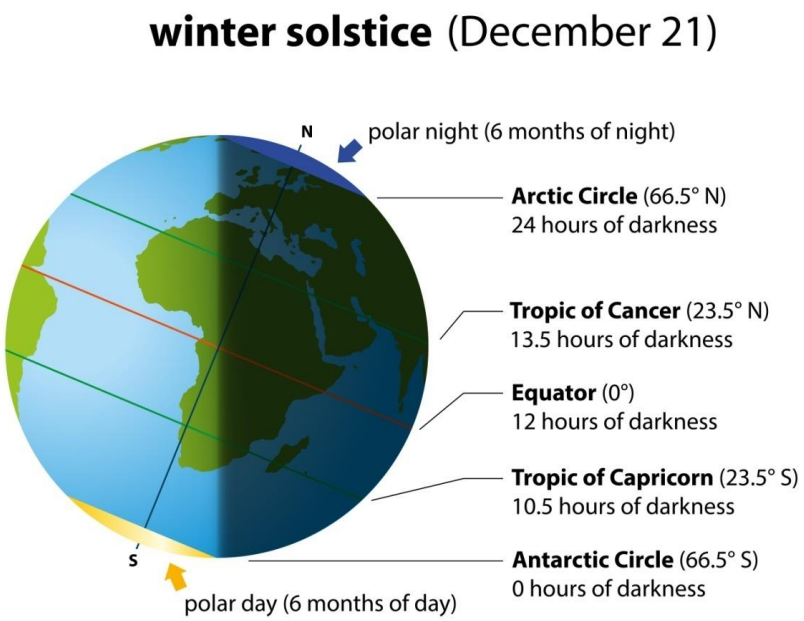
On **22nd December**, The **Tropic Of Capricorn** Receives Direct Rays Of The Sun As The **South Pole Tilts Towards It**. As The Sun's Rays Fall Vertically At The **Tropic Of Capricorn (23½° S),** A Larger Portion Of The Southern Hemisphere Gets Light.



Winter Solstice

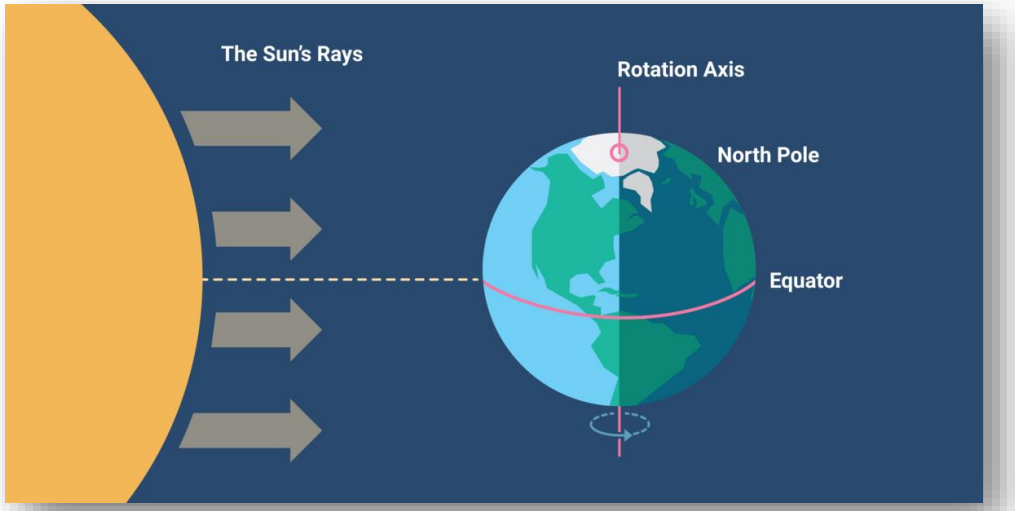
Due To This Reason, It Is **Summer In The Southern Hemisphere** With **Longer Days** And **Shorter Nights**. The Reverse Happens In The **Northern Hemisphere.**

This Position Of The Earth Is Called The **Winter Solstice.**



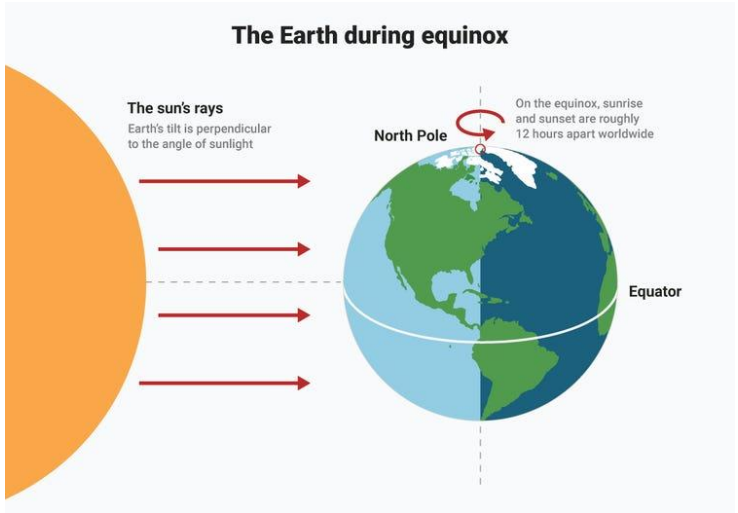
Equinox

On **21st March** And **September 23rd**, **Direct Rays Of The Sun** Fall On The **Equator.** At This Position, Neither Of The Poles Is Tilted Towards The Sun and The Whole of Earth Experiences **Equal Days** And **Equal Nights**. This Is Called An **Equinox**



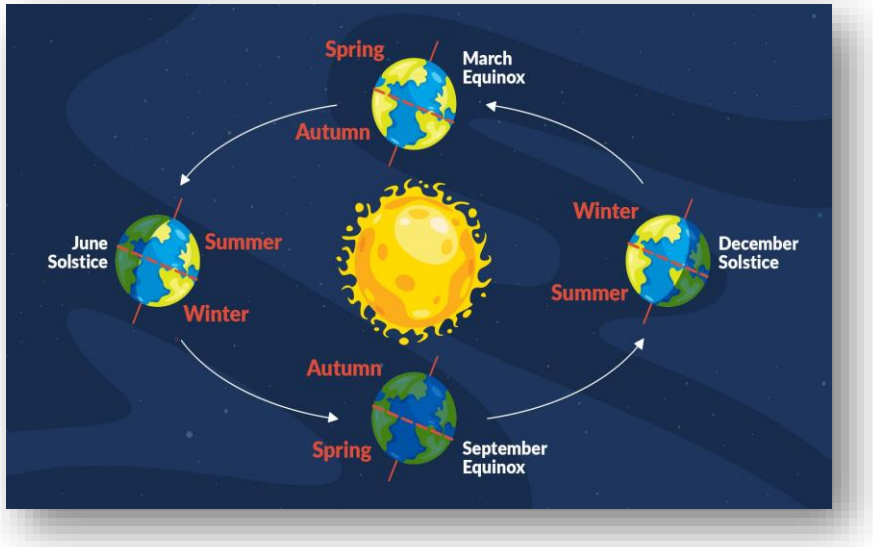
Equinox

On **23rd September**, It Is **Autumn Season** [The season After Summer And Before The Beginning Of Winter] In The **Northern Hemisphere** And **Spring Season** [The season After Winter And Before The Beginning Of Summer] In **The Southern Hemisphere**

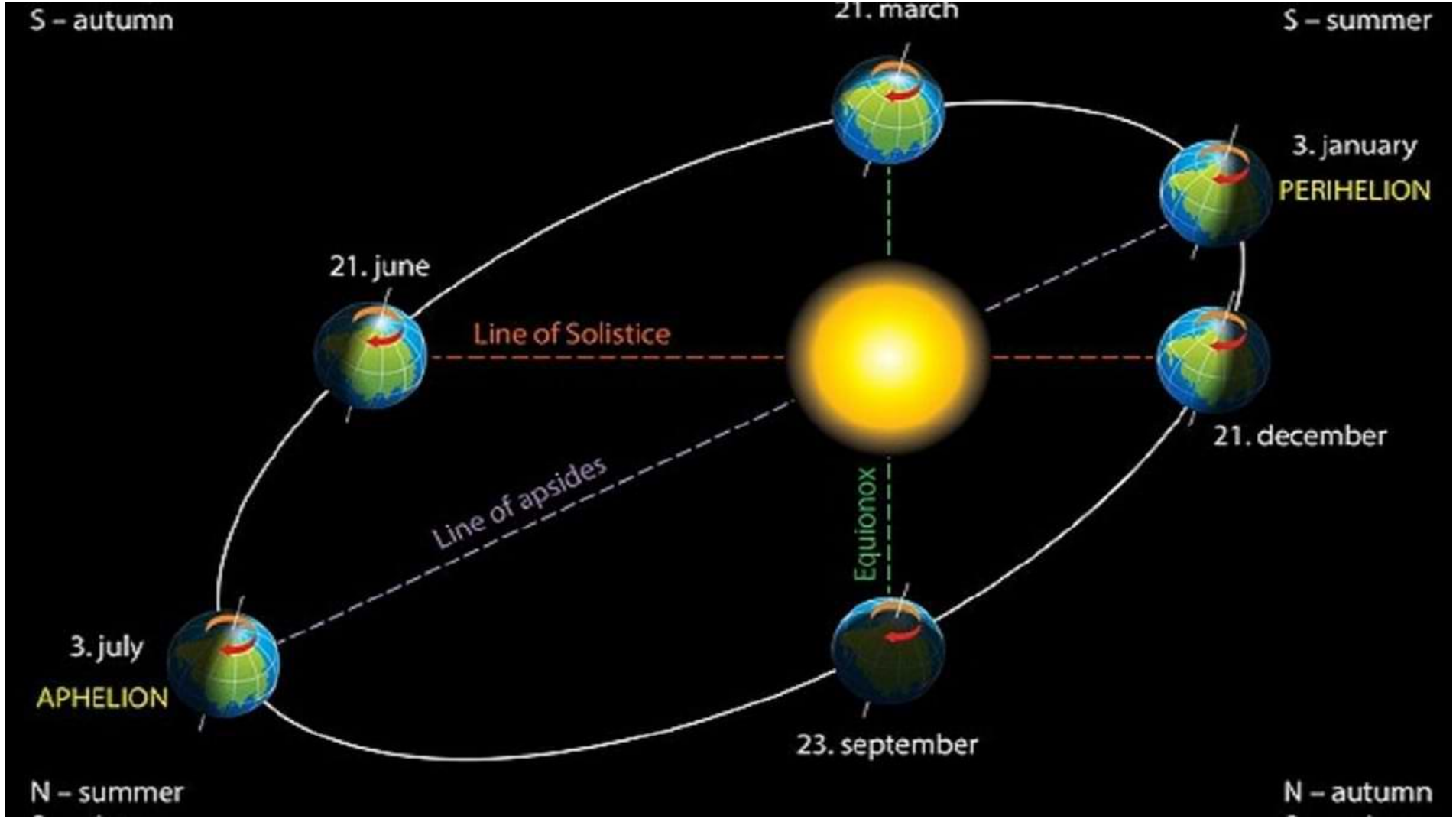


Equinox

The Opposite Is The Case On **21st March** When It Is **Spring** In The **Northern Hemisphere** And **Autumn** In The **Southern Hemisphere**. Thus, There Are Days And Nights And Changes In The Seasons Because Of The **Rotation** And **Revolution** Of The Earth Respectively.

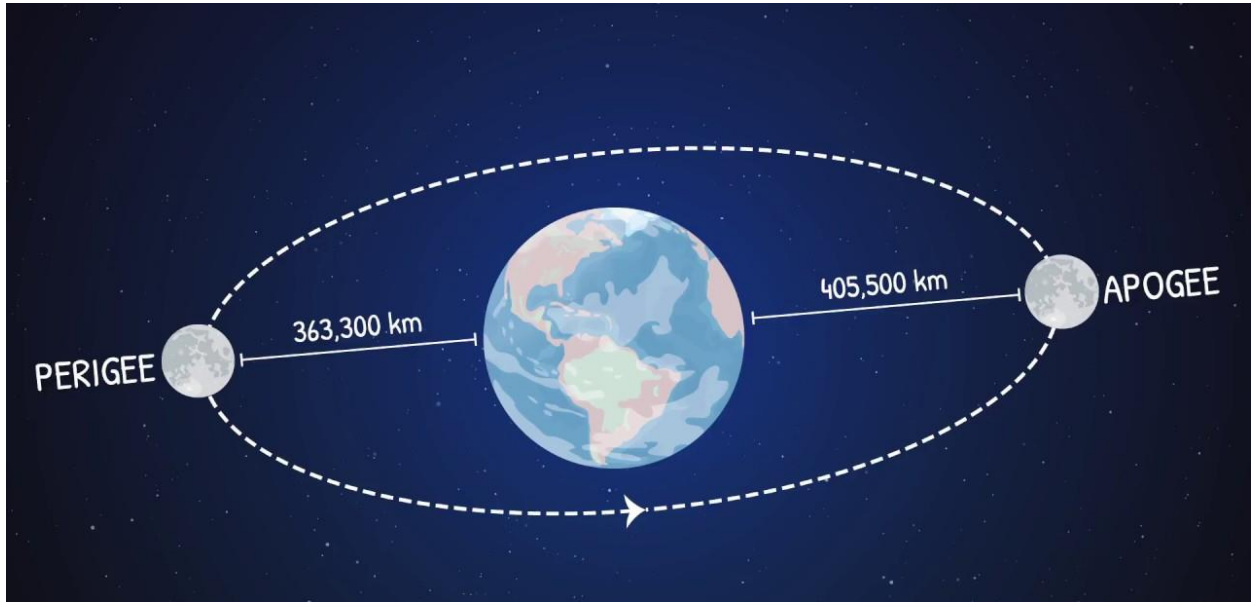


Aphelion & Perihelion



Apogee & Perigee

The **Moon's Orbit** Around Earth Is **Elliptical.** The Point Of The Orbit **Closest To Earth** Is Called **Perigee**, While The Point **Farthest From Earth** Is Known As **Apogee.**



Sources Of Information About The Interior

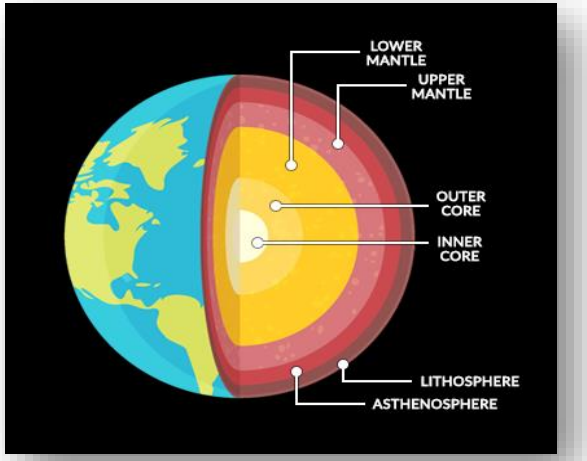
The **Earth's Radius** Is **6,370 Km**. No One Can Reach The Centre Of The Earth And Make Observations Or Collect Samples Of The Material.

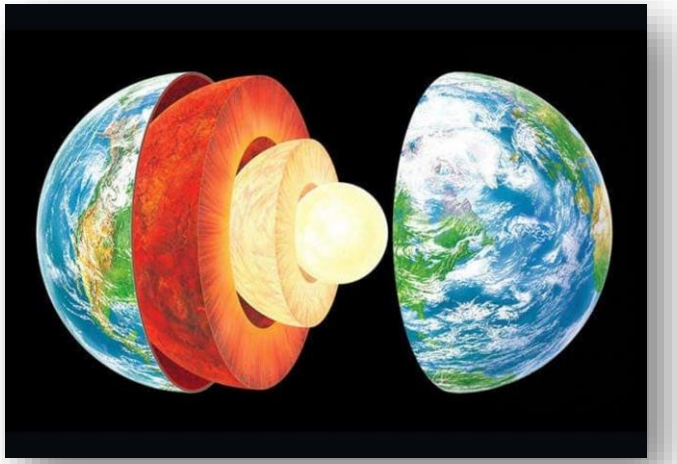
Direct Sources	Indirect Sources
Volcanic eruption	**Seismic Activity**
Drilling	**Meteorite**
Mining	**Gravitational Force, Magnetic Field**

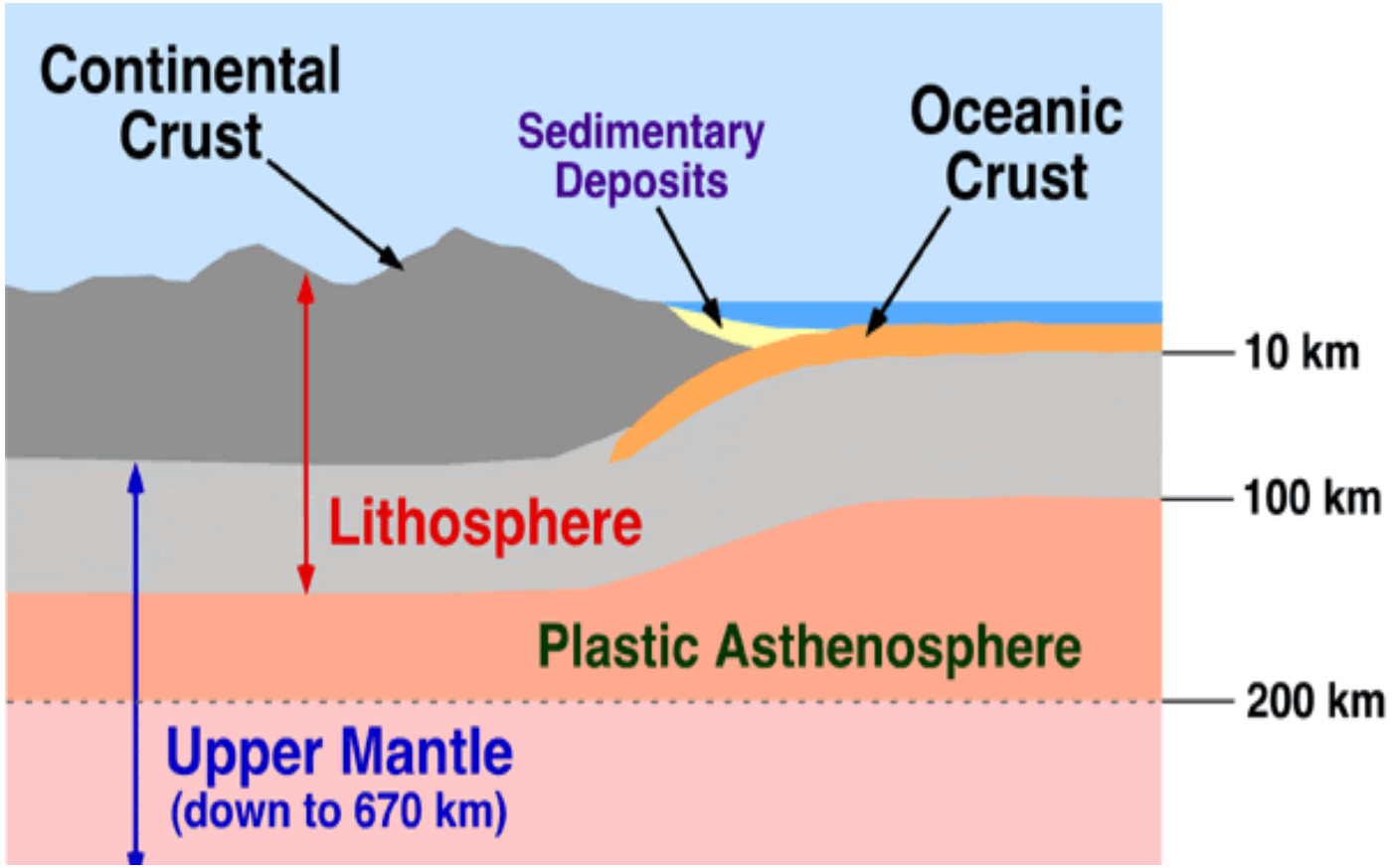
The Crust

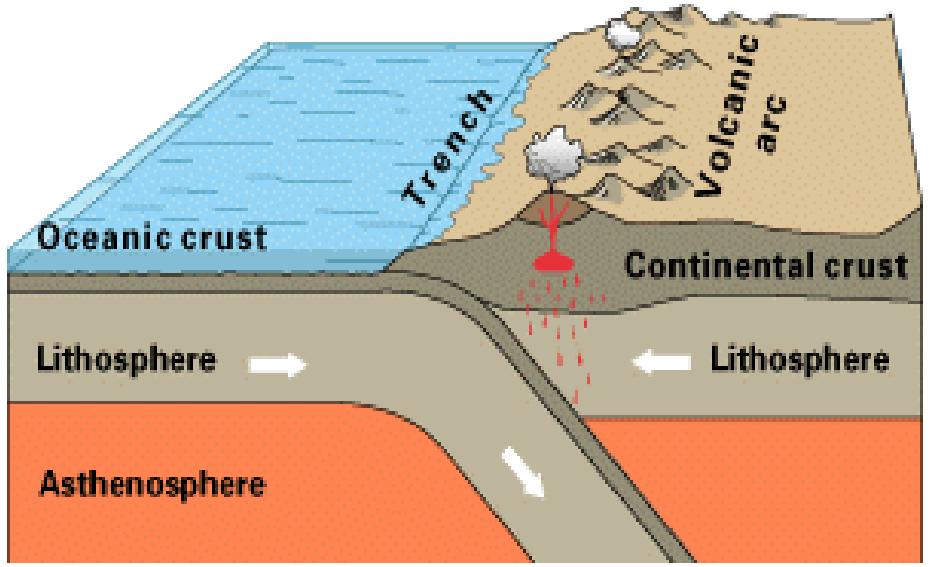
It Is The **Outermost Solid Part** Of The **Earth**. It Is **Brittle In Nature**. The **Thickness** Of The Crust Varies Under The **Oceanic And Continental Areas.**

Oceanic Crust Is Thinner As Compared To The **Continental Crust**. The **Mean Thickness** Of the **Oceanic Crust** Is **5 Km** While the **Continental** Is Around **30 Km.**

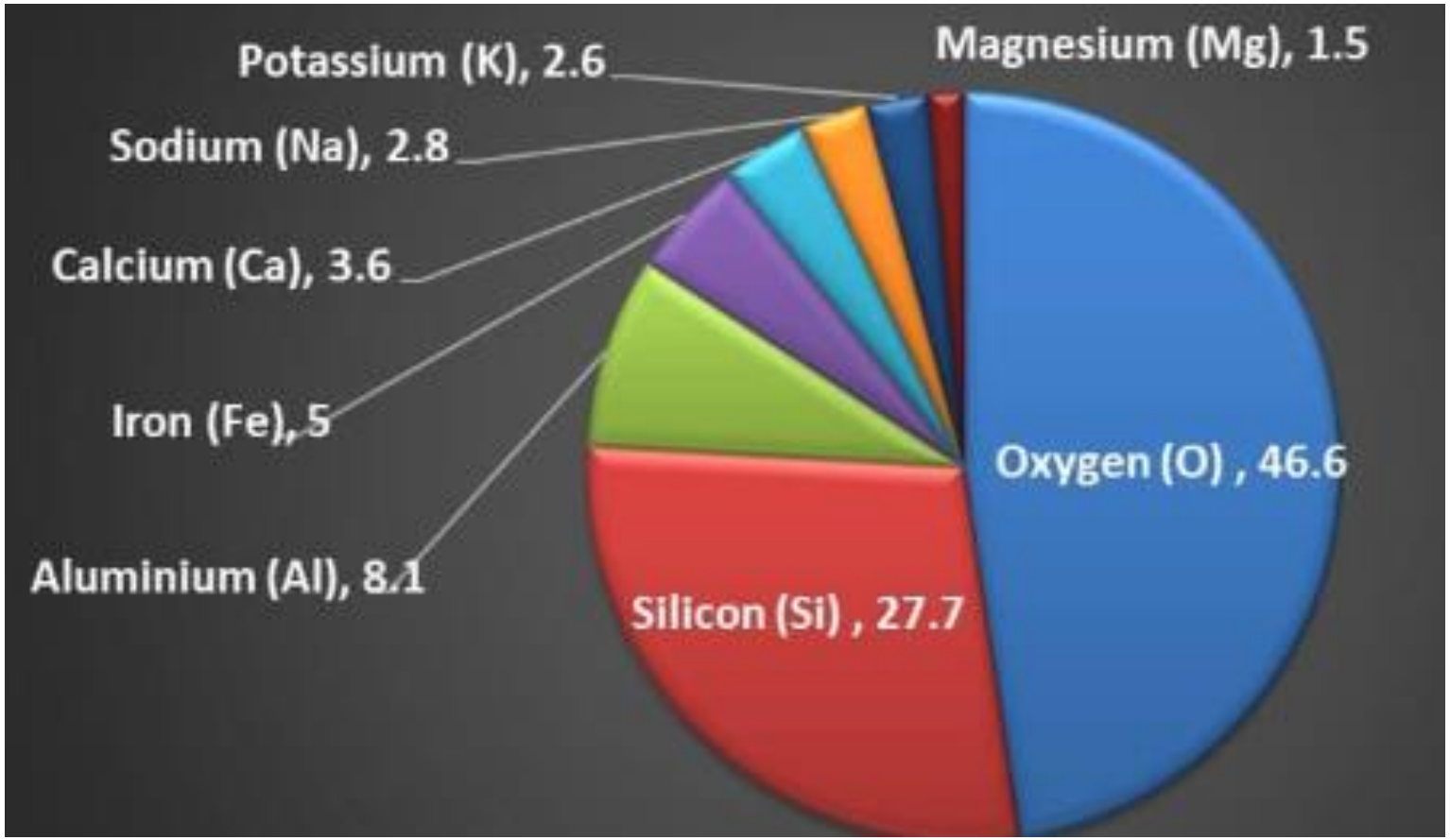





Continental Crust
Sedimentary Deposits
Oceanic Crust
10 km
Lithosphere
100 km
Plastic Asthenosphere
200 km
Upper Mantle
(down to 670 km)

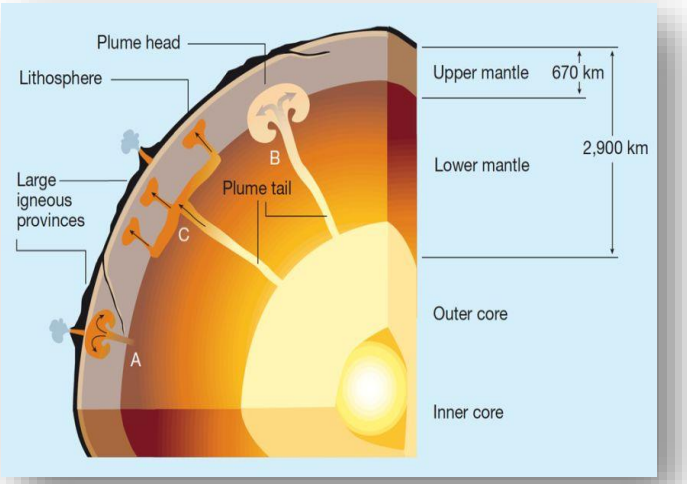

Trench
Volcanic arc
Oceanic crust
Continental crust
Lithosphere
Lithosphere
Asthenosphere

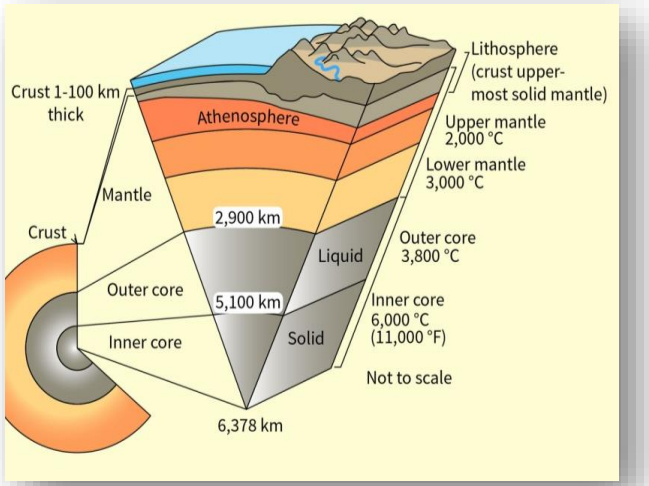
% Abundance Of Elements In Earths Crust



The Mantle

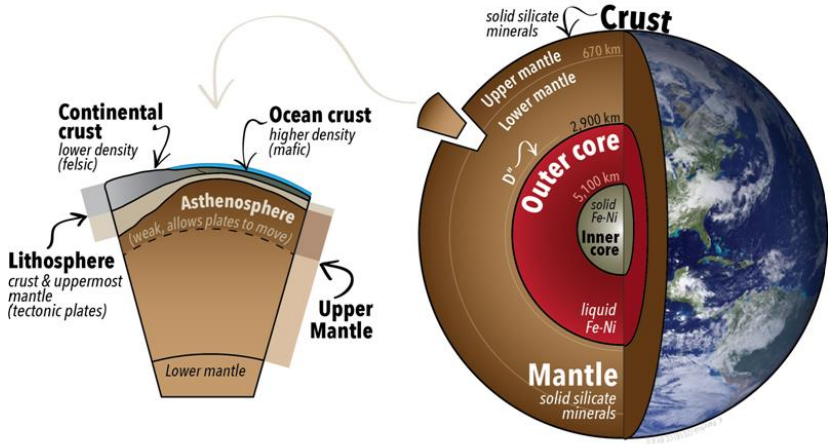
It Is The Portion Of The Interior **Beyond The Crust**. It Extends From **Moho's Discontinuity** To A Depth Of **2,900 Km**. The **Upper Portion** Of The **Mantle** Is Called **Asthenosphere**. It Is Considered To Be Extending Up to **400 Km**. It Is The Main Source Of **Magma**. It Covers **83 % Volume** & **67% Mass Of The Earth.**





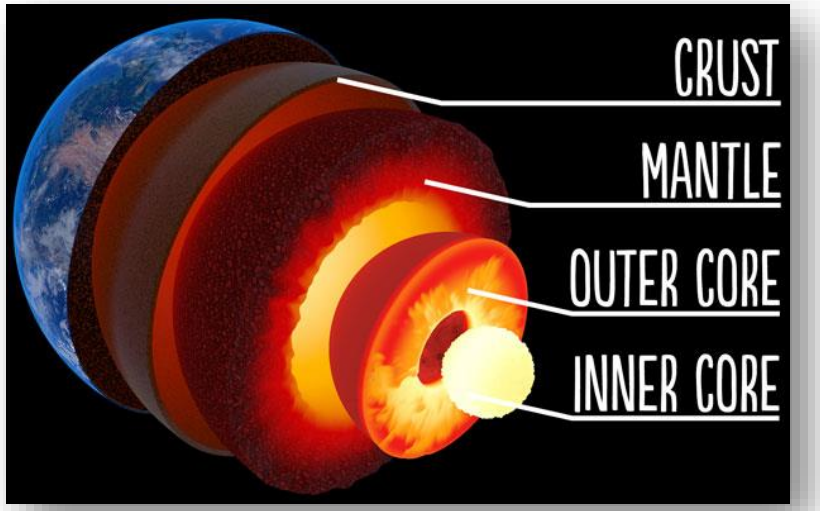
The Mantle

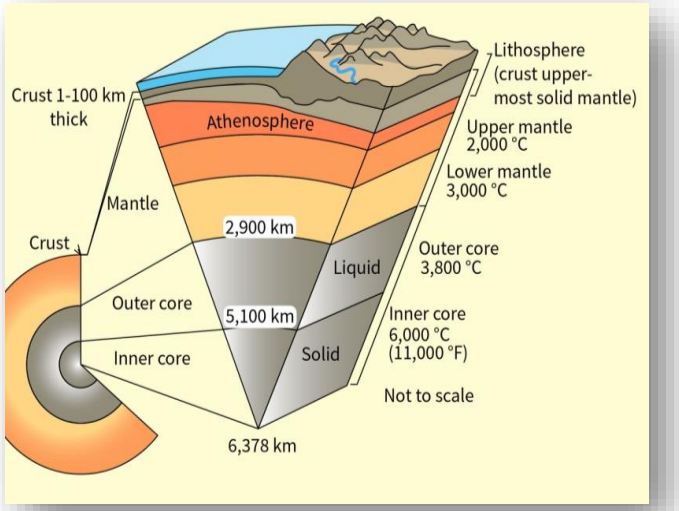
The **Mantle** Is Made Up Of **45% Oxygen, 21% Silicon,** And **23% Magnesium (OSM).** It Consists Of **Silicate Rocks** That Are Rich In **Iron** And **Magnesium.** Its Temperature Ranges From **200 °C (Upper Boundary With The Crust)** To **4,000 °C (Core-mantle Boundary).**



The Core

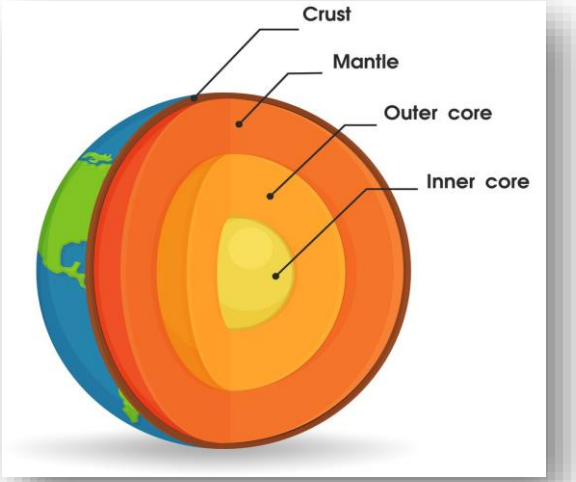
The **Core Mantle** Boundary Is Located At The Depth Of **2,900 Km**. The **Outer Core** Is In **Liquid State** While The **Inner Core** Is In a **Solid State**. The Core Is Made Up Of Very Heavy Material Mostly Constituted By **Nickel** And **Iron**. It Is Sometimes Referred To As The ***Nife Layer.*** It Holds **16% Of Earth Volume**.

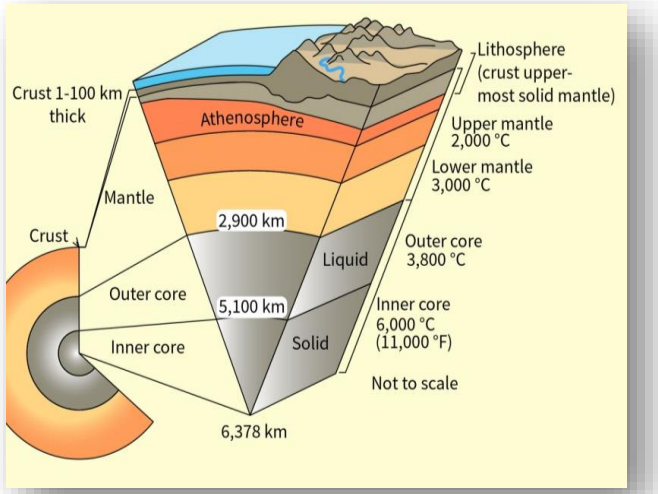




Outer Core

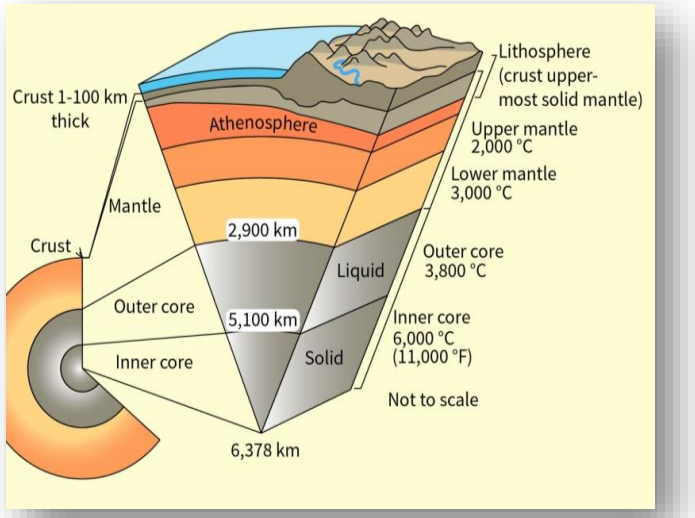
The Lies Between **2900 Km And 5100 Km** Below The **Earth's Surface**. The **Outer Core** Is Composed Of **Iron** Mixed With **Nickel** (**Nife**) And Other Lighter Elements. It Is **Liquid** Even Though It Has A Similar Composition To The **Inner Core** Because It Is Not Under Enough Pressure To Be **Solid**.





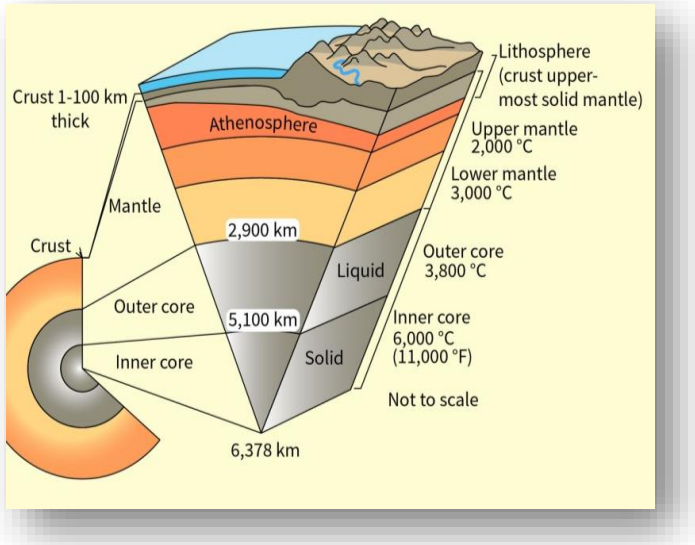
Inner Core

The **Inner Core** Extends From The Centre Of The Earth To **5100 Km** Below The Earth's Surface. It Is Composed Of **Iron (80%)** And Some **Nickel** (**Nife**). The Density Of The Inner Core Ranges From **12.6 G/Cm^3** To **13 G/Cm^3.** The **Core** Accounts for **16 %** Of The **Earth's Volume But 33%** Of Earth's Mass.

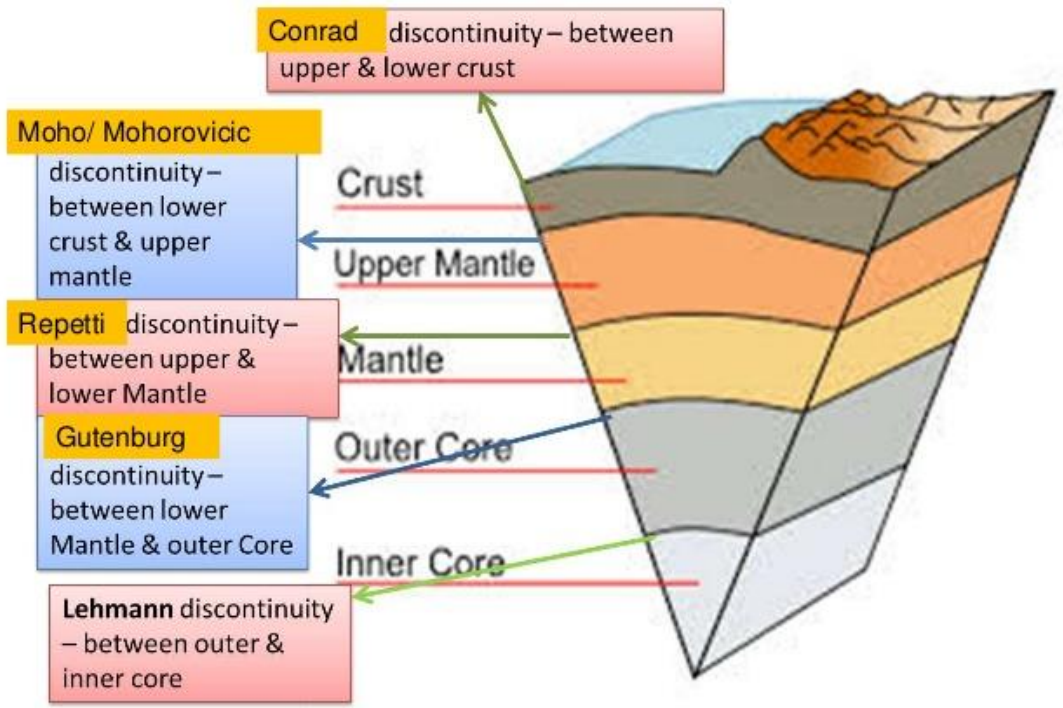


Inner Core

At **6000°C**, This **Iron Core** Is As Hot As The **Sun's Surface**, But The Crushing Pressure Caused By Gravity Prevents It From Becoming **Liquid.** Earth's **Inner Core Rotates** Slightly Faster Relative To The **Rotation Of The Surface**. The **Solid Inner Core** Is Too Hot To Hold A **Permanent Magnetic Field**.



Seismic Discontinuity



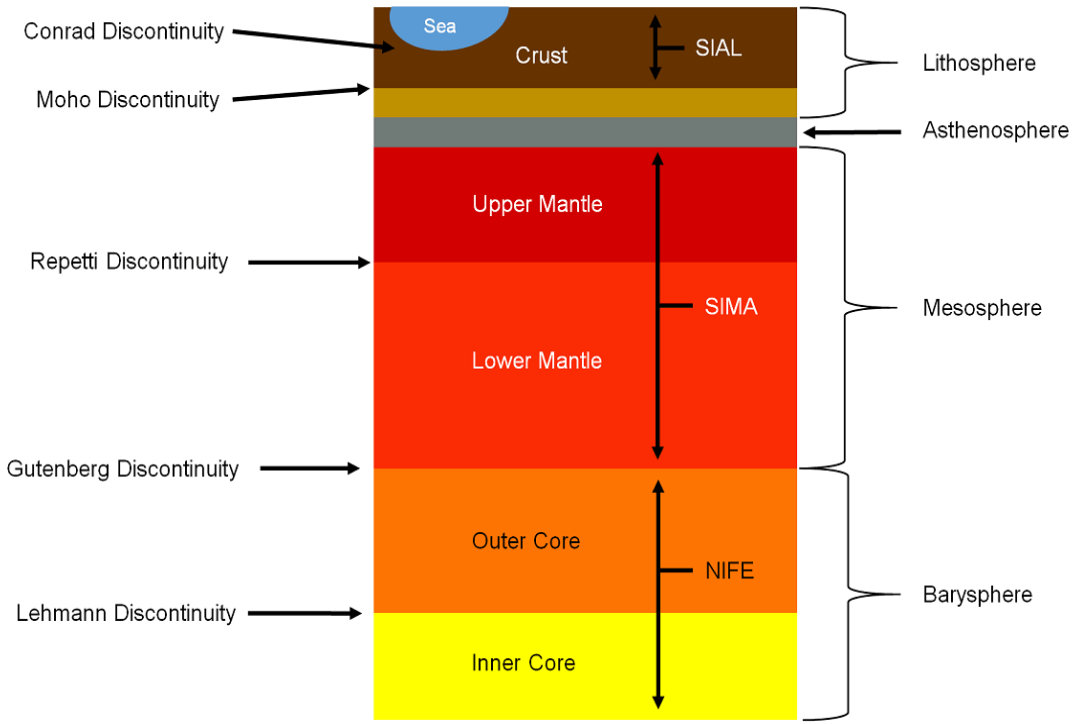


Plate Tectonic Theory

Types of Plates	
Major Plates (Primary Plates)	**Minnor Plates (Secondary Plates)**
Africa Plate	Cocos Plate
Pacific Plate	Filipino Plate
North American Plate	Juan de Fuca Plate
Antarctic Plate	Caribbean Plate
Eurasian Plate	Scotia Plate
Australian Plate	Nazca Plate
South American Plate and	Arabian Plate
	Indian Plate

Q. Which Of The Following Elements Are Found In Highest And Lowest Quantities Respectively In The Crust Of The Earth?

(A) Oxygen And Silicon

(B) Calcium And Sodium

(C) Sodium And Magnesium

(D) Oxygen And Magnesium

Q. Which Of The Following Elements Are Found In Highest And Lowest Quantities Respectively In The Crust Of The Earth?

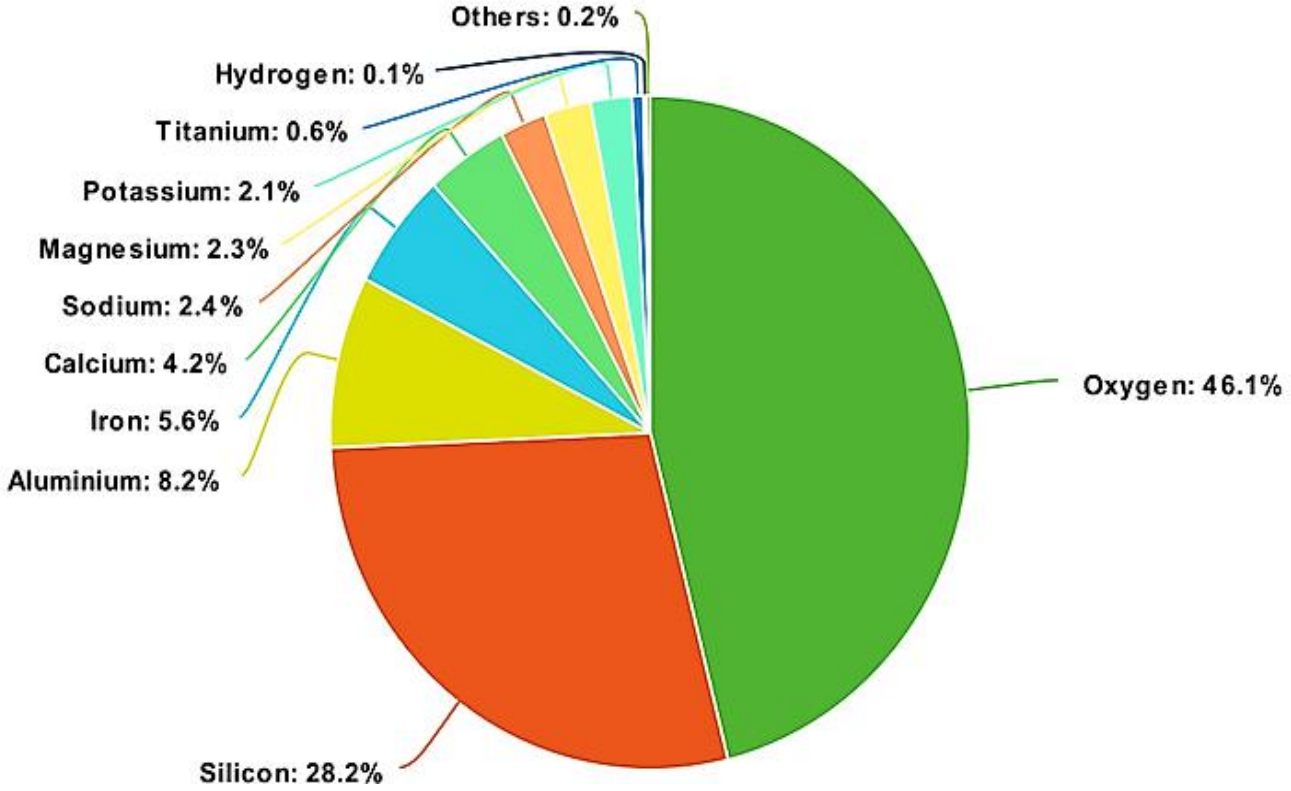
(A) Oxygen And Silicon

(B) Calcium And Sodium

(C) Sodium And Magnesium

(D) Oxygen And Magnesium

- **Explanation:**
- **Elements In The Earth’s Crust -**
- Oxygen = 47%, Silicon = 28%, Calcium = 3.5%,
- Sodium = 3% And Magnesium = 2%



Q. Which one of the following is ***not*** an igneous rock ?

(a) Granite

(b) Slate

(c) Basalt

(d) Gabbro

Q. Which one of the following is ***not*** an igneous rock ?

(a) Granite
(b) Slate
(c) Basalt
(d) Gabbro

ANSWER: B

Igneous or Sedimentary rock	Influence	Metamorphosed rock
Granite	Pressure	Gneiss
Clay, Shale	Pressure	Schist
Sandstone	Heat	Quartzite
Clay, Shale	Heat	Slate ==> Phyllite
Coal	Heat	Anthracite ==> Graphite
Limestone	Heat	Marble

Q. Which of the following statements is/are correct ?

1. Hypocenter is the point on the surface of the Earth, nearest to the focus.
2. Velocity of earthquake waves is higher in denser materials.
3. P waves move faster and are the first to arrive at the surface of the Earth.

Select the correct answer using the code given below :

(a) 1 and 2

(b) 2 and 3

(c) 1 and 3

(d) 3 only

Q. Which of the following statements is/are correct ?

1. Hypocenter is the point on the surface of the Earth, nearest to the focus.
2. Velocity of earthquake waves is higher in denser materials.
3. P waves move faster and are the first to arrive at the surface of the Earth.

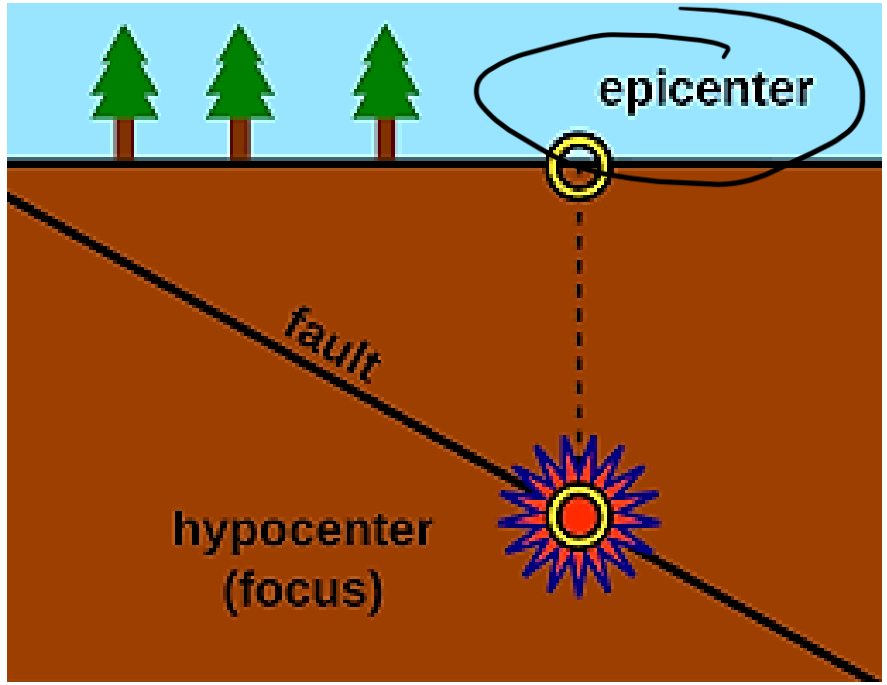
Select the correct answer using the code given below :

(a) 1 and 2

(b) 2 and 3

(c) 1 and 3

(d) 3 only



ANSWER: B

Q. Consider the following statements :

1. Distance between the longitudes becomes zero on North Pole and South Pole.

2. Distance between the longitudes is maximum on the Equator.

3. Number of longitudes is more than number of latitudes.

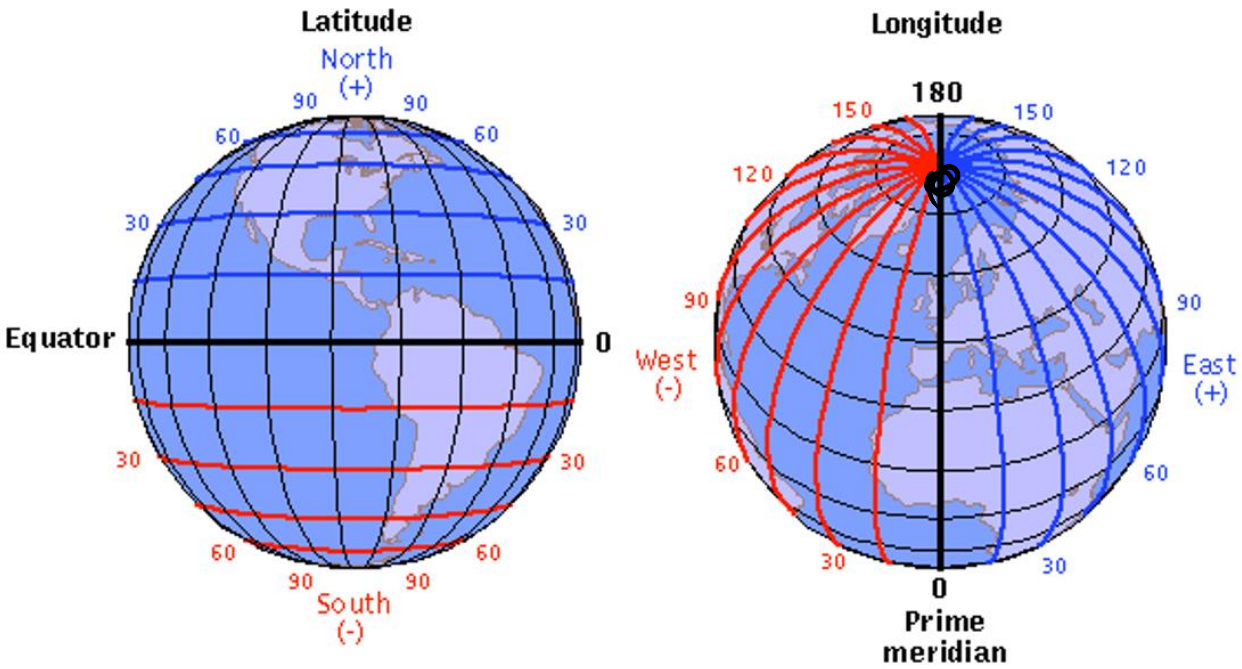
Which of the statements given above is/are correct ?

(a) 1 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2 and 3



Q. Consider the following statements :

1. Distance between the longitudes becomes zero on North Pole and South Pole.
2. Distance between the longitudes is maximum on the Equator.
3. Number of longitudes is more than number of latitudes.

Which of the statements given above is/are correct ?

(a) 1 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2 and 3

ANSWER: D

A Degree Of Longitude Is Widest At The Equator With 69.172 Miles (111.321 Kilometers).

The Distance Gradually Shrinks To Zero As They Meet At The Poles.

The Total Number Of Latitudes Is 180 And The Total Number Of Longitudes Is 360

Q. Which one of the following is found in the innermost part of the Earth ?

(a) Conrad discontinuity

(b) Moho discontinuity

(c) Guttenberg discontinuity

(d) Lehmann discontinuity

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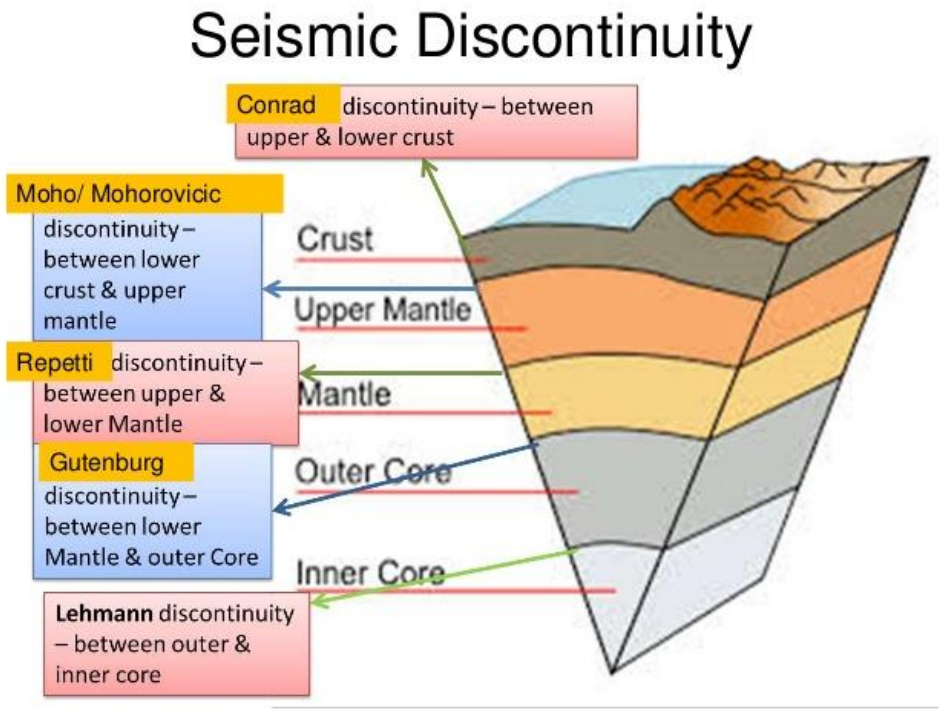

Q. Which one of the following is the lowermost/innermost intrusive igneous rock ?

(a) Laccolith

(b) Batholith

(c) Lopolith

(d) Phacolith

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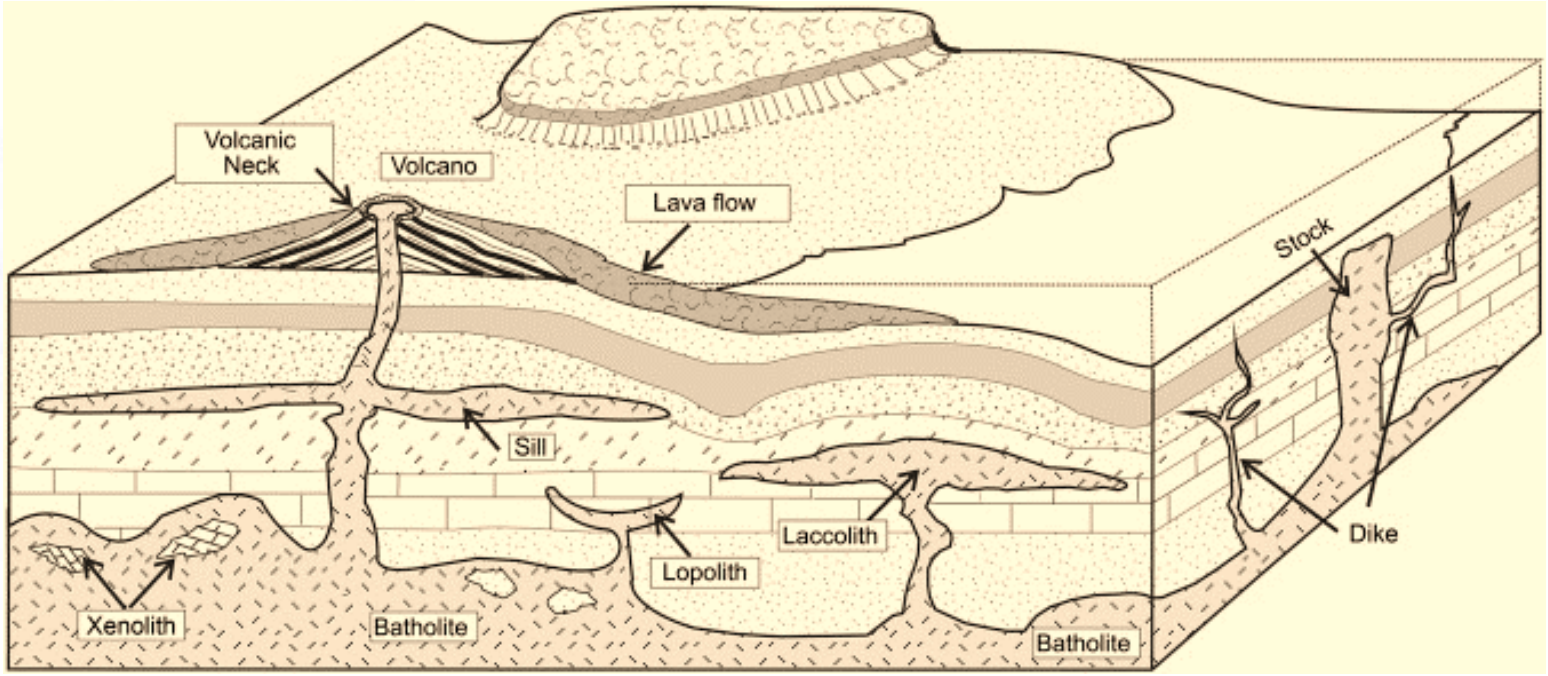
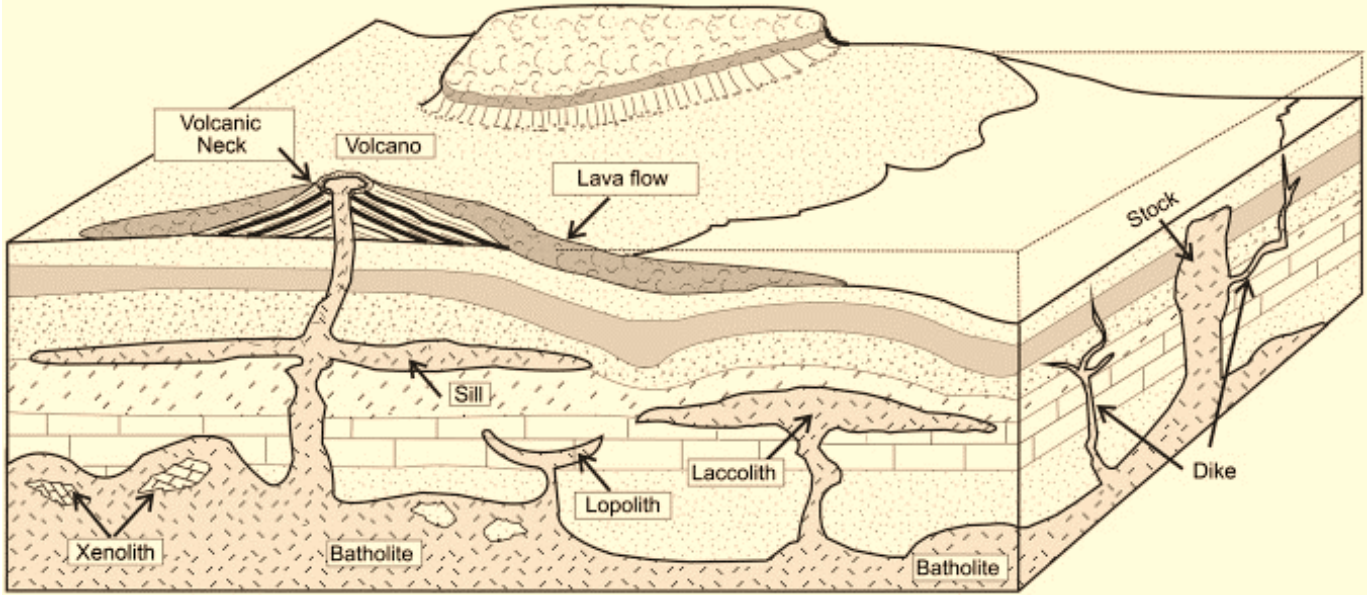


ANSWER: B

Batholiths:

These Are Huge Mass Of Igneous Rocks, Usually Of Granite.

These Rock Masses Formed Due To Cooling Down And Solidification Of Hot Magma Inside The Earth.



Q. The Tropic of Cancer passes through how many coastal and landlocked States of India, respectively?

(a) 1 and 7

(b) 2 and 6

(c) 2 and 5

(d) 3 and 5

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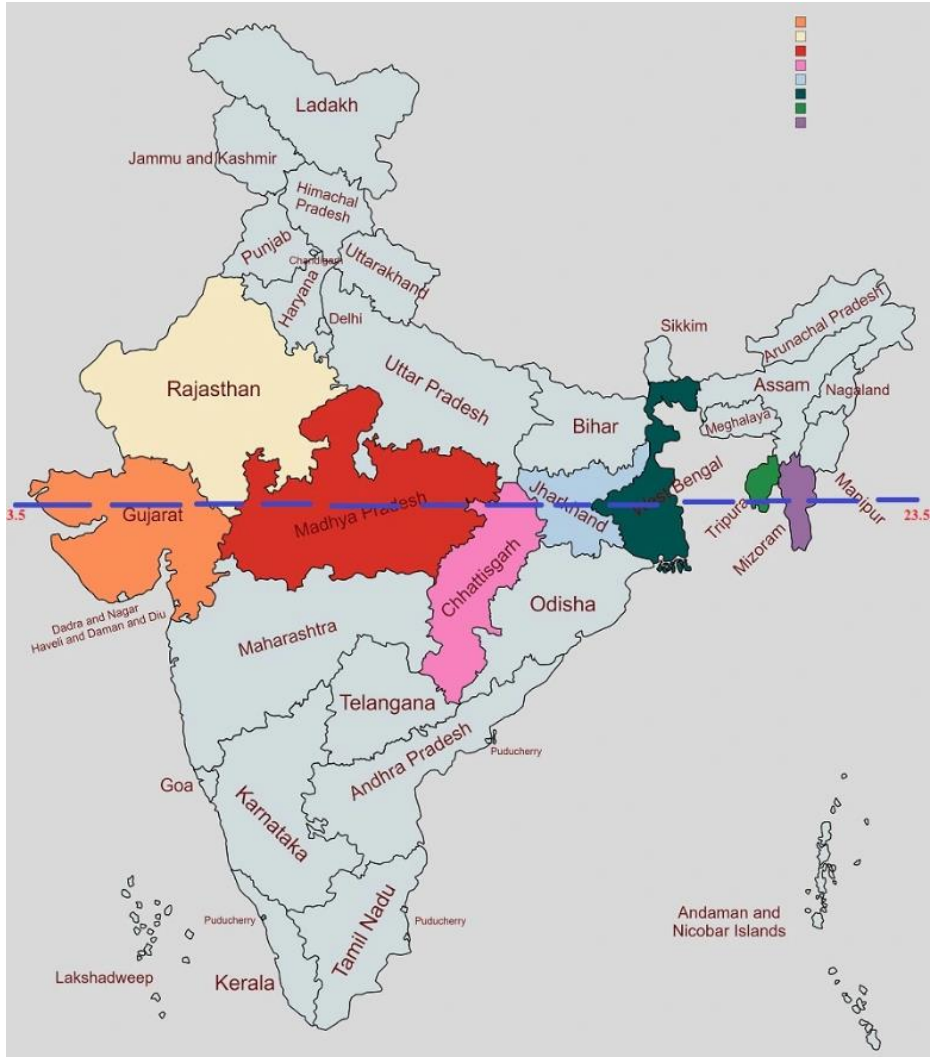
ANSWER: B



Q. If it is 10:00 a.m. at Greenwich Mean Time (GMT), then what will be the time at 90° E longitude?

(a) 5:00 a.m.

(b) 4:00 a.m.

(c) 3:00 p.m.

(d) 4:00 p.m.

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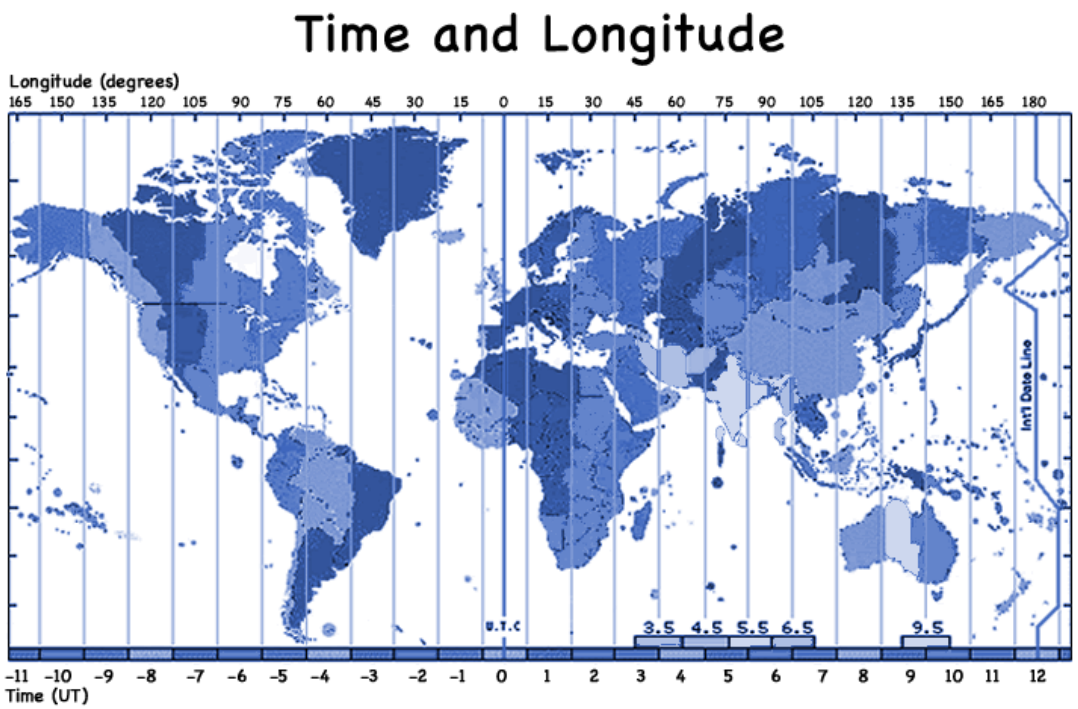

ANSWER: D

Q. Which of the following statements about volcanoes are correct?

1. The strength of a volcano is measured by the Volcanic Explosive Index.
2. Iceland and Philippines were created by volcanic activity.
3. Volcanic soils are rich, deep and fertile and allow intensive agriculture to take place.

Select the correct answer using the code given below.

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

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ANSWER: A

Volcanic Soils, Also Known As Andisols, Are Formed From Volcanic Ash And Cinder Deposits. Andisols Are Usually Light And Fluffy And Are Easily Tilled. These Soils Also Hold A Lot Of Water. When Not Highly Weathered, Volcanic Soils Are Typically Very Fertile Soils.

Q. The extent of damage caused by earthquake is ***not*** influenced by which one of the following ?

(a) Strength of earthquake

(b) Population density

(c) Type of building

(d) Climate of the area

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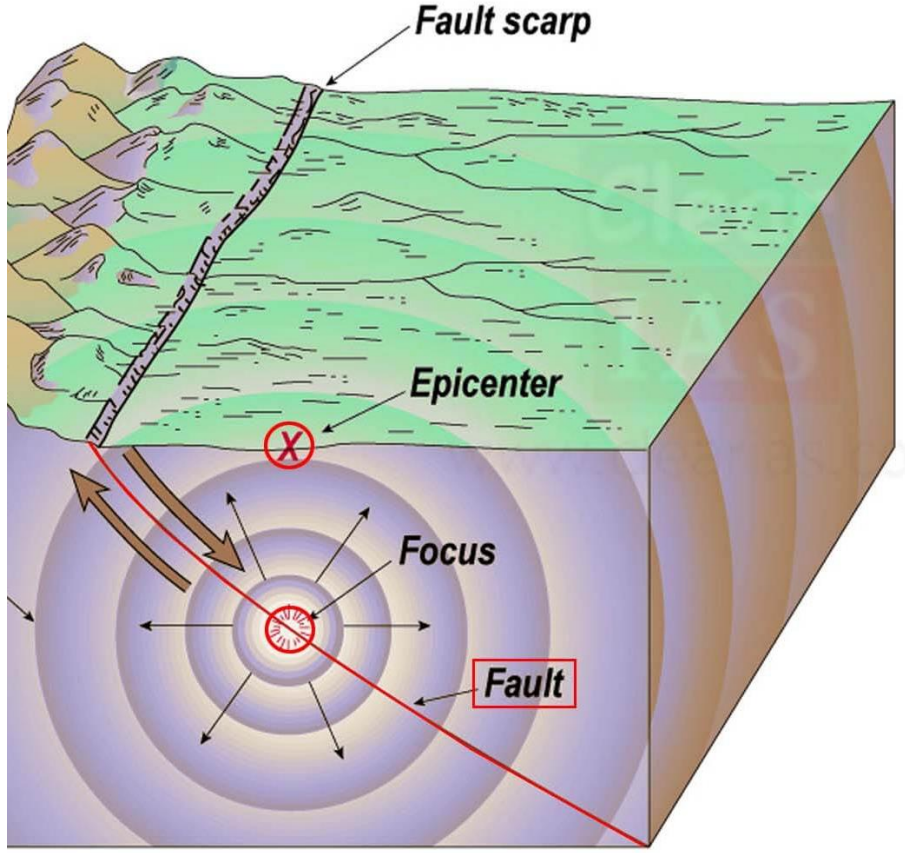

Answer: D

Q. Which one of the following is **not** a major tectonic plate?

(a) Saudi Arabian plate

(b) Antarctica and the surrounding oceanic plate

(c) India-Australia-New Zealand plate

(d) Pacific plate

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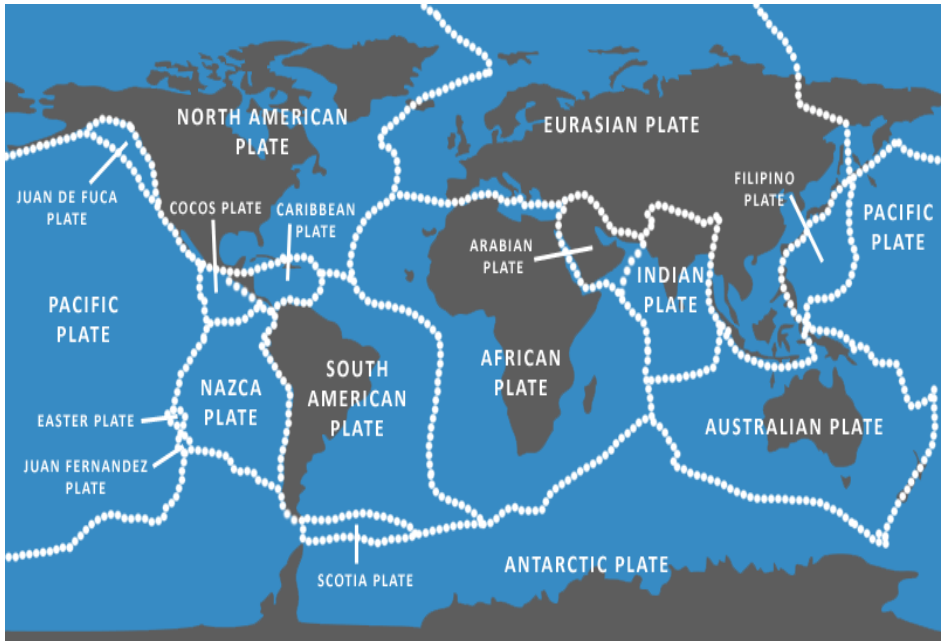
Answer: A

- **Explanation**:

- The **Arabian Plate** Is A **Minor Tectonic Plate** In The **Northern** And **Eastern Hemispheres**.

- It Is One Of **3 Continental Plates** (Along With **The African And Indian Plates)** That Have Been **Moving Northward Colliding With The Eurasian Plate.**



Q. Which one of the following 'discontinuities' separates the Earth's crust from the mantle?

(a) Gutenberg

(b) Mohorovicic

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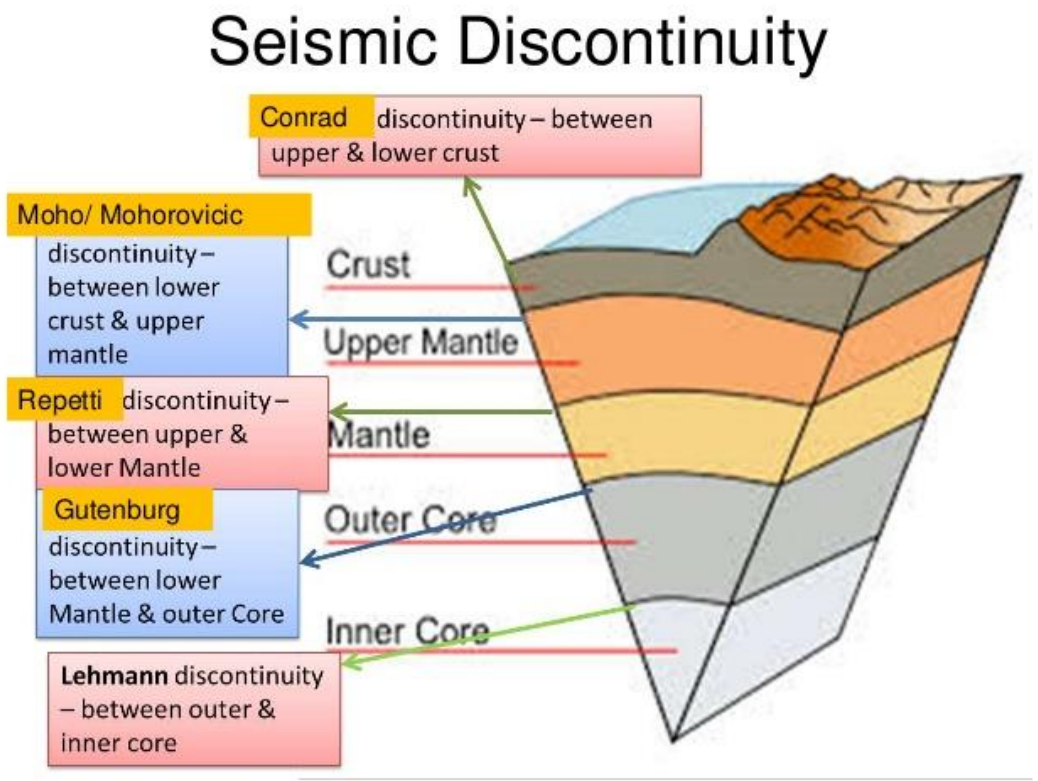

Answer: B

Q. Which one of the following cities of the world would represent the greatest linear velocity of rotation of the Earth?

(a) Kampala, Uganda

(b) St. Petersburg, Russia

(c) Madrid, Spain

(d) Stockholm, Sweden

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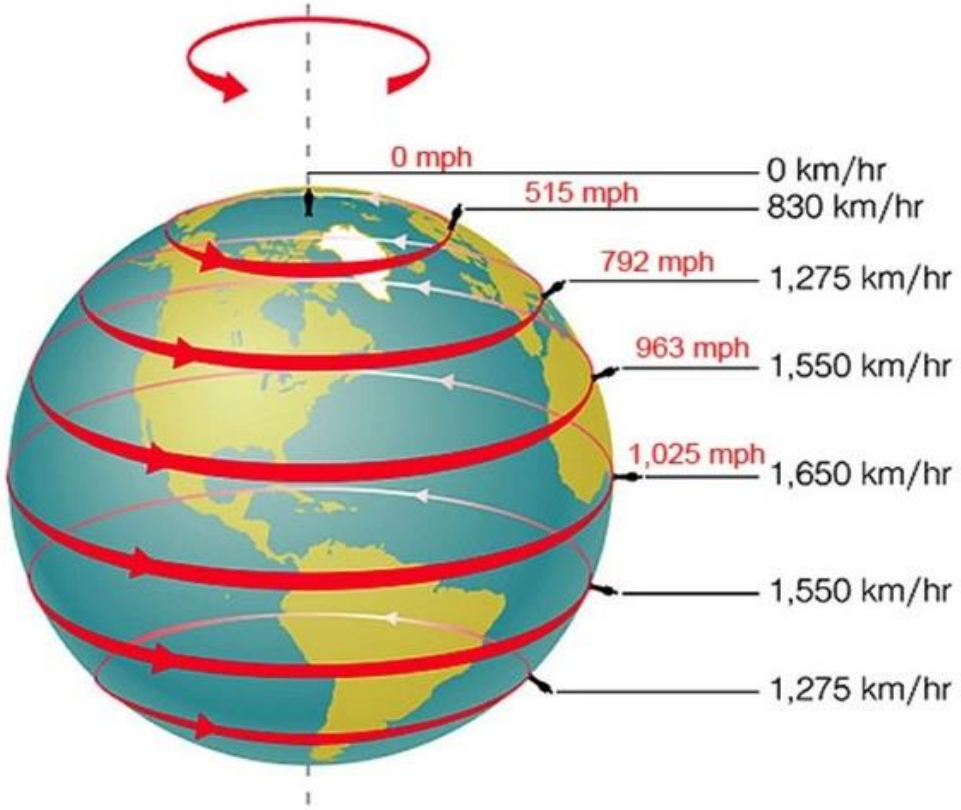
Answer: A

Explanation:

• The **Earth Rotates Fastest At The Equator**, And **Slowest--essentially, Not At All--at The Top And Bottom**, With The **Rotation Speed At The Middle Latitudes** Falling somewhere In Between These Two Extremes



Q. Which of the following statements is/are correct?

1. The Earth's crust is brittle in nature.
2. The mean thickness of the oceanic crust is 15 km, whereas that of the continental crust is around 30 km.

Select the correct answer using the code given below.

(a) 1 only

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(c) Both 1 and 2

(d) Neither 1 nor 2

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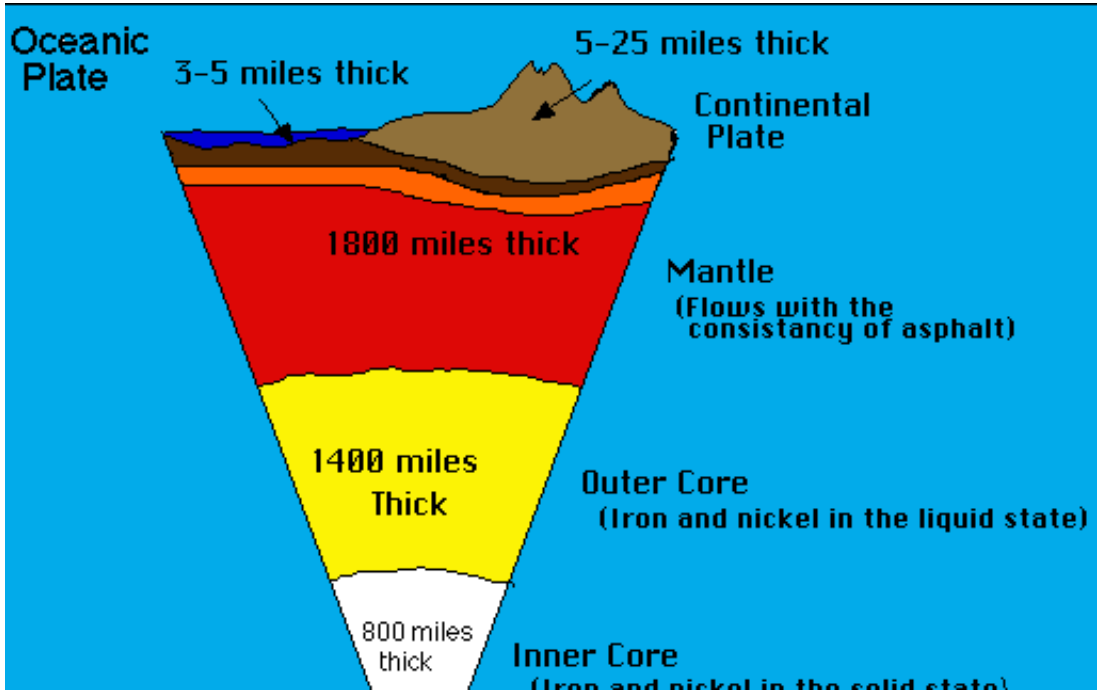

Answer: A

Q. Which one of the following statements about earthquake waves is ***not*** correct?

(a) P waves move faster and are the first to arrive at the surface.

(b) P waves can travel through gaseous, liquid and solid materials.

(c) Seismographs located beyond 145° from epicentre can record the arrival of P waves.

(d) P waves have maximum area covered under its shadow zone.

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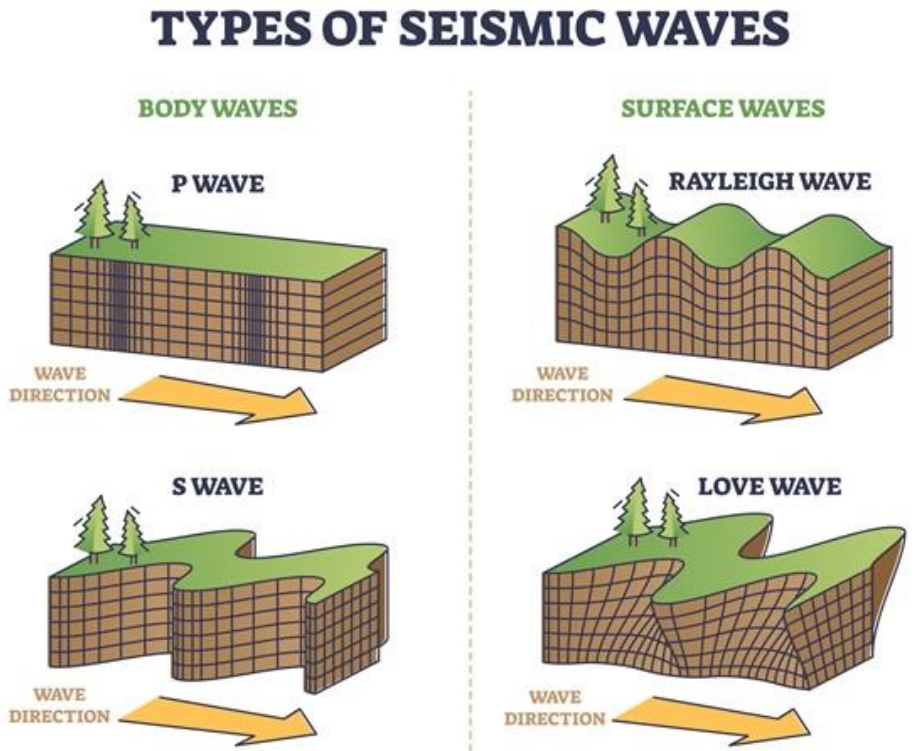

Answer: D

Q. Which one of the following is ***not*** a minor plate ?

(a) Cocos Plate

(b) Nazca Plate

(c) Caroline Plate

(d) Antarctic Plate

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(b) Nazca Plate

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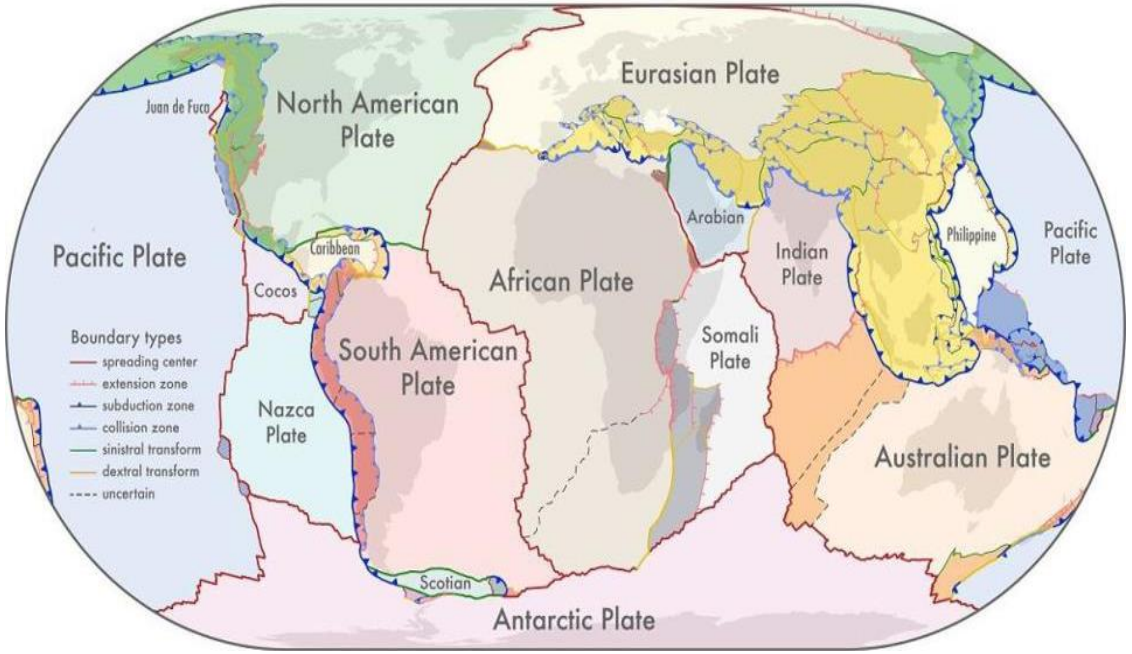
Answer: D

Explanation:

- Major And Minor Tectonic Plates Most Of The Earth Is Covered By **Seven Major Plates** And Another **Eight Or So Minor Plates.**
- The **Seven Major Plates** Include The **African, Antarctic, Eurasian, North American, South American, India- Australian,** And **Pacific Plates**.
- Some Of The **Minor Plates** Include The **Arabian, Caribbean, Nazca, And Scotia Plates**



Q. Point of Origin of Earthquake Wave is known as

(a) Epicentre.

(b) Focus.

(c) Photosphere.

(d) Seismic Zone.

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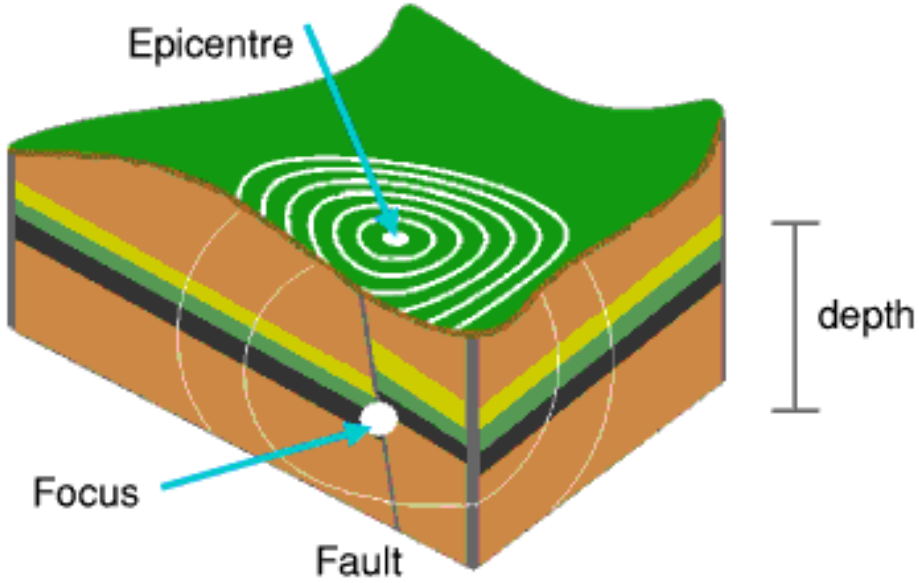
Answer: B

Explanation:

- The **Focus** Is The Point Within The Earth Where An **Earthquake Rupture Starts.**
- It Is Also Termed The **Hypocenter.**
- The **Epicenter** Is The Point On The **Earth's Surface Vertically Above The Hypocenter**



Q. The maximum depth of Lithosphere is found in the

(a) Pacific Ocean.

(b) Siberian Plain.

(c) Patagonian Desert.

(d) Himalayan Mountains.

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Answer: A

Q. Which One Of The Following Statements Is True About Tropopause?

(A) It Is About 5 Km Thick Layer.

(B) Its Average Height Is About 10 Km Over The Equator.

(C) There Is No Seasonal Variation In Its Height.

(D) The Temperature At Its Top Is Lowest Over The Equator And Relatively Higher Over The Poles.

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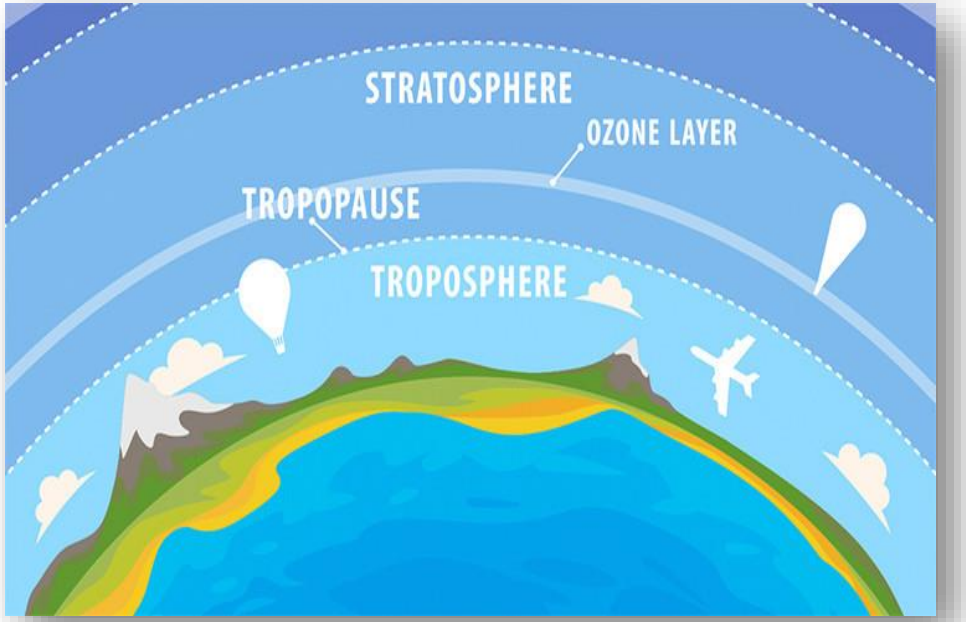
- **Explanation:**
- It Is The **Boundary** In The **Earth's Atmosphere** Between The **Troposphere And The Stratosphere**.
- The **Tropopause** Is **Higher Than The Global Average** In **Warm Regions** And **Lower In Cold Regions.**



Q. In An Anticyclone

(A) Barometric Pressure Is High Towards Centre Of The System.

(B) Winds Blow In Clockwise Direction In Southern Hemisphere.

(C) Weather Remains Moist And Sky Is Cloudy.

(D) Situation Of Calm Prevails And Weather Changes Rapidly.

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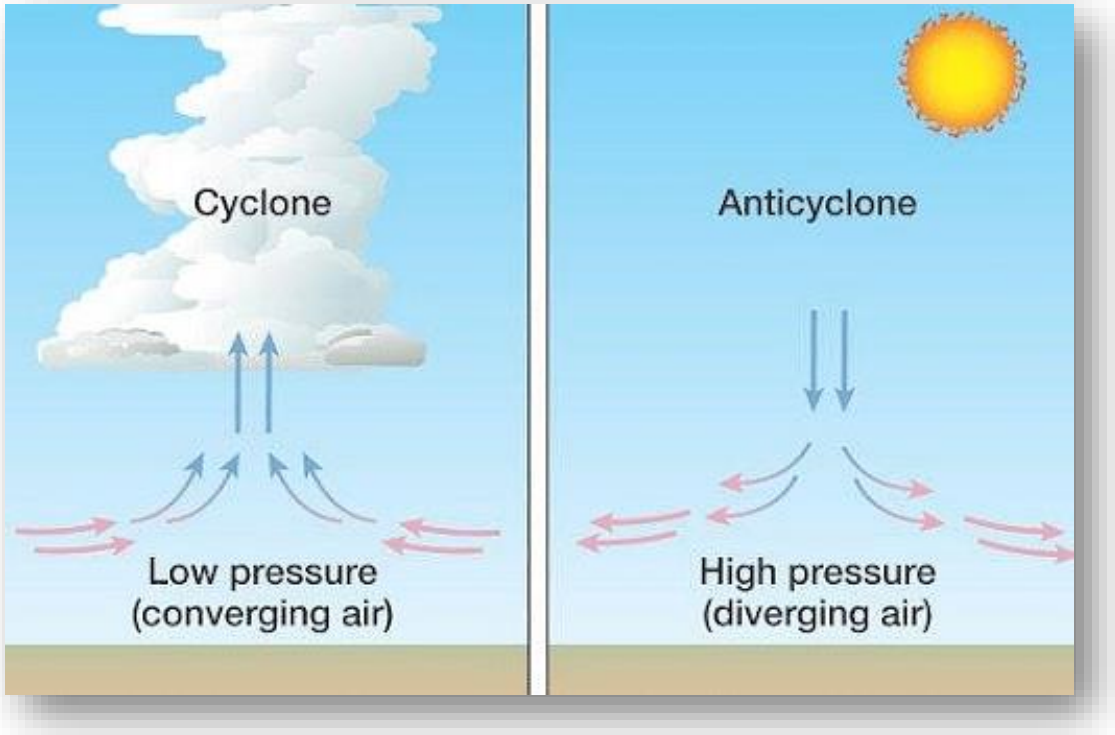
- **Explanation:**
- It **Is A Region Of High Atmospheric Pressure** Relative To The Surrounding Air (**High Or High-pressure System)**.



Q. Match The Following:

A. Temperature Falls With Height	1. Ionosphere
B. Reflects Radio Waves Back To Earth	2. Stratosphere
C. Contains Most Of The Ozone	3. Tropopause
D. Fall In Temperature Stops	4. Troposphere

A B C D	**A B C D**	**A B C D**	**A B C D**
(A) 4 2 1 3	(B) 3 2 4 1	(C) 4 1 2 3	(D) 4 3 1 2

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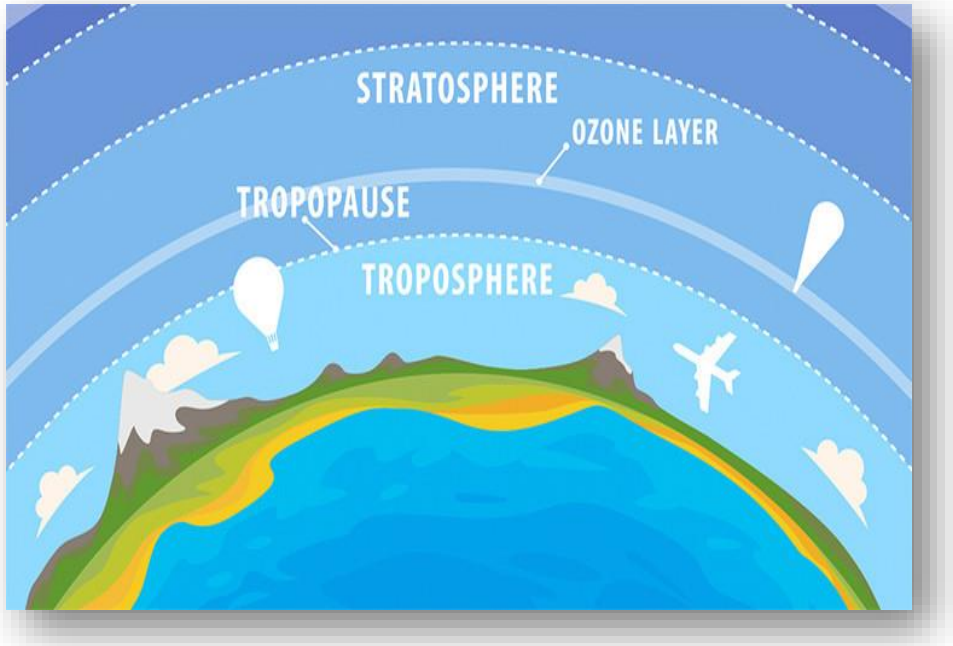
(A) 4 2 1 3	(B) 3 2 4 1	**(C) 4 1 2 3**	(D) 4 3 1 2

- **Explanation :**
- In **Troposphere Temperature Falls With The Height**. **Ionosphere Reflects Radio Waves** Back To **The Earth.**
- The **Ozone Layer In Stratosphere** Absorbs Most Of The **Sun's UV Radiation.**
- The **Tropopause** Is The **Boundary Between Troposphere** And The **Stratosphere**



Q. Match the following

A. Santa Ana	1. Argentina
B. Chinook	2. Alps
C. Foehn	3. Rockies
D. Zonda	4. California

A B C D **A B C D** **A B C D** **A B C D**

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

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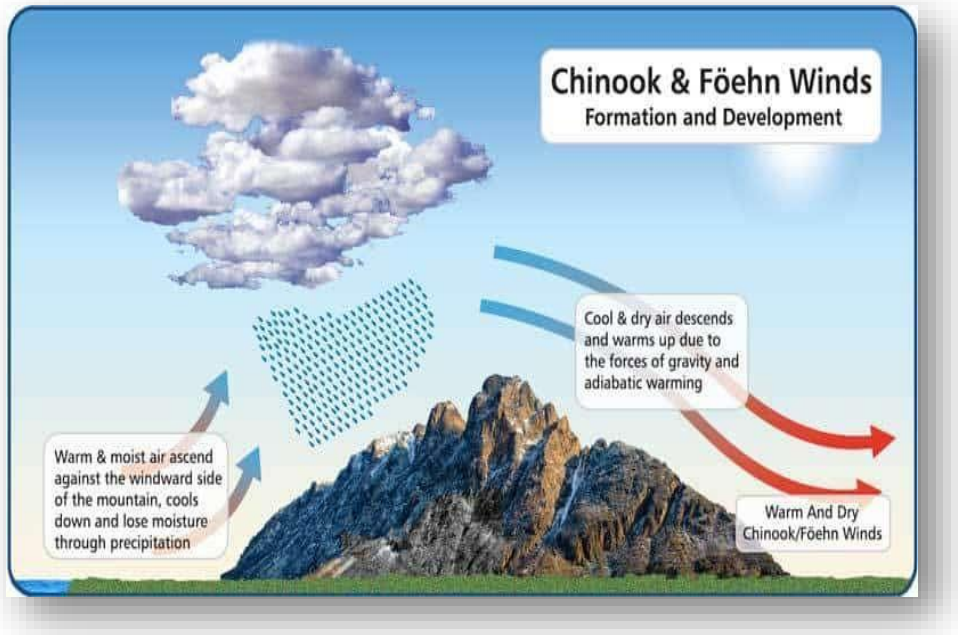
- **Explanation :**
- A **Foehn** Is A Type Of **Dry, Warm, Down-slope Wind** Drawing **Moist Mediterranean Air** Over The **Alps.**
- A **Chinook Wind** Creates **Warm, Dry Air** That Blows Down The **Eastern Slopes** Of The **Canadian Rockies.**



- **Explanation :**
- The **Santa Ana Winds**, Extremely **Dry Down-slope Winds** That Affect **California And Northern California**.
- The **Zonda** Is A **Dry Wind (Often Carrying Dust)** Which Comes From **Eastern Slope Of The Andes**, In **Argentina**.