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Explain the phenomenon of Solar Eclipses.  
(CSS-RUR3 Special)

### Solar Eclipses:

The ~~arr~~ alignment of the sun, moon and then earth on a single line, such arrangement is known as solar eclipses.

### Explanation of the phenomenon of solar eclipses:

In such a case, moon blocks the sunlight that is falling on earth. because moon comes in between the sun and Earth. Earth revolves around the sun on an elliptical path, and, similarly, moon is revolving around the earth in a tilted cycle with the angle  $5^\circ$ . During their continuous revolutionary motion, moon comes to such a point where both the circular paths cross each other, nodes, so it blocks the light of sun that is

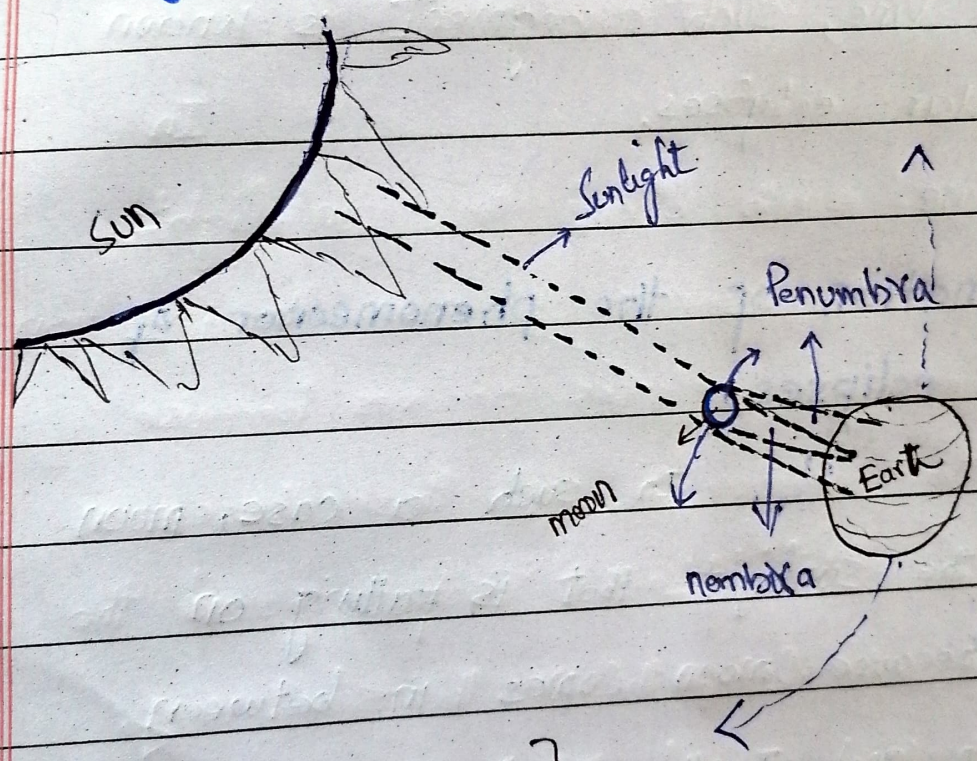
falling on the earth.

⇒ This phenomenon occurs once in 18 months.

⇒ It covers some specific area of the earth at same time.

⇒

### Diagrammatical illustration:



[Solar Eclipses]

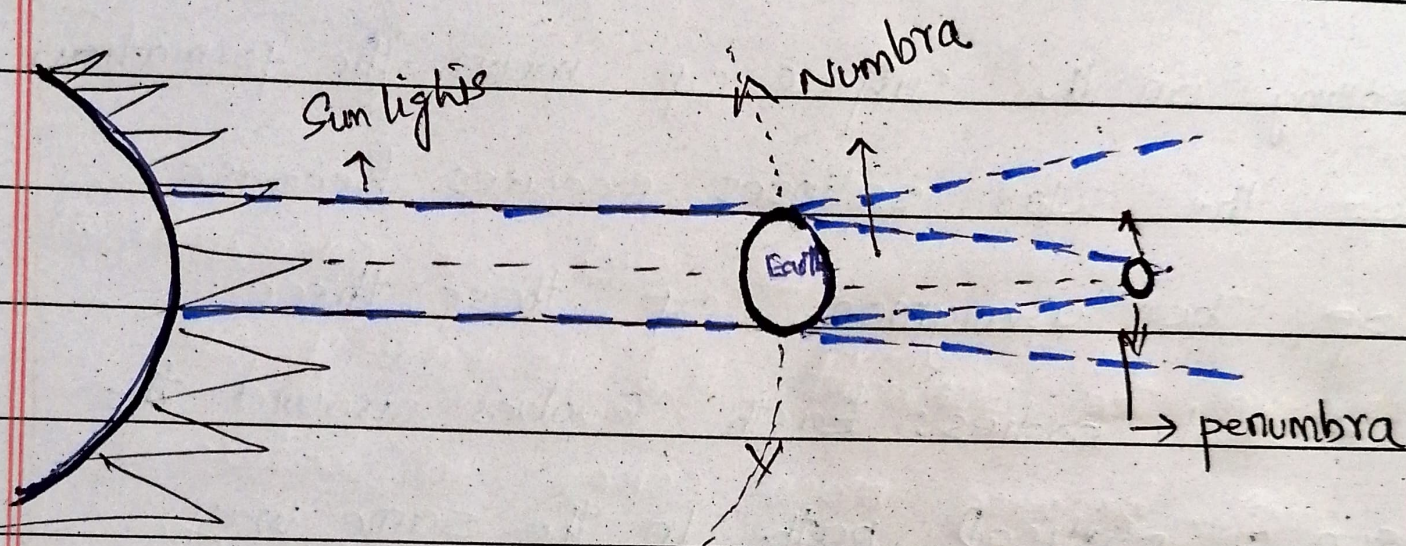
## Lunar Eclipses:

The alignment of the sun, earth and then moon on a single line such arrangement is known as lunar eclipses.

### Formation of the Lunar Eclipses:

In this case, earth blocks the sun light falling on the surface of moon. The formation of the solar eclipses occurs because of the arrangement of these three celestial bodies: Earth revolves around the sun in elliptical path. In the same way, moon revolves around the earth whose path is tilted with  $5^\circ$ . Therefore, on the points of nodes (where these two paths cross each other) ~~lunar eclipses occur~~ moon comes under the shadow of earth & that is called lunar eclipses.

## Diagram:



### [Lunar Eclipses]

- ★ Lunar eclipses occurs in full moon and Night time
- ★ ~~The~~ ~~full~~ moon appears full redish because the high wavelength [red light] fall on it. that are scattered from the earth surface.

Briefly Explain what Effects are produced due to Rotation and Revolution of Earth? (CSS-2017)

Ans:

a) **Rotation of the Earth:**

"The spinning of the earth from its own axes, it is called rotation of the earth."

**about the Rotatory motion of the earth**

- The axes of the rotation is tilted with the angle  $23.5^\circ$ .
- This rotation occur from west to East
- The speed of the earth rotation is about  $1675 \text{ km/s}$
- One complete rotation takes 24 hours

**→ The effects that are produced with the earth rotation:**

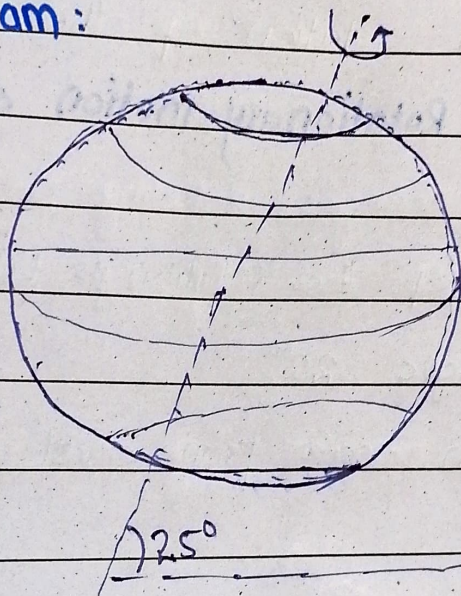
(I) The occurrence of day and nights within 24 hours

(I) The Bulging shape of the earth is due to such a rotation

(II) The Coriolis effects of is also produce due to earth rotatory motion

(III) It's cause the creation of the gravitational potential

Diagram:



b) The Revolution of the earth:

The earth is revolving around the sun on an elliptical path, this motion of the earth is

known as revolutionary motion.

## about the revolutionary motion:

- (I) it takes 365 365 days to complete one complete revolution.
- (II) The path is an elliptical
- (III) This is anti-clockwise motion
- (IV) This is because of sun gravitational pull.

The effects that are produced with this types motion of the earth.

- (I) Seasonal changes including pressure, temperature and humidity of a region
- (II) The variation between day and night's length

