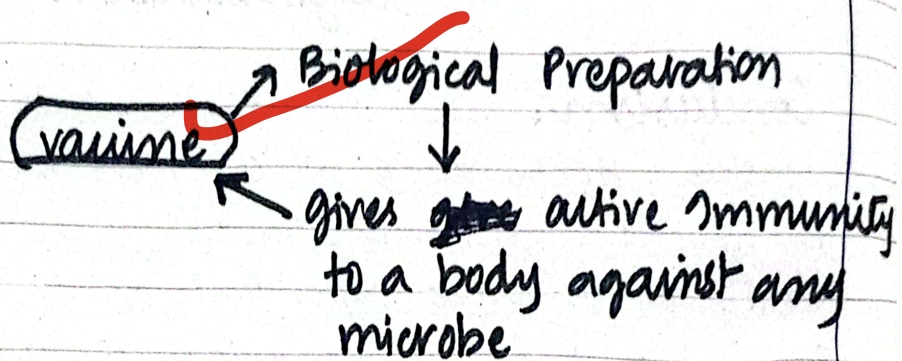


2016 paper

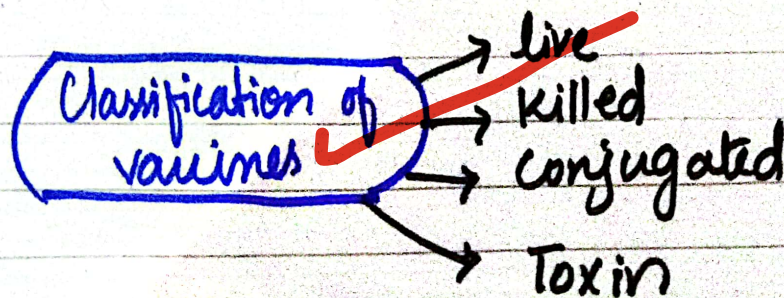
Q No # 4(a) what are vaccines? classify these and discuss vaccines in detail?

→ **Vaccines:** Vaccines are the biological preparations that give an active immunity to the body against microbes. The microbes for which vaccines are made are: Bacteria, virus, fungi.



→ **Types of vaccines:** There are different types of vaccines:

- (1) live vaccine: These are the vaccines which have live microbe inside them.
- (2) Killed microbe vaccine: These are the vaccines which have killed microbe inside them.
- (3) Conjugated vaccine: These are the vaccines which are the conjugation of live microbe with toxin or killed microbe with toxin.
- (4) toxin vaccine: These are the vaccines which have toxin diluted.



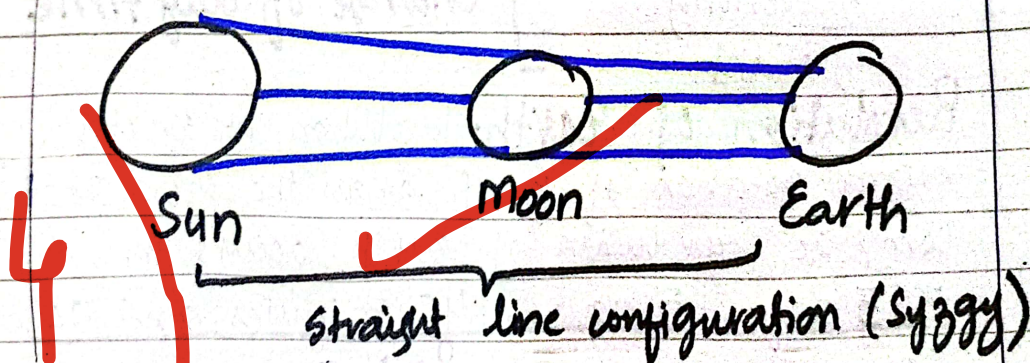
2017

QNo# 4(b) Differentiate between occurrence of solar and lunar eclipse?

→ Occurrence of Solar Eclipse:

An eclipse is an astronomical event in which one of the celestial body obscures or hinders another celestial body. It occurs during syzgy. Syzgy is the straight line configuration when three of the celestial bodies align on one plane that is earth, moon and sun.

• **Solar Eclipse:** solar eclipse occurs when moon comes in between earth and sun. The light of sun that was directly coming to earth was obscured by the moon and solar eclipse occurs.



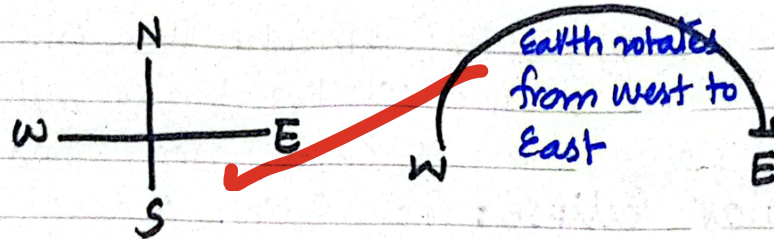
• **Lunar Eclipse:** lunar eclipse occurs when Earth comes in between the moon and the sun. Therefore the light of sun that was coming to moon was obscured by the earth.



2017

Q No# 4(c) Briefly explain what effects are produced due to Rotation and Revolution of Earth?

Rotation of Earth: Earth rotates from west to east. One complete rotation of Earth occurs in 24 hours.



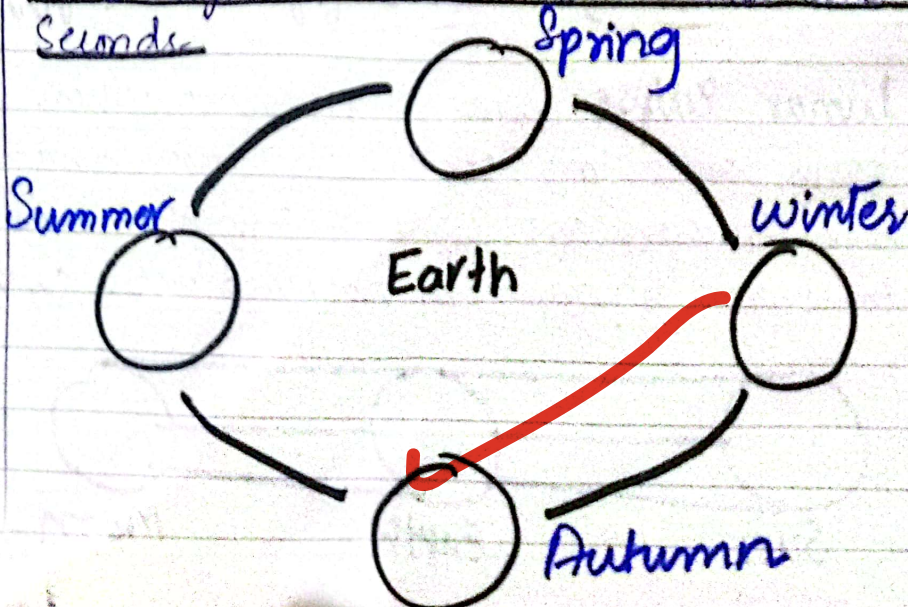
One complete rotation of Earth = One day

• Effects due to Rotation of Earth: The effects that are produced due to the rotation of the Earth are:

- 1) Morning
- 2) Evening
- 3) Night

} change of day time

Revolution of Earth: Revolution of Earth means rotation of Earth around the Sun. One complete revolution of Earth occurs in 365 days, 5 hours, 48 minutes and 46 seconds.



• Effects due to revolution of earth: The effects that are produced due to the revolution of earth are:

- 1) Summer
- 2) Winter
- 3) Spring
- 4) Autumn

→ change of seasons

(2018)
Q. NO # 2(a) Describe different methods to estimate the age of the universe?

Methods to estimate an age of the Universe:

The different methods to estimate an age of the universe are:

- 1) wavelength analyzation from stars
- 2) Spectrum or cosmic ray radiations

1) wavelength analyzation of stars: In wavelength analyzation of stars the wavelength is analyzed from stars to estimate the age of the universe

• wavelength coming towards stars

↓
Blue light

• wavelength going away from stars

↓
Red light

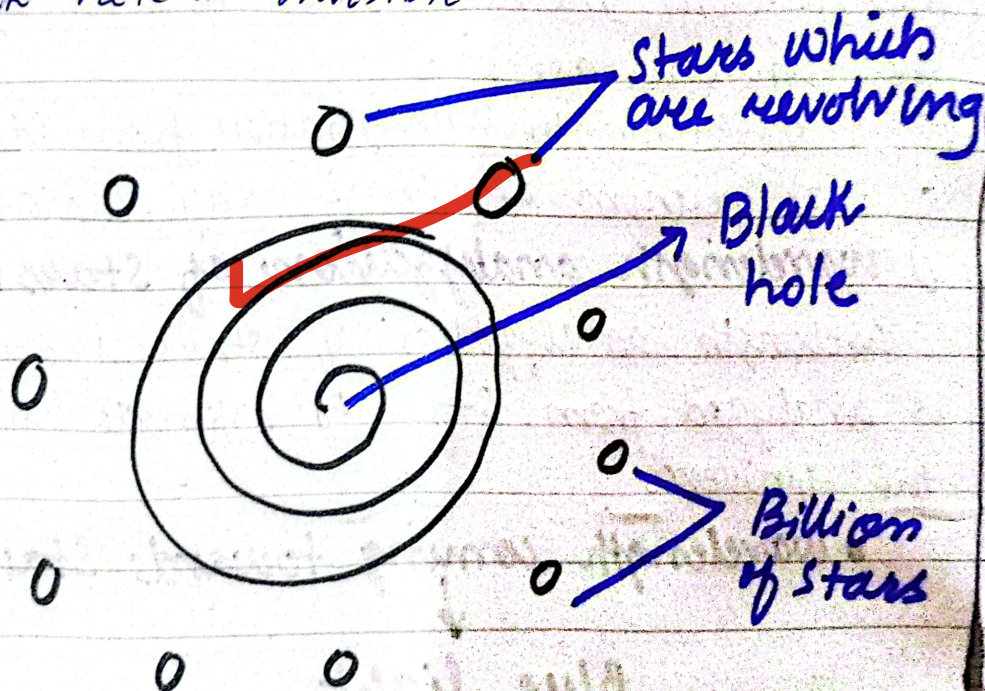
2) Analyzing spectrum or cosmic ray radiation:

After the formation of the solar system, the spectrum which was left was known as cosmic ray radiation. Scientists can analyze this spectrum to estimate the age of the universe.

QNO#2(d) (2018)

Define the term Black hole? what is expected inside it?

Black hole: Black hole is the space around which millions of stars orbit. Black hole is invisible.



What is expected inside Black hole?

Inside the Black hole gravity is expected.

discuss in more detail....