[Read the extract and copy the questions and solve them on a sheet of paper date wise. Keep the worksheets ready in a file to be submitted on the opening day]

**Introduction:**
The earth revolves around the sun in an elliptical orbit. This motion, together with rotation makes the earth system complex.

**Revolution of the earth:**
Revolution of the earth is the annual or yearly motion. It is the motion in which the earth revolves around the sun in an elliptical orbit in 356 days (approx).

**Characteristics of the earth:**
• The earth moves round the sun in an elliptical orbit at an average speed of 29.8km per sec or 100,000 km per hour.
• The speed of revolution is not uniform due to the gravitational pull of the earth which makes it move faster than when the earth is away from the sun.
• The period taken by the earth to make one complete round around the sun is 365 days 5hrs 48mins 45.51sec that is 356 days and 6hrs. We take solar year as 356 days. The remaining 6 hrs are adjusted every 4yrs into one complete day & are added to the month of February which is having 366 days.
• The earth's axis is inclined at an angle of 66°30’. The direction of the
motion is from west to east.

**Effects of Revolution of the Earth:**
*Seasonal Change:* The amount of heat that a place receives on earth depends on
  * The angle at which the sun rays reach the earth.
  
  The vertical rays produce more heat as it falls on a small area whereas slanting rays produce less heat as it spread over a large area. Thus it results in changing of seasons.

*Inclination of the earth axis:* Since the earth's axis is inclined which causes variation in the amount of heat received by the earth surface. When the north pole is inclined towards the sun the northern hemisphere gets the vertical rays of the sun and experience summer while south pole is away from sun so the southern part gets the oblique rays of the sun hence its winter in southern hemisphere and reverse happen when the south pole is inclined towards the sun.

Summer in northern hemisphere.
Winter in northern hemisphere.

* Perihelion and Aphelion Position: The earth's orbit is elliptical in shape. Due to this elliptical orbit of the earth the distance between the sun and the earth varies.
When the earth is closest to the sun the position is called **perihelion**. At perihelion the distance between the sun & the earth is 147.3million km and it occurs on **3rd January** every year.
When the earth is farthest from the sun the position is called **aphelion**. At aphelion the distance between the sun & the earth is 152million km and it occurs on **4th July** every year.

* Creation of Heat Zones:: The spherical shape of the earth along with the movement of the earth around the sun causes the difference in the angle of incidence of the sun's rays on the earth which in turn result into unequal distribution of heat on the earth's surface and thus heat zones are formed. The earth has three heat zones
  - Torrid Zone- Lies between tropic of cancer & capricorn gets the vertical rays of the sun so it experiences hot or warm throughout the year.
  - Temperate Zones- Lies between tropic of cancer to arctic circle in northern hemisphere & tropic of capricorn to antarctic circle in the southern hemisphere. Its gets the slanting rays of the sun hence it experiences moderate climate.
  - Frigid Zones- It lies from arctic circle to north pole in north & antarctic circle to south pole in south. This region gets extremely oblique rays of the sun which does not to heat the area. Hence this region experiences extremely cold climate throughout the year.
Heat Zones.

**Orbit of the Earth**: The imaginary elliptical path along which the earth travels around the sun.

1) a) Define the term Revolution.
   b) State the characteristic of revolution.
   c) What are the effects of revolution of the earth?
   d) What are the different heat zone we have?
   e) Define orbit.
   f) What is the relationship between seasons on the northern hemisphere and southern hemisphere?
   g) Differentiate between: 1) Perihelion & Aphelion, 2) Rotation & Revolution.