Lesson-3

Motions of the Earth

A. Fill in the blanks:

1. The Earth rotates from east to west.
2. The axis of the Earth is inclined at an angle of $23\frac{1}{2}$ degrees.
3. At the equator the length of days and nights is always equal.
4. The Earth tilts on its axis.
5. On 21st march the sun rays fall vertically at the equator.

B. Distinguish between:

1. Solstice and Equinox

Solstice- Twice a year, the Earth is at a maximum distance from the Sun. This happens on 20th or 21st June and 21st or 22 December. These are called Solstices. During solstices the rays of the sun shine directly on one of the two tropics.

Equinox- Twice a year, the Sun shines directly above the equator. During these days the length of days and nights are equal. These are called Equinox.

2. Day and Night.

Day- Day is the time when the sun shines toward a part of the earth. That part and the countries in it have day. Day may last from 10 to 12 hours in a day depending on the season.

Night- night is the time when the sun shines away from the earth. This part of the earth remains in darkness. Night may last for a period of 10 to 12 hours too depending on the seasons.

3. Rotation and Revolution.

Rotation- The spinning of the Earth on its axis is called 'rotation'. The axis has an angle of $23^{1/2}$ degree and is perpendicular to the plane of Earth's orbit. Which means, Earth is tilted on its axis, and because of this tilt, the northern and southern hemispheres lean in a direction away from the Sun. It takes 24 to complete one rotation of the earth. The rotation also causes day and night.

Rotation- The movement of the Earth around the Sun in a fixed path is called a revolution. The Earth revolves from west to east i.e., in the anticlockwise direction. The Earth completes one revolution around the Sun in one year or precisely in 365 days. The seasons are caused due to the revolution of the earth.

C. Answer these questions in brief:

1. Name any two motions of the Earth?

Ans.1 The two motions of the Earth are Rotation and Revolution.

2. List any two effects of rotation?

Ans.2 Two effects of rotation are: - the rotation causes day and night and tides.

3. What do you mean by the summer solstice?

Ans.3 Twice a year, the Earth is at maximum distance from the Sun. The days on which this phenomenon occurs is called summer solstice.

4. What is a leap year?

Ans.4 The Earth completes one revolution in 365 days and 6 hours. We count only 365 days in a year. The remaining six hours are added up and after every four years we get an additional day. We have 29 days in February and 366 days in a year which we call leap year.

5. When are days and nights equal?

Ans.5 During Equinoxes, the length of days and nights are equal.

D. Answer these questions in detail.

1. What causes the changes in seasons?

Ans.1 Earth's tilted axis causes the seasons. Throughout the year, different parts of the Earth receive the Sun's most directed rays. So, when the North Pole tilts towards the Sun, its summer in the Northern Hemisphere and when the South Pole tilts towards the Sun, it is winter in the Northern Hemisphere.

2. The Northern and the Southern hemispheres experience different seasons at the same time of the year. Give geographical reasons for this phenomenon.

Ans.2 The Northern and the Southern hemispheres experience different seasons at the same time of the year because of the tilt of the Earth on its axis. When the Sun rays fall on the Northern Hemisphere, it is summer season there, and in the Southern Hemisphere it is winter season. When the Earth revolves and the Southern hemisphere faces the sun it is summer season in the Southern hemisphere and winter in the Northern Hemisphere.

3. With the help of diagram explain the cycle of seasons.

Ans.3 Draw diagram on page number 131. Changing seasons.

End of the Chapter.