SUBJECT: SOCIAL STUDIES

LESSON: MOTIONS OF THE EARTH **GRADE: 6**

I. Read the questions and select the correct options:

1) Which of the following statements is INCORRECT regarding the Rotation of the Earth?

a. The Earth rotates on its polar axis from West to East direction.

b. The Earth takes approximately 24 hours in completing one rotation.

c. Rotation causes the occurrence of day and night.

d. All heavenly bodies seem to move from West to East direction due to the rotation of the Earth.

2) What would happen if the Earth stops rotating on its own axis?

a. The people of the entire Earth would experience the equal amount of day and night throughout the year.

b. The entire Earth would always experience extreme hot climatic condition.

c. One half of the Earth would be plunged into perpetual darkness.

d. The proper ecological balance would be maintained all over the Earth.

3) Assertion (A): The Earth is flattening at the Poles and bulging at the Equator.
Reason (R): The Earth revolves around the Sun in an anti-clockwise direction.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is NOT the correct explanation of A.

c. A is correct but R is wrong.

d. A is wrong but R is correct.

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4) Which of the following statements is INCORRECT about Equinox?

a. The term 'Equinox' denotes equal nights.

b. On March 21 and September 23, the Sun shines vertically over the Equator.

c. The people of Northern Hemisphere experience Spring Equinox on March 21.

d. We experience Autumn Equinox on September 23 in the Southern Hemisphere.

5) Assertion (A): On June 21, people of the Northern Hemisphere experience the longest day and shortest night of the year.
Reason (R): The Sun rays fall vertically on the Tropic of Capricorn.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is NOT the correct explanation of A.

c. A is correct but R is wrong.

d. A is wrong but R is correct.

6) Assertion (A): The Circle of Illumination does not coincide with the axis of the Earth.
Reason (R): The Earth is tilted at an angle of 25 ½ ° with respect to its orbital plane.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is NOT the correct explanation of A.

c. A is correct but R is wrong

d. A is wrong but R is correct.

II. Choose the correct word:

a) An imaginary line joining the North Pole and the South Pole on which the Earth rotates.

b) The fixed elliptical path along which the Earth revolves around the Sun.

c) The Earth is said to be in '_____' on January 3 when its distance from the Sun is minimum. **(Approximately 148.5 million km)**

d) The Earth is said to be in '_____' on July 4 when its distance from the Sun is

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maximum. **(Approximately 151 million km)**

e) The period of diffused light after the sunset.

f) The axis of the Earth is tilted at an angle of 66 ½ ° with the plane of Earth's orbit. This tilt is called the _____ of the Earth's axis.

III. **Impact of the Inclination of the Earth's axis:**

The inclination of the Earth's axis is responsible for the occurrence of _____, _____ in daylight hours, _____ distribution, _____ patterns, and _____ ecosystems. It is a fundamental factor in shaping the Earth's _____ and the _____ of life on our planet.

IV) Why do we observe variation in the length of days and nights?

Answer: The variation in the length of days and nights occurs because the Earth _____ around the Sun with its axis that is always inclined at 66 ½°.

- At the _____, the variation is minimum and the days and nights are equal in length throughout the year.
- The variation is _____ at the **Poles**. Hence, people experience continuous daylight for six months during summer and continuous darkness for six months during winter in the Polar Regions.

V) Why do vertical rays of the Sun give more heat than the slanting rays?

Answer: The part of the Earth that is tilted _____ the Sun receives _____rays of the Sun while the other part receives _____ rays.

- The vertical Sun rays are _____ and _____ in a smaller area while the _____ rays spread out over a _____ area. Moreover, the

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_____ rays pass through a _____ distance of the atmosphere than the

_____rays. Thus, they lose less heat.

VI) Why are days and nights equal all over the world on March 21 and September 23?

Answer: On March 21 and September 23, the Sun shines vertically over the _____. At this position, neither the North Pole nor the South Pole is tilted _____ the Sun. Hence, days and nights are equal in length (12 hours day and 12 hours night) throughout the world on these two days. This is called _____. 21st March is called _____ Equinox while September 23rd is called _____Equinox.

VII) Distinguish between

a) Rotation and Revolution of the Earth and

b) Summer Solstice and Winter Solstice.

a) Rotation and Revolution Motions of the Earth

Rotation	Revolution

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b) Summer Solstice and Winter Solstice.

Summer Solstice	Winter Solstice

VIII. a.) Why does the February month have 29 days after every four years?

Ans: February has 29 days every four years because of _____ years. The Earth takes about 365.25 days to complete one _____ around the Sun, but our calendar only has _____ days. To make up for the extra 0.25 days, an extra day is added to _____ every four years, creating a leap year. This keeps our calendar in sync with the Earth's orbit.

b) How does the inclination of the Earth's axis impact the phenomenon of the Midnight Sun in the Polar Region?

Ans: The inclination of the Earth's axis (tilted at 23.5 degrees) causes the _____Regions to experience the Midnight Sun. During _____, the pole tilted toward the Sun stays in sunlight

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for 24 hours, leading to continuous _____. This happens because the Sun doesn't set below the horizon, creating the phenomenon of the Midnight Sun in the _____ and _____ Circles.

c) What would happen if the axis of the Earth was vertical to the plane of the orbit?

Ans: If the Earth's axis were vertical to its orbit, there would be no _____, so we wouldn't have _____. Every place on Earth would receive the _____ amount of sunlight throughout the year, leading to a constant climate. The poles would be _____ and _____, while the _____ would be hot and sunny all year round, without the seasonal changes we currently experience.

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