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CLASS: VII	SUB: SOCIAL SCIENCE	TOPIC: GEOGRAPHY	CH-2
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Weather around us

A. Tick (✓) the correct option.

1. What is the layer of gases that surrounds the Earth called? **Atmosphere**
2. Which weather element tells us how hot or cold the air is? **Temperature**
3. Which of the following is not a form of precipitation? **Dew**
4. The motto of the India Meteorological Department (IMD) is: "**ādītyāt jāyate vrishti**"
5. What is the name of the scientist who studies weather? **Meteorologist**
6. Which weather element is the weight of the air pressing down on Earth's surface?
Atmospheric Pressure
7. What is the instrument used to measure wind speed? **Anemometer**

B. Fill in the blanks:

1. Any kind of water that falls from the atmosphere to the Earth is called **precipitation**.
2. A low-pressure system can be called a **depression** or cyclone.
3. The amount of water vapour in the air is called **humidity**.
4. The unit for measuring air pressure is the **millibar (mb)**.
5. The India Meteorological Department (IMD) is our main agency for **weather** forecasting.
6. The instrument used to measure humidity is called **hygrometer**.
7. The lowest layer of the Earth's atmosphere is the **troposphere**.

C. Match the weather element with the correct instrument used to measure it:

Weather Element	Instrument
1. Temperature	Thermometer
2. Wind Speed	Anemometer
3. Wind Direction	Wind Vane
4. Precipitation	Rain Gauge
5. Atmospheric Pressure	Barometer
6. Humidity	Hygrometer

D. Answer the following questions in brief:

1. What is weather, and what are its main components?

Weather is what the air around Earth is like at a certain time and place. It includes temperature, precipitation, atmospheric pressure, wind and humidity.

2. Describe the troposphere and its importance.

The troposphere is the lowest layer of the atmosphere where almost all weather occurs it is thicker at the equator and thinner at the poles.

3. What is precipitation? Name two different forms of it.

Precipitation is any kind of water that falls from the atmosphere to the earth it happens when water vapour in the air cools down and changes back into a liquid or solid. The different forms of precipitation are rain and snow.

4. Why is it important to measure weather elements using common standards?

We need to measure whether elements precisely using common standard. Knowing the exact temperature and how much rain well helps everyone understand and compare whether conditions accurately.

5. What is an Automated Weather Station (AWS), and what is its main advantage?

Automated weather station collect information on temperature humidity wind speed and direction rain and air pressure. A w s provide quick and exact weather information which is useful for feel like farming and watching our environment.

6. Why do people feel dizzy or tired when they climb very high mountains?

Air pressure is usually higher near the sea coast and lower as we go higher up in the mountains full stop this is why we might feel breathless disease or tired if we climb very high there is less air pressure and so less oxygen.

7. What is the difference between sleet and hail?

Sleet is a mix of frozen and partly frozen rain.

Hail is precipitation in the form of small, hard balls of ice.

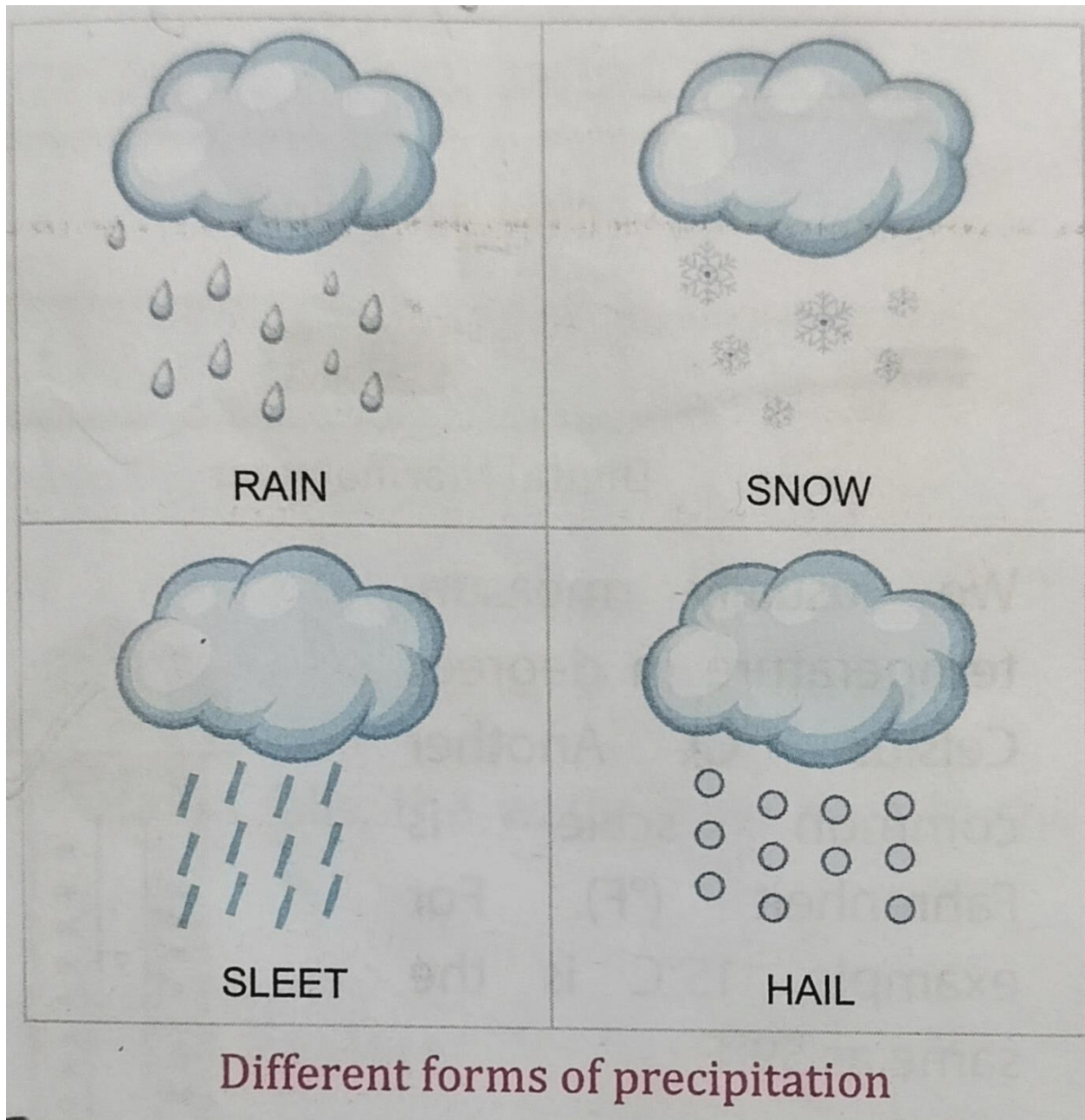
E. Answer the following questions in detail:

1. Describe the various types of precipitation. How does precipitation happen?

Precipitation is any kind of water that falls from the atmosphere to the Earth. It happens when water vapour in the air cools down and change back into a liquid or a solid.

There are several different forms precipitation:

1. Rain is liquid water that falls from the clouds.
2. Snow is frozen water that falls as soft white flakes.
3. Sleet is a mix of frozen and partly frozen rain.
4. Hail is precipitation in the form of small hard balls of ice.



2. Why is atmospheric pressure so important for understanding weather? Explain how it can affect human beings and weather patterns.

Atmospheric Pressure (Air Pressure) is the weight of the air pressing down on Earth's surface. When the air feels 'heavy' before a storm, that's often due to changes in air pressure. Air pressure is usually higher near the sea coast and lower as we go higher up into the mountains. This is why you might feel breathless, dizzy, or tired if you

climb very high, there's less air pressure and so less oxygen. Sometimes, air pressure drops a lot, creating a 'depression' or 'low-pressure system', which can even become a storm or cyclone.

3. Discuss the different scientific tools used by meteorologists to measure weather. Explain what each tool measures and how it works.

Weather measurement tools include:

1. **Thermometer:** Measures air temperature using mercury, alcohol, or digital sensors.
2. **Rain Gauge:** Collects and measures the amount of rainfall in millimetres.
3. **Barometer:** Measures atmospheric pressure. A fall in pressure usually indicates bad weather.
4. **Wind Vane:** Shows the direction from which the wind is blowing.
5. **Anemometer:** Measures wind speed using rotating cups.
6. **Hygrometer:** Measures humidity (moisture in the air).

4. Explain the concept of humidity and how it is measured. Provide real-life examples of how humidity affects our daily lives.

Humidity is the amount of water vapour in the air. On a humid day, the air feels sticky because there's a lot of water vapour in it.

To measure humidity, the amount of water vapour in the air, we use hygrometer.

We might notice wet clothes dry faster on a less humid day. Also, we sweat more on humid days because our sweat can't evaporate easily into the already watery air.

6. Describe the different layers of the Earth's atmosphere.

The different layers of the Earth's atmosphere are :-

1. **Troposphere:** This is the lowest layer, where we live and breathe. It's where almost all the weather you experience happens, from rain and wind to sunshine and snow.
2. **Stratosphere:** This layer is above the troposphere. It contains the ozone layer, which protects us from the Sun's harmful ultraviolet (UV) rays.
3. **Mesosphere:** Above the stratosphere, this is the coldest layer of the atmosphere. When meteors enter our atmosphere, they usually burn up in the mesosphere, creating shooting stars.

4. **Thermosphere:** This layer is above the mesosphere and is very hot. Satellites and the International Space Station orbit within this layer. It also contains the ionosphere, which helps with radio communication.

5. **Exosphere:** This is the outermost layer of the atmosphere, where it slowly fades into outer space. The air here is extremely thin.

