INDIAN SCHOOL AL WADI AL KABIR

Class: VII	Department: SOCIAL SCIENCE	Subject: Geography
Chapter 2 Worksheet: 3	Topic: Understanding the Weather	Year :2026-27

I	Choose the correct answer: -
Q 1	**What is the lowest layer of the atmosphere where weather changes take place?** A. Stratosphere **B. Troposphere** C. Mesosphere D. Thermosphere
Q 2	**Which instrument is used to measure temperature?** A. Barometer B. Rain gauge **C. Thermometer** D. Anemometer
Q 3	**What does a rain gauge measure?** A. Wind speed B. Temperature C. Air pressure **D. Rainfall**
Q 4	**Which instrument measures wind speed?** A. Wind vane B. Thermometer **C. Anemometer** D. Barometer
Q 5	**Which unit is used to measure atmospheric pressure?** A. Celsius B. Kilometers **C. Millibar** D. Litres
Q 6	**Match the weather element to its Description**

	Weather Element		Description
i	Temperature	a	Movement of air from high to low pressure
ii	Precipitation	b	Degree of hotness or coldness
iii	Wind	c	Amount of water vapour in the air
iv	Humidity	d	Any form of water falling from the sky

Options:
A. i-d; ii-a; iii-c; iv-b
B. i-b; ii-d; iii-a; iv-c
C. i-a; ii-c; iii-b; iv-d

	D. i-b; ii-a; iii-d; iv-c
Q 7	**There are two statements in each question marked as Assertion (A) and Reason (R). Choose your answer as per the options given:** (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 true but (R) is false. (d) (A) is false but (R) is true.
i	**Assertion (A): The troposphere is the layer where weather occurs.** **Reason (R): The troposphere is the lowest layer of the atmosphere.** Ans: (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
ii	**Assertion (A): A barometer measures atmospheric pressure.** **Reason (R): Atmospheric pressure is the weight of the air above us.** Ans: (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
iii	**Assertion (A): Anemometers measure wind direction.** **Reason (R): Wind direction is indicated by a wind vane.** Ans: (d) (A) is false but (R) is true.
II	**Very short answers: -**
Q 8	**How is fresh water obtained?** Ans: The fresh water is obtained from precipitation, surface water (rivers, lakes, etc) and groundwater that is continually being renewed and recharged through the hydrological cycle.
Q 9	**What is the significance of Automated Weather Stations (AWS)?** Ans: AWS collect weather data automatically using sensors, which helps in agriculture, aviation, and disaster management without needing human involvement.
Q 10	**How is rainfall measured using a rain gauge?** Ans: Rainwater is collected in a cylinder through a funnel, and the depth of collected water is measured using a scale, typically in millimetres.
Q 11	**What is the importance of measuring humidity in museums and industries?** Ans: Museums monitor humidity to preserve artifacts, while industries like food processing require specific humidity levels to maintain product quality and safety.
Q 12	**What are the main elements of weather?** Ans: The main elements of weather are temperature, precipitation, wind, humidity, and atmospheric pressure.
III	**Short answers: -**
Q 13	**Why is weather prediction important in recent times?** Ans: • Weather prediction is crucial due to the increased frequency of extreme weather events like floods and droughts caused by climate change. • It helps in disaster preparedness and planning.
Q 14	**How do meteorologists predict the weather using modern tools?** Ans: • Meteorologists collect data from instruments like thermometers, barometers, anemometers, and hygrometers at weather stations. • They analyze long-term trends and use computer models to forecast weather conditions for the next hours, days or weeks.
Q 15	**How have traditional methods helped people forecast weather?** Ans: • People observed nature for signs like ants moving their eggs before rain or pine cones opening in dry weather.

	• These natural behaviors often indicated changes in humidity or pressure and helped communities prepare for upcoming weather.
Q 16	**What are weather stations, and how do they function?** Ans: • Weather stations collect data from instruments that measure temperature, humidity, wind, pressure, and precipitation. • Readings are taken regularly, and the collected data is used to create weather maps and forecasts.
Q 17	**Explain the role and importance of Automated Weather Stations (AWS), with an example.** Ans: • AWS are self-operating units with sensors to monitor various weather parameters without human help. • They are important for remote monitoring, especially in agriculture and disaster-prone areas. For example, in 2023, an AWS was set up at a glacial lake in Sikkim at an altitude of 4,800 metres for early disaster warnings.
IV	**Long Answers: -**
Q 18	**What is atmospheric pressure? How is it measured, and what are its implications?** Ans: • Atmospheric pressure is the force exerted by the weight of air on Earth's surface. • It is measured in millibars (mb) using a barometer. • Normal pressure at sea level is about 1,013 mb. • A drop below 1,000 mb can indicate a depression, storm or cyclone.
Q 19	**Explain how humidity and temperature are related.** Ans: Temperature affects humidity because warm air can hold more water vapour than cold air. • When the temperature increases, evaporation increases and more moisture enters the air. Warm air can store more moisture, so humidity may become high. • When the temperature decreases, air cannot hold much moisture. Excess water vapour condenses into dew, fog, or rain when the air cools. • High humidity makes us feel hotter because sweat evaporates slowly from our bodies. Low humidity helps sweat evaporate faster, making us feel cooler. • Places with both high temperature and high humidity often feel sticky and uncomfortable.
V	**Case-based Questions and Answers: -**
Q 20	A wind vane (or weather vane) is a meteorological instrument that measures wind direction by rotating on a vertical axis to align with the wind, pointing in the direction the wind is coming from. Often featuring a pointer (arrow) and a tail, it is commonly placed on high points to avoid obstructions. **(i) What does a wind vane indicate?** A wind vane indicates the direction of the wind. **(ii) Who finds the wind vane especially helpful?** Pilots find the wind vane especially helpful during take-off and landing. **(iii) How does a wind vane work and what does it show?** A wind vane has a rotating arm with a pointer and a tail. It rotates to align with the wind, and the arrow points towards the wind's source, showing the wind's direction.