

Class- 7

SSC Worksheet

Ch- Air

Q1. While trekking in the Himalayas, a group of students reached a high-altitude campsite. Despite carrying oxygen cylinders, many of them felt dizzy, weak, and found it extremely difficult to even climb small slopes. The local guide explained that the air composition had not changed, but still breathing was harder. Based on this, which is the most accurate cause of their discomfort?

- a) Lower air pressure reduces oxygen intake in each breath
- b) Higher levels of nitrogen replace oxygen completely
- c) Greater humidity makes oxygen less available
- d) Rapid fall in carbon dioxide reduces balance of gases

Q2. A farmer in a coastal village observed that during the peak of the monsoon season, even after long sunny intervals, the clothes he hung outside would not dry properly, his harvested grains retained moisture, and stored vegetables started rotting quickly. He wondered why these problems persisted despite warm conditions. Which factor best explains this situation?

- a) The sunlight is too weak to cause evaporation
- b) The surrounding air is already saturated with moisture
- c) The strong winds carry away water vapour
- d) The soil absorbs most of the surface water vapour

Q3. An international flight flying from Delhi to London usually cruises at a very high altitude where passengers experience smoother journeys with less turbulence. The pilots explained that they prefer a certain atmospheric layer because it is almost free from clouds and weather disturbances, making it safest for air travel. Which layer is being referred to here?

- a) Mesosphere
- b) Stratosphere
- c) Troposphere
- d) Thermosphere

Q4. On a scorching afternoon in northern India, a family travelling in a car experienced sudden hot gusts of wind entering through open windows. The heat was so intense that the children complained of burning sensations on their skin, and travellers nearby rushed to seek shade. Which local wind is responsible for such discomfort during summer months?

- a) Monsoon winds
- b) Westerlies
- c) Loo
- d) Land breeze

Q5. Scientists warn that if the protective atmospheric layer that filters harmful ultraviolet rays were to disappear completely, daily life would be severely affected. People would develop more skin cancers, crops would wither, and even marine plankton would decline due to harmful solar radiation. Which gas layer's depletion would cause such consequences?

- a) Ozone
- b) Oxygen
- c) Nitrogen
- d) Carbon dioxide

Q6. During a devastating cyclone, people in a coastal town of Odisha reported that not only did strong winds uproot trees and damage houses, but suddenly huge walls of seawater rushed inland, flooding paddy fields and destroying livestock. The destruction was maximum not from the winds but from the advancing seawater. What exactly caused this large-scale destruction?

- a) High clouds forming over sea
- b) Tidal surges moving inland
- c) Fall in temperature of air
- d) Weak rainfall for many days

Q7. Residents in a crowded city noticed that summer afternoons felt unbearably hot compared to nearby villages. Roads and buildings seemed to radiate heat even at night, and tall buildings trapped warm air, making nights sleepless. Scientists explained that this is a direct result of urban development. Which factor among the following is the most accurate reason?

- a) Villages lie closer to the poles
- b) Asphalt and concrete trap and release heat
- c) Villages receive less sunlight
- d) Winds blow stronger in villages

Q8. A fisherman set sail in the morning and noticed a cool breeze blowing from the sea towards the land. This helped him navigate smoothly and kept the temperature pleasant onshore. He explained that such breezes always occur in the daytime when land heats faster than the adjoining water bodies. Which phenomenon is he experiencing?

- a) Warm air blowing from land to sea
- b) Cool air moving from sea to land
- c) Equal pressure over land and sea
- d) Random shift of wind direction

Q9. A ham radio operator found that at night, his signals were clearly received thousands of kilometres away, whereas during the day they were weaker. He explained this to his students by pointing to a particular atmospheric layer that reflects radio waves back to Earth. Which layer is primarily responsible for this phenomenon?

- a) Mesosphere

- b) Ionosphere
- c) Troposphere
- d) Exosphere

Q10. A small hill village faced repeated flash floods after massive deforestation. Earlier, dense forests on slopes had slowed down rainfall runoff, but now rainwater rushed down bare hills, eroding soil and washing away houses. Which explanation best describes why floods increased after deforestation?

- a) Rainfall completely decreased after cutting trees
- b) Rainwater directly runs down slopes without absorption
- c) The soil evaporates too much water
- d) Humidity becomes very low in the valley

Q11. Farmers along coastal areas noticed that seawater began entering their fields, damaging paddy and vegetable crops. They linked this to climate change, as ice from polar regions had begun melting rapidly. Which impact of global warming best explains this situation?

- a) Longer duration of winter
- b) Seawater intrusion due to rising sea levels
- c) Permanent reduction of oxygen in air
- d) Complete disappearance of rainfall

Q12. A domestic flight was grounded suddenly when dense fog covered the airport, reducing visibility to nearly zero. Passengers argued that the weather had been cold and moist for days. Which scientific explanation is most accurate for such fog formation?

- a) Increase of ozone concentration in the air
- b) Condensation of water vapour near ground level
- c) Sudden change in air pressure belts
- d) Strong winds carrying dry dust particles

Q13. In a science experiment, students observed that when air inside a bottle was heated, it expanded, became lighter, and moved upward. Immediately, cooler air from surrounding areas rushed in to replace it. Teachers explained that this simple experiment demonstrated one of the most basic processes of the atmosphere. What does this process represent?

- a) Greenhouse effect
- b) Air circparticle
- c) Soil erosion
- d) Photosynthesis

Q14. A farmer in Odisha realised that paddy grew exceptionally well after cyclonic rains. Unlike light showers, these rains were continuous and very heavy, soaking the soil for long durations. Which feature of cyclonic rainfall explains why paddy farming benefits from it?

- a) Heavy and continuous downpour
- b) Rain is absent during summer
- c) Rain occurs only at night
- d) Rain is very light and scattered

Q15. Agricultural scientists warned that without certain microbes in soil, crops would weaken severely. These microbes live in plant roots and convert atmospheric nitrogen into usable form for plants. If these microbes disappeared, what would be the immediate consequence?

- a) Plants would lack usable nitrogen
- b) Oxygen in air would increase suddenly
- c) Carbon dioxide would vanish from soil
- d) Rainfall would reduce completely

Q16. A student tried to walk with an umbrella on a windy day but found it nearly impossible. The umbrella kept turning inside out because air moved strongly in one direction. His teacher explained that such force results when air moves due to differences in pressure. Which principle does this situation illustrate?

- a) Air always moves from high to low pressure
- b) Nitrogen in air suddenly expands
- c) Ozone presses downward on objects
- d) Humidity in air reduces sharply

Q17. A group of tourists collected one week's weather reports of Rajasthan showing hot days and cool nights. One of them concluded that this was the "climate" of Rajasthan. The guide corrected him, explaining the difference between weather and climate. Which statement best explains why the tourist's conclusion was wrong?

- a) Climate is based on long-term averages, not one week
- b) Climate depends only on cloud conditions
- c) Weather never changes from day to day
- d) Climate shifts every few weeks

Q18. When water vapour rises, cools, and condenses into tiny droplets around dust particles, they combine and float in the sky. Over time, they may fall as precipitation. Which immediate phenomenon is described here?

- a) Winds
- b) Clouds
- c) Pressure belts
- d) Soil moisture

Q19. A valley received abnormally high rainfall for consecutive years. The rivers overflowed, low-lying fields drowned, and houses collapsed. People understood that

such long-term heavy rainfall exceeded the land's capacity. What explains the floods in this situation?

- a) Soil could not absorb the excess rainfall
- b) Insolation weakened permanently
- c) Ozone concentration increased in air
- d) Air pressure rose sharply

Q20. Scientists explained to school children that despite both receiving sunlight, the poles remain frozen while equatorial regions remain hot. The reason lies in how solar energy reaches the Earth's surface. Which explanation is most accurate?

- a) Insolation decreases from equator towards poles
- b) Humidity is higher near poles
- c) Poles are nearer to ozone
- d) Clouds are absent over polar areas