

1. At what concentration (in ppm), is nitrogen present in the atmosphere?

- a) 780,840
- b) 390,420
- c) 78,084
- d) 900,000

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Answer: a

Explanation: Nitrogen constitutes 78% of the atmosphere. So 78% of one million = 780,840 ppm - is the concentration of nitrogen gas in the atmosphere.

2. In the lower layers of atmosphere, what range of wavelengths of light is predominant?

- a) Less than 100 nm
- b) Greater than 300 nm
- c) Between 100-300 nm
- d) All wavelengths are equally present

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Answer: b

Explanation: In the lower layers of atmosphere, light of wavelengths greater than 300nm are present and it is because of this reason, there is generally no ozone formation at the ground level.

3. What does the ratio of the mass of water vapour to mass of air indicate?

- a) Absolute humidity
- b) Specific humidity
- c) Relative humidity
- d) Approximate humidity

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Answer: b

Explanation: Specific humidity is the mass of water vapour per unit mass of air mixture.

4. What is the region of mild and irregular wind in the equatorial region known as?

- a) Trade winds
- b) Westerlies
- c) Doldrums
- d) Easterlies

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Answer: c

Explanation: Doldrums are the irregular winds and their exact location is hard to analyse. Ships in the region of doldrums might restrict its movement due to lack of proper wind.

5. "Roaring forties" is the term used to describe which of the following winds?

- a) East-to-west air winds in the southern hemisphere
- b) West-to east air winds in the northern hemisphere
- c) East-to-west air winds in the northern hemisphere
- d) West-to-east air winds in the southern hemisphere

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Answer: d

Explanation: Roaring forties found in the southern hemisphere are strong westerly winds caused by air displaced from equator to the South Pole and aid yachtsmen in on competitions and voyages.

6. Match the following:

- | | | |
|----|------------------|-------------------------------------|
| A. | Hurricane | 1.Indian Ocean and South Pacific |
| B. | Typhoon | 2.Low level air circulation |
| C. | Cyclone | 3.Northeastern Pacific and Atlantic |
| D. | Tropical Cyclone | 4.Northwestern Pacific |

- a) A-1; B-3; C-2; D-4
- b) A-3; B-4; C-1; D-2
- c) A-2; B-3; C-4; D-1
- d) A-3; B-2; C-1; D-4

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Answer: b

Explanation: Hurricane, typhoon, cyclone are all used to categorise the same type of storm but differ based on their locations across the world. Tropical cyclone is a low level closed air circulation which is classified as a hurricane/typhoon/cyclone if wind speed exceeds 120km/hr.

7. Which of the following statements is true?

- a) Troposphere is equally thick across different parts of the world
- b) Troposphere contains the ozone layer
- c) Troposphere is thinner at the equator than at the poles
- d) Troposphere is thicker at the equator than at the poles

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Answer: d

Explanation: Troposphere is nearly 16-17km thick at the equator and thins down to approximately 8km at the poles.

8. The temperature decreases with altitude in the stratosphere layer.

- a) True
- b) False

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Answer: b

Explanation: Temperature slightly increases with altitude in the stratosphere due to absorption of UV radiations from the sun, by the ozone layer present in the stratosphere.

9. Which of the following indicates the correct order of the principal layers of the earth's atmosphere from top to bottom?

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

View Answer

Answer: c

Explanation: Exosphere is the outermost layer of the atmosphere followed by mesosphere, thermosphere, stratosphere and troposphere.

10. Which layer of the atmosphere is responsible for aurora formation?

- a) Ozone layer
- b) Stratosphere
- c) Exosphere
- d) Ionosphere

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Answer: d

Explanation: Ionosphere is a secondary layer of the atmosphere which extends through mesosphere, thermosphere and exosphere during day time and is responsible for aurora - natural light display in the sky in high altitude region.

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11. Which of the following mentioned layers is NOT a homosphere?

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

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Answer: a

Explanation: Homospheric layers of atmosphere include layers where chemical composition is independent of molecular weight of gases due to mixing by turbulence. Hence the lower layers such as troposphere, ionosphere and mesosphere are homospheres.

12. Turbopause is highest layer of the homosphere.

- a) True
- b) False

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Answer: a

Explanation: Turbopause marks the height at which homogenous layer, the homosphere ends. Below the turbopause, turbulent mixing of air dominates.

13. The planetary boundary layer belongs to which of the following atmospheric layers?

- a) Exosphere
- b) Ionosphere
- c) Stratosphere
- d) None of the mentioned

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Answer: d

Explanation: The planetary boundary layer is the lowermost level of the atmosphere and it belongs to troposphere.

14. What is the atmospheric pressure at sea level?

- a) 101325 Pa
- b) 14.696 psi
- c) 760 Torr
- d) All of the mentioned

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Answer: d

Explanation: As per International Standard Atmosphere, at sea level atmospheric pressure is equal to 101325 Pa which is equal to 14.696 psi and 760 Torr.

15. By international convention, which line marks the outermost boundary of the Earth's atmosphere?

- a) Space line
- b) Boundary line
- c) Karman line
- d) Astronaut line

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Answer: c

Explanation: The Karman line lies at an altitude of 100km, between the atmospheric boundary of the Earth and outer space.

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