

2 points Save Answer

A 1-kilogram parcel of air is at 35°C and contains 7 grams of water vapor. What is the relative humidity?

TABLE 12.1 Amount of Water Vapor Needed to Saturate 1 Kilogram of Air at Various Temperatures

Temperature °C (°F)	Water-Vapor Content at Saturation (grams)
-40 (-40)	0.1
-30 (-22)	0.3
-20 (-4)	0.75
-10 (14)	2
0 (32)	3.5
5 (41)	5
10 (50)	7
15 (59)	10
20 (68)	14
25 (77)	20
30 (86)	26.5
35 (95)	35
40 (104)	47

Question Completion Status:

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- ☐ 20%
☐ 40%
☐ 50%
☐ 70%

Question 5

2 points Save Answer

The tops of tall mountains are much colder than surrounding lowlands. This is evidence of _____.

- ☐ solar heating
☐ global warming
☐ the environmental lapse rate
☐ ozone depletion

Question 6

14 points Save Answer

Match the term with the correct description.

- ☒ Deposition
☒ Condensation
☒ Melting
☒ Humidity
☒ Vapor pressure
☒ Dew point
☒ Absolute instability

- A. This process results in the absorption of about 80 calories of latent heat per gram of water
 B. The general term for the amount of water vapor in the air
 C. The process by which water vapor changes to a liquid
 D. The process by which water vapor changes directly to a solid
 E. The temperature at which saturation occurs
 F. The part of the total atmospheric pressure that can be attributed to the water-vapor content
 G. The results of a situation where the environmental lapse rate is greater than the dry adiabatic rate (This occurs

Question 7

14 points Save Answer

Match the term with the correct description

- ☐ Air
- ☐ Environmental lapse rate
- ☐ Weather
- ☐ Radiosonde
- ☐ Aerosols
- ☐ Ozone
- ☐ Climate

- A. A mixture of many discrete gases, including water vapor, as well as variable components like dust and small liquid droplets
- B. The change in temperature over changes in altitude in the atmosphere
- C. The state of the atmosphere at a particular time and place
- D. A package of instruments attached to a balloon
- E. Liquid droplets or solid particles in the atmosphere
- F. Three oxygen atoms in one molecule
- G. A generalization of the weather conditions that is typical of a place

Question 8

8 points Save Answer

Compare and contrast weather and climate and how the atmosphere affects both.

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Question 9

8 points Save Answer

In the picture below, explain why the balloons are rising in terms of atmospheric stability. What effect does water vapor have on atmospheric stability?



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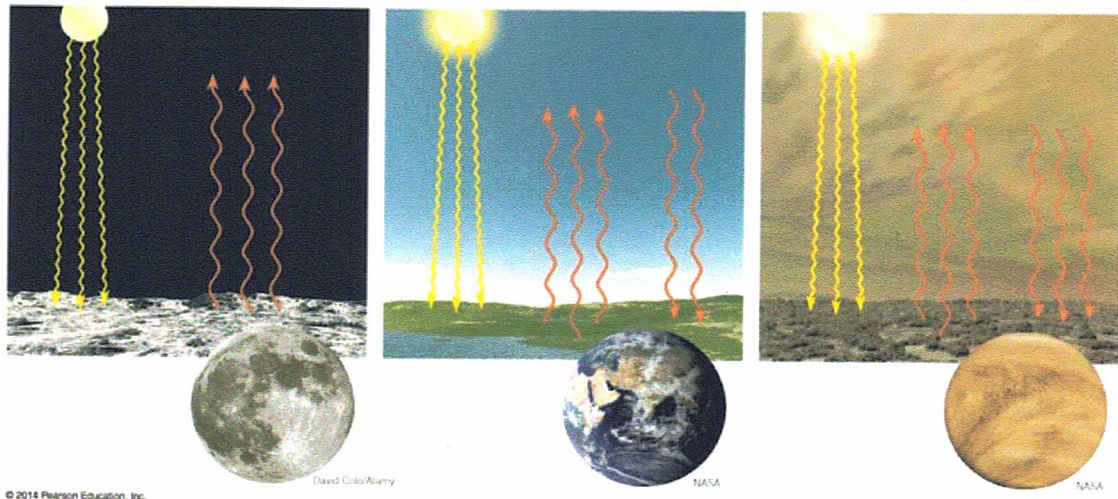
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Question 10

8 points

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Examine the figures below. Contrast the role the greenhouse effect plays in the atmospheres of (a) the Moon, (b) Earth, and (c) Venus.



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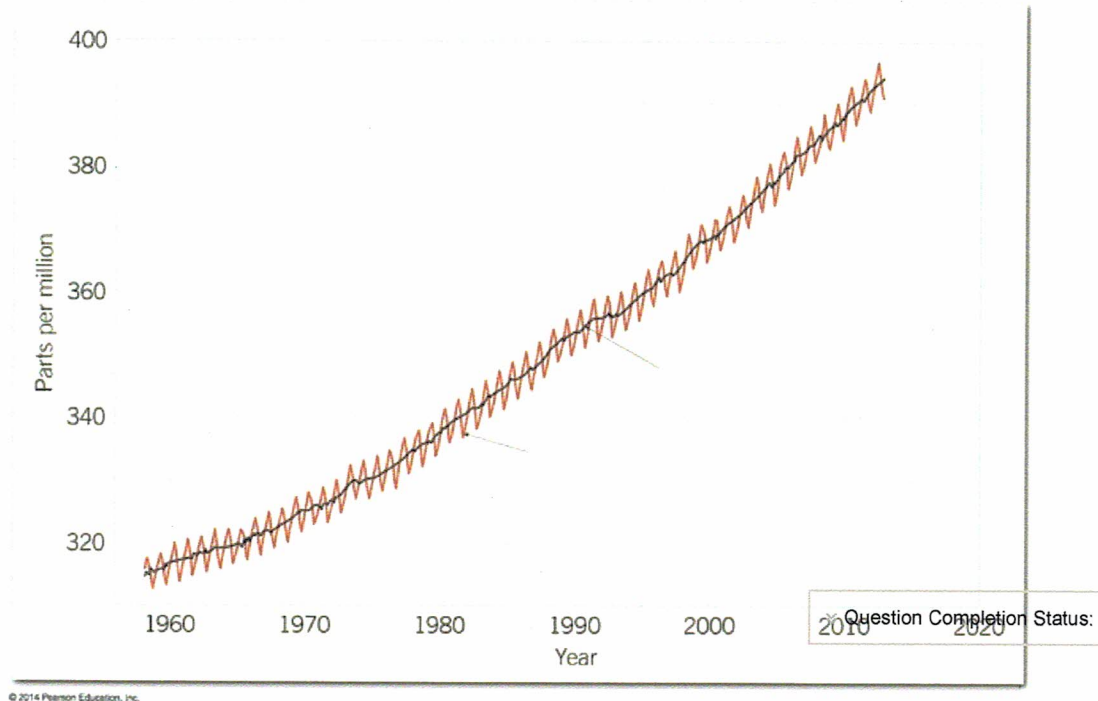
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Question 11

8 points Save Answer

Examine the graph below. In your own words, describe why we see a seasonal difference in CO₂ concentration in the atmosphere.



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Question 12

30 points Save Answer

Considering the albedo of various surfaces, how might temperatures differ between urban and rural areas? Which setting tends to be warmer on a given day and why? Also, are there any factors other than albedo that might affect the temperature differences between the two settings?

Your response should be at least 200 words in length.

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3 (12pt)

