ESS55: Earth's Atmosphere / Homework #1 (due 4/17/2012)					
Multiple Choice Identify the letter of the choice that best completes the statement or answers the question.					
1.	The electrified region of the upper atmosphere is called the: a. thermosphere b. mesosphere c. stratosphere d. ionosphere e. troposphere				
2.	Atmospheric concentrations of carbon dioxide tend to go up and down throughout the course of a year. The maximum concentration occurs in what season of the year? a. early spring b. late summer				
3.	Much of Tibet lies at altitudes over 18,000 feet where the pressure is about 500 mb. At such altitudes, the Tibetans are above roughly: a. 10% of the air molecules in the atmosphere b. 25% of the air molecules in the atmosphere c. 50% of the air molecules in the atmosphere d. 75% of the air molecules in the atmosphere				
4.	The amount of force exerted over an area of surface is called: a. density b. weight c. temperature d. pressure				
5.	In a temperature inversion: a. air temperature increases with increasing height b. air temperature decreases with increasing height c. air temperature remains constant with increasing height d. it is warmer at night than during the day				
6.	This holds a planet's atmosphere close to its surface: a. radiation b. gravity c. cloud cover d. moisture e. pressure				
7.	As altitude increases in the atmosphere, air density decreases the decrease in air pressure. a. in a completely different way than b. much less than c. much more than d. in much the same way as				
8.	The most abundant gas in the <u>stratosphere</u> is: a. oxygen (O ₂) b. nitrogen (N ₂) c. carbon dioxide (CO ₂) d. ozone (O ₃) e. chlorofluorocarbons (CFCs)				

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9.	Which below is not considered a greenhouse gas?
	a. carbon dioxide (CO ₂)
	b. nitrous oxide (N_2O)
	c. water vapor (H ₂ O)
	d. methane (CH ₄)
	e. oxygen (O_2)
10.	Which of the following processes acts to remove carbon dioxide from the atmosphere?
 10.	a. lightning
	b. deforestation
	c. photosynthesis
	d. burning fossil fuels
11.	Warming in the stratosphere is mainly caused by:
	a. absorption of ultraviolet radiation by ozone
	b. release of latent heat energy during condensation
	c. chemical reactions between ozone and chlorofluorocarbons
	d. frictional heating caused by meteorites
 12.	The most abundant gas emitted from volcanoes is:
	a. nitrogen
	b. sulfur dioxide
	c. helium
	d. carbon dioxide
12	e. water vapor
 13.	The unit of pressure most commonly found on a surface weather map:
	a. inches of mercury (Hg)b. millibars
	c. pounds per square inch
	d. millimeters of mercury (Hg)
14.	The rate at which temperature decreases with increasing altitude is known as the:
 17.	a. temperature slope
	b. lapse rate
	c. sounding
	d. thermocline
 15.	In the stratosphere, the air temperature normally:
	a. decreases with increasing height
	b. increases with increasing height
	c. both increases and decreases depending on the season
	d. cannot be measured
 16.	Almost all of the earth's weather occurs in the:
	a. exosphere
	b. stratosphere
	c. mesosphere
	d. thermospheree. troposphere
17	• •
 17.	In the atmosphere, tiny solid or liquid suspended particles of various composition are called: a. aerosols
	a. aerosols b. carcinogens
	c. greenhouse gases
	d. microbes

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18. Most of the ionosphere is found in what atmospheric layer? a. troposphere b. stratosphere c. mesosphere d. thermosphere 19. The hottest atmospheric layer is the: a. stratosphere b. mesosphere c. thermosphere c. thermosphere d. troposphere 20. The most abundant greenhouse gas in the earth's atmosphere: a. carbon dioxide (CO ₂) b. nitrous oxide (N ₂ O) c. water vapor (H ₂ O) d. methane (CH ₃) e. chlorofluorocarbons (CFCs) 21. Which of the following are <u>not</u> units of pressure? a. millibars b. newtons c. inches of mercury (Hg) d. pascals 22. The primary source of oxygen for the earth's atmosphere during the past half billion years or so appears to be: a. volcanic cruptions b. photosynthesis c. photodissociation d. exhalations of animal life c. transpiration 23. The outpouring of gases from the earth's hot interior is called: a. evaporation b. outgassing c. photodissociation d. the hydrologic cycle 24. The most abundant gases in the earth's atmosphere by volume are: a. carbon dioxide and nitrogen b. oxygen and water vapor c. nitrogen and oxygen d. oxygen and vater vapor b. nitrogen c. oxygen d. argon 26. Typically, water vapor occupies about what percentage of the air's volume near the earth's surface? a. about 78% b. about 21% c. close to 10% d. less than 4%		
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a. about 78%b. about 21%c. close to 10%	26	
b. about 21%c. close to 10%	 26.	
c. close to 10%		
		d. less than 4%

Name: _____

Name	·	
	27.	The gas that shows the most variation from place to place and from time to time in the lower atmosphere: a. $ozone(O_3)$ b. $carbon\ dioxide\ (CO_2)$ c. $water\ vapor\ (H_2O)$ d. $methane\ (CH_4)$ e. $argon\ (Ar)$
	28.	The earth's first atmosphere was composed primarily of:
		a. carbon dioxide and water vapor
		b. hydrogen and helium
		c. oxygen and water vapord. argon and nitrogen
	29.	Which of the following weather elements <u>always</u> decreases as we climb upward in the atmosphere? a. wind b. temperature c. pressure d. moisture
	•	e. all of the above
	30.	The temperature of the tropopause:
		a. is close to the temperature at the earth's surface
		b. is much colder than the temperature at the earth's surfacec. has never been measured
		d. is much warmer than the temperature at the earth's surface
		was verification of the contract

e. is nearly the same as the sun's temperature