Name: _____ Date: _____ Pd: _____ Unit 6 Formative Assessment – Atmosphere & Weather

1. Fill in the blanks in the diagram below: mesosphere, troposphere, thermosphere, and stratosphere.



2.	In which layer does most weather occur?
	In which layer would you find the ozone?
	In which layer do temperatures rise the highest?
	In which layer do meteors burn up?

- 3. Circle the correct phrase or fill in the blank to make each sentence correct:
- a. Places at higher elevations tend to be (warmer/colder) than places at lower elevations.
- b. As latitude increases, the intensity of solar radiation *increases/decreases*.
- c. Warm air is *less dense/denser* than cold air.
- d. Cold air can hold *more/less* water vapor than warm air.
- e. Topographic features such as mountains play an important role in amount of ______ that falls over an area. The *windward/leeward* side of the mountain will receive more rain.
- f. Global winds are a factor that distribute______ and _____ around the Earth.
- 4. <u>DRAW</u> the symbol (including its *color*) of each of the four (4) weather fronts <u>AND</u> describe the weather conditions most commonly associated with each:

a. Warm c. Stationary

b. Cold

d. Occluded

 Describe the weather conditions on <u>BOTH</u> the windward and leeward sides of a mountain in the following diagram.

Vindward Leeward side side Prevailing Winds Mountain
--

 Assess the weather map below. <u>LABEL</u> each item on the lines. <u>MARK</u> an "X" where the wind speeds would be highest. <u>CIRCLE</u> an area that likely experiences fair weather. <u>BOX</u> around an area that likely has precipitation.



- 7. Calculate the relative humidity:
- a. Dry bulb temp is 28°C and wet bulb temp is 21°C. ____%
- b. Dry bulb temp is 22°C and the difference is 10°C. ____%
- c. Dry bulb temp is -14°C and wet bulb temp is -16°C. ____%
- d. If the relative humidity is 100%, what is the weather likely to be? _____

Relative Humidity (%)

Dry-Bulb Tempera-	Difference Between Wet-Bulb and Dry-Bulb Temperatures (C°)															
ture (°C)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
-20	100	28														
-18	100	40												-		
-16	100	48												_		
-14	100	55	11													
-12	100	61	23											-		-
-10	100	66	33									_				
-8	100	71	41	13										-		
-6	100	73	48	20												
-4	100	77	54	32	11							-		-	-	
-2	100	79	58	37	20	1	_	-		-		-	-		-	
0	100	81	63	45	28	11			-	-		-		-	-	_
2	100	83	67	51	36	20	6							-	-	
4	100	85	70	56	42	27	14		-		-		-	_	-	
6	100	86	72	59	46	35	22	10						-		_
8	100	87	74	62	51	39	28	17	6					-		_
10	100	88	76	65	54	43	33	24	13	4				_		
12	100	88	78	67	57	48	38	28	19	10	2			-	-	
14	100	89	79	69	60	50	41	33	25	16	8	1		-		-
16	100	90	80	71	62	54	45	37	29	21	14	7	1			
18	100	91	81	72	64	56	48	40	33	26	19	12	6	_		
20	100	91	82	74	66	58	51	44	36	30	23	17	11	5		
22	100	92	83	75	68	60	53	46	40	33	27	21	15	10	4	
24	100	92	84	76	69	62	55	49	42	36	30	25	20	14	9	4
26	100	92	85	77	70	64	57	51	45	39	34	28	23	18	13	9
28	100	93	86	78	71	65	59	53	47	42	36	31	26	21	17	12
30	100	93	86	79	72	66	61	55	49	44	39	34	29	25	20	16

- 8. Which is coldest?
 - a. A high elevation at a high latitude
 - b. A low elevation at a low latitude
- c. A high elevation at a low latitude
- d. A low elevation at a high latitude
- 9. What is the most abundant gas in the atmosphere?
 - a. Oxygen c. Carbon Dioxide
 - b. Nitrogen d. Water Vapor
- 10. Earth receives energy from the Sun through which method of heat transfer?
 - a. Conduction c. Radiation
 - b. Convection d. Reflection



- 12. LABEL the anti-cyclone and the cyclone to the right.
- a. Label the high pressure system and low pressure system to the right.
- b. Describe the air *rotation* in each pressure system.
- c. Describe the horizontal and vertical air movement in each system.
- d. Which pressure system is associated with stormy weather?



cP cT mP -

mT -



13. <u>LABEL</u> the correct <u>seasons</u> in the <u>Northern Hemisphere</u> in the diagram below:



*** Complete the table below. Indicate the DATE of each season ***

NORTHERN H	EMISPHERE	SOUTHERN HEMISPHERE				
Season: Summer	Date:	Season: Summer	Date:			
Season: Fall	Date:	Season: Fall	Date:			
Season: Winter	Date:	Season: Winter	Date:			
Season: Spring	Date:	Season: Spring	Date:			

- 14. Which of the following is NOT a force that influences wind?
 - a. Coriolis Effect
- c. Pressure Gradient
- b. Magnetic Field
- d. Atmospheric Friction

- 15. What is true about the moisture content of warm air?
 - a. It can hold less water vapor than cold air
 - b. It can hold more water vapor than cold air
- c. It can hold same amount of water vapor as cold air
- d. It cannot hold any water vapor

16. If the water vapor content of air remains constant, lowering air temperature causes a(n) _____.

- a. Decrease in relative humidity
- c. Increase in evaporation
- b. Increase in relative humidity d. Temperature inversion
- 17. Which cloud type is described as layers that cover much of the sky?
 - a. Cumulus c. Stratus
 - b. Cirrus d. Alto
- 18. Which cloud type brings light precipitation?
 - a. Cumulus c. Stratus
 - b. Cirrus d. Alto
- 19. *LABEL* the temperature zones of the Earth as *temperate*, *polar*, or *tropical*.





- 20. *LABEL* each of the three (3) methods of heat transfer:
- 21. <u>LABEL</u> the diagram below illustrating the percentage of solar energy that is absorbed and/or reflected by the Earth (land/sea), clouds, and atmosphere:

