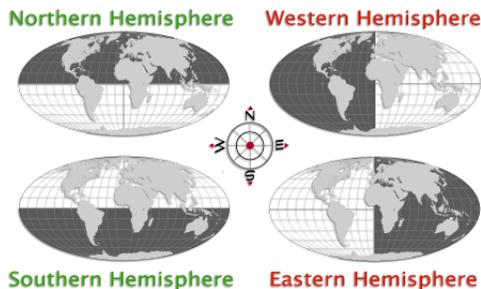


Name: _____ Date: _____ Pd: _____

Unit 7 Formative Assessment – Severe Weather & Climate

1. Which gases are responsible for the Greenhouse Effect?
2. The two most important heat-absorbing gases in the lower atmosphere are _____.
 - a. oxygen and nitrogen
 - b. ozone and chlorofluorocarbon
 - c. argon and hydrogen
 - d. water vapor and carbon dioxide
3. What is the enhanced greenhouse effect?
4. Circle the correct phrase that will make each statement correct:
 - a. Places at higher elevations tend to be (**warmer/colder**) than places at lower elevations.
 - b. Places near water have more (**extreme/moderate**) climates than places farther from water.
 - c. As latitude increases, the intensity of the solar energy **increases/decreases**.
 - d. Where an area is near **land/water**, the temperatures are more temperate.

5. Which hemisphere has the greatest temperature variations? What **MAJOR** factors make this true?



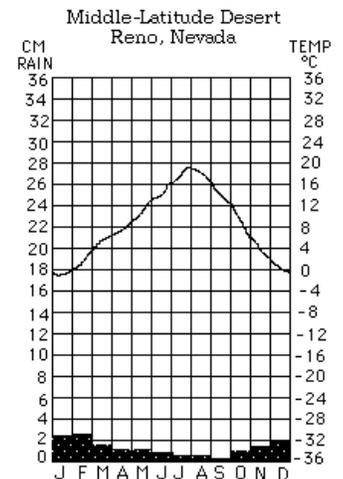
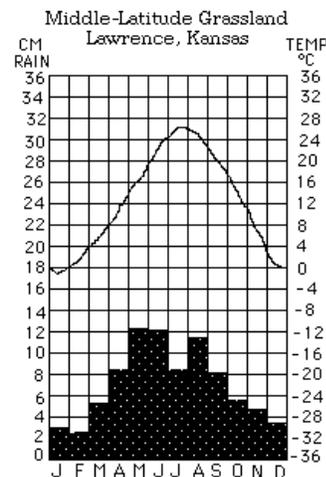
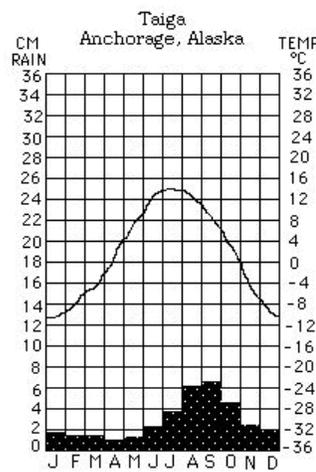
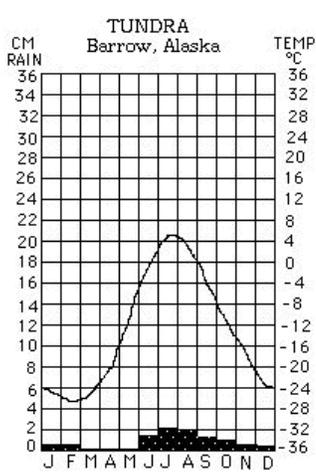
6. Which phenomenon is associated with surface temperatures in the eastern Pacific Ocean that are warmer than average? **El Niño** OR **La Niña**
7. An arid climate is (**wet/dry**). A humid climate is (**wet/dry**).
8. A significant change in carbon dioxide concentration in the atmosphere is likely caused by _____.
 - a. More frequent El Niño
 - b. Increase use of fossil fuels
 - c. Polar jet stream winds
 - d. Increased hydrothermal vents
9. **CIRCLE** all of the factors that determine Köppen climate zones: *temperature, elevation, latitude, precipitation, pressure, vegetation*

10. What is the main source of acid deposition in the Northeast United States?
- Ground level ozone
 - Nitrogen from volcanoes
 - Methane from thawing Siberian lakes
 - Sulfur dioxides from coal burning

11. What factors are included in an air quality index?

12. Using the climatograms below:

- What is the temperature **range** for Anchorage, Alaska? _____
- How much rain does Barrow Alaska get in August? _____
- Which of the four cities below has the greatest **average** amount of rainfall? _____
- What is the temperature of Reno in January? _____



13. During which stage of thunderstorm development would each of the following occur:

- Precipitation begins → _____
- Updrafts decrease → _____
- Cloud formation → _____
- Most intense stage → _____
- Updrafts and downdrafts create convection cell → _____
- Warm air runs out → _____

14. What conditions are necessary for a tornado to form?

15. What factor does the Enhanced Fujita scale use to determine the intensity of a tornado?

- Diameter of funnel
- Wind speeds
- Amount of damage caused
- Duration of tornado

16. A. Where does a hurricane usually develop?

B. What factors allow it to develop in these areas?

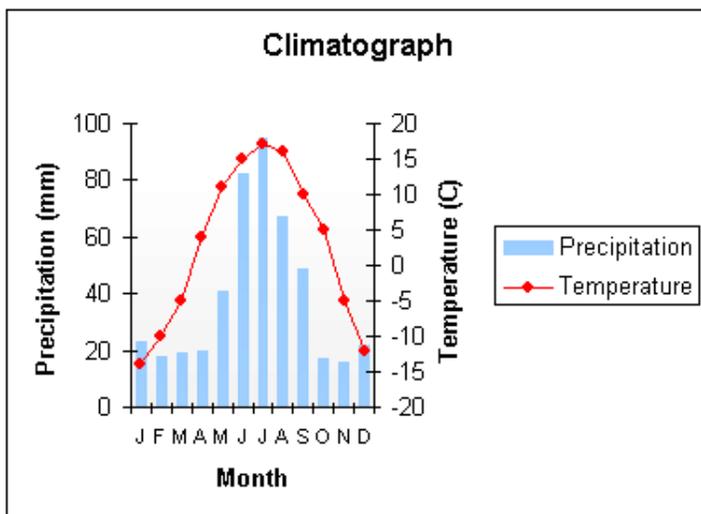
17. Describe the three stages of a hurricane as it develops over time.

18. How does a hurricane over water differ from a hurricane that makes landfall? Explain **WHY**.

19. The heating of the lower layer of the atmosphere from radiation absorbed by certain heat-absorbing gases is called:

20. List several weather instruments used by meteorologists **AND** briefly describe its purpose.

21. Analyze the climatogram below. Answer the questions based on the graph.



- What is the highest temperature?
In which month does it occur?
- What is the lowest temperature?
In which month does it occur?
- Describe the climate. When is it warm, cold, wet and dry?

22. Explain the significance of ground level ozone and its effect on human health, vegetation, and sensitive ecosystems.

23. Why is the amount of carbon dioxide concentration increasing at such a fast rate in our atmosphere?

24. Identify both natural and man-made causes of climate change.

25. Identify three (3) impacts of global warming.

26. Create a climatogram for **precipitation** and **temperature** of the following biome below:

- Be sure to label the climatogram with its biome name.
- All *temperature* readings are measured on the *right side* of the climatogram.
- All *precipitation* measurements are on the *left side* of the climatogram.
- Be sure to draw a **line graph for temperature** and a **bar graph for precipitation**.

**** Santa Monica, California: Chaparral Biome**

Month	J	F	M	A	M	J	J	A	S	O	N	D
Precipitation (cm):	8.9	7.6	7.4	1.3	1.3	0	0	0	0.3	1.5	3.5	5.8
Temperature (°C)	11.7	11.7	12.8	14.4	15.6	17.2	18.9	18.3	18.3	16.7	14.4	12.8

