Name _____ Period _____

Atmosphere Study Guide

Directions: Complete the following questions to help you prepare for the Atmosphere Unit 3 Test.

1. Explain why the north and south poles heat up differently than the equator.

2. Why is cold air denser than warm air?

3. What are the percentages of the 2 most common gases that make up the air we breathe?

4. List the 4 common greenhouse gases.

5. Name 4 main layers of the atmosphere and give a characteristic of each.

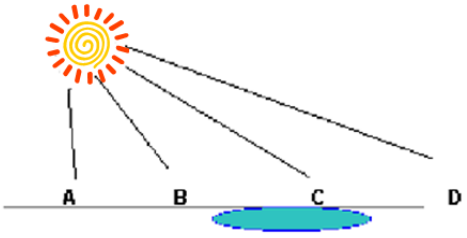
    a.

    b.

    c.

    d.

Ose this diagram to answer questions 6 - 8



6. How does this picture explain the formation of atmospheric circulation or convection currents in the atmosphere?

7. What location will have the warmest temperatures? The coolest?

8. Using the diagram above to explain why the earth's surface is not equally heated

9. Why does air at the poles sink toward the surface of the Earth?

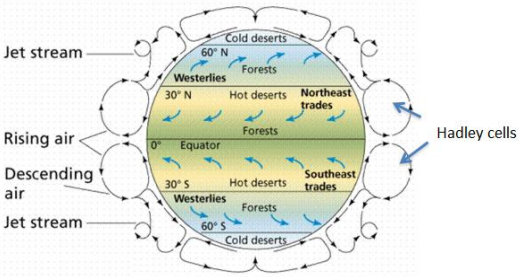
10. Why does air at the equator move away from the Earth's surface?

11. Why do the north and south poles create a high pressure zone while the equator creates a low air pressure zone?

12. Explain why Earth experiences seasons.

13. What do scientists call moving air?

Use the diagram to answer questions 14 – 17.



14. What is the name of the global wind located from 0º Latitude to 30º N, and what direction does the wind carry the weather?

15. Most of North America is located between 30º N to 60º N, what global wind at this location and what direction does it carry the weather?

16. What is the name of the global wind located from 60º S Latitude to 90º S, and what direction does the wind carry the weather?

17. Explain the motion of Hadley Cells.

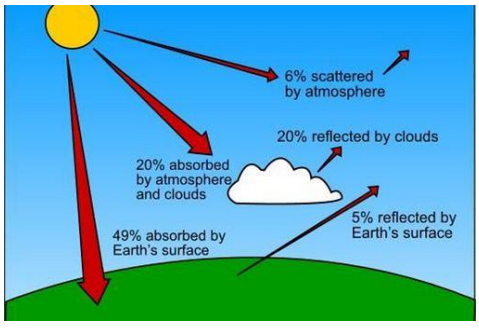
18. What is the apparent shift in the paths of wind due to the rotation of the Earth?

19. What are the characteristics of the following air masses
    a. mT
    b. cT
    c. cP
    d. mP

20. Describe what happens to an air mass when it is forced rapidly upward.

21. Explain how the atmosphere is altered or changed by the greenhouse effect.

Use this diagram to answer questions 22



22. What percent of the sun's radiation is absorbed and changed into heat?

23. What are CFC's and why did the government ban them?

24. List the health issues related to the formation of the hole in the ozone.

25. Which form of radiation does the ozone protect us?

26. Scientists believe that life on earths did not start until which layer of the atmosphere formed?

27. Give the purpose for each of the following weather tools
    a. Thermometer
    b. Barometer
    c. Hygrometer
    d. Anemometer
    e. Doppler Radar
    f. Weather satellites

28. What creates El Nino conditions? La Nina?

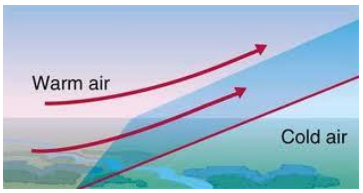
Use the diagram to answer questions 29 - 30

29. What type of front is shown on the weather map?

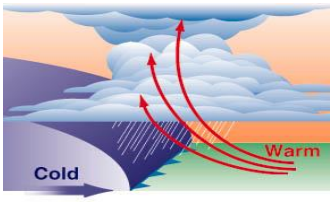
30. What will happen to the temperatures in Portland and Providence in a few days?

Use these picture to answer question 31

A



B

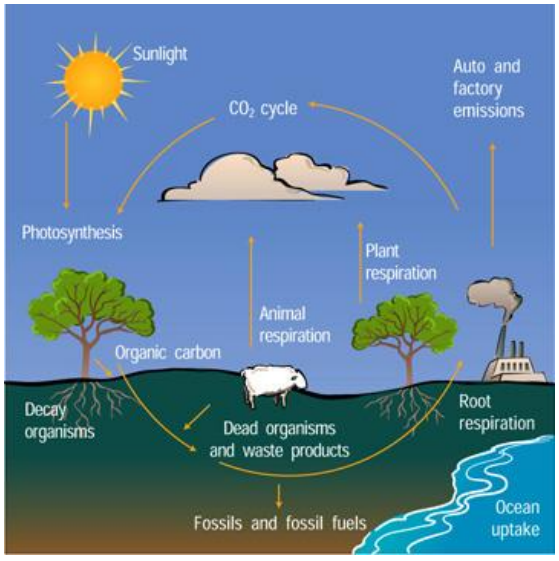


31. What type of front is this at A?

32. What produces Milankovich Cycles?

33. What do scientists believe create the rise in CO_2 levels in the atmosphere?

Use the diagram to answer questions 34 – 35



34. What factors on the diagram add CO_2 into the atmosphere? 2 factors that remove CO_2 from the atmosphere?

35. Which factor could be removed from the Carbon Cycle that will reduce carbon in the atmosphere the quickest?