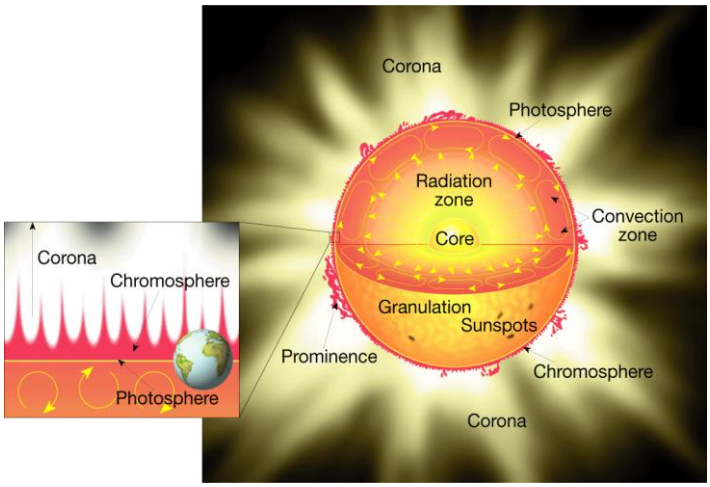
EARTH SCIENCE FINAL EXAM STUDY GUIDE (Semester 2)

CHAPTER 24: STRUCTURE OF THE SUN



1) What "fuel" does the sun consume?

2) What happens to the matter that is consumed in nuclear fusion?

3) List the layers of the Sun from inside out.

4) _____: the layer that radiates most of the light we can see

5) _____: cloudlike structure consisting of gases, sometimes rising explosively from the sun's surface.

6) Explain sun spots.

7) Which property of a star can be determined by its color?

8) What is parallax?

9) Compare and contrast apparent magnitude and absolute magnitude.

10) What type of stars end their lives as a supernova?

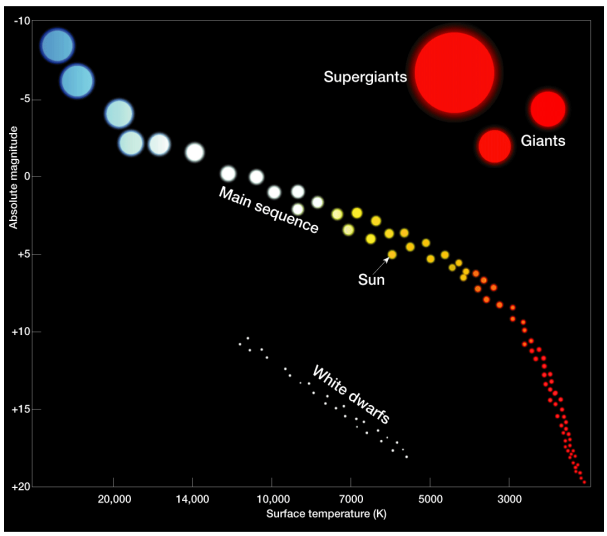
11) More distant galaxies have greater red shifts. What does this indicate about the universe?

12) What is cosmic background radiation?

13) Compare and contrast the different types of telescopes.

14) Compare and contrast space and earth based telescopes.

15) Nuclear fusion within a star does not succeed in blowing the star apart because:



CHAPTER 25: BEYOND OUR SOLAR SYSTEM

Properties of Stars

16) A star is born when _____ begins.

17) The largest stars die in a massive explosion called _____

18) What are the next life stages for our Sun?

19) What types of stars become black holes?

20) A star's color is an indication of its _____.

21) HOT Stars are what color?

22) What is the percent of the universe's stars are in main sequence? _____

23) What type of star has an absolute magnitude of +5 and a temp of 6000 degrees K?

24) Which stars are the **coolest** in temperature?

25) Which is star is hotter, **supergiant** or **white dwarf**?

26) What is the temperature of a white dwarf that has an apparent magnitude of +11?

27) Define the Big Bang Theory.

28) What evidence supports the Big Bang?

29) According to the big bang theory, the universe began about _____.
- a. 13.7 billion years ago
- b. 130 billion years ago
- c. 49.6 billion years ago
- d. 4.5 billion years ago

30) The layer of the sun that radiates most of the light that reaches Earth is the _____.
- a. Corona
- b. Photosphere
- c. Chromosphere
- d. Ionosphere

31) About 60% of all known galaxies are classified as _____.
- a. Spiral
- b. Irregular
- c. Binary
- d. Elliptical

32) The thin red rim seen around the sun during a total solar eclipse is called the _____.
- a. Aurora
- b. Photosphere
- c. Corona
- d. Chromosphere

33) Which of the following is true about parallax?
- a. It is used to measure distances to stars.
- b. The parallax angles of distant stars are too small to measure.
- c. The nearest stars have the smallest parallax angles.
- d. Both a and b.

34) The life span of a star depends on:
- a. How much hydrogen it contains
- b. Its mass
- c. Its diameter
- d. Its gravitational force

CH. 17: THE ATMOSPHERE

35. What is the most abundant gas in the atmosphere?_____ <Ps. It's <u>not</u> Oxygen>

36. Which of the following terms best describes air?
- ○ Element
- ○ Compound
- ○ Mixture

37. What is the most important gas for understanding WEATHER??? _____

<u>Height and Structure of the Atmosphere</u>

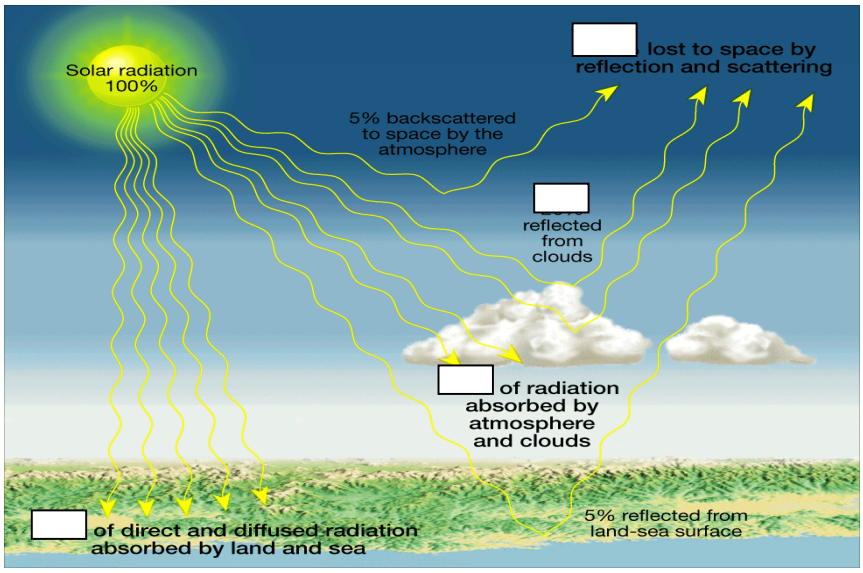
38. What is the ozone?

39. If you climb a mountain, what happens to the temperature as you climb?

40. June 21 is referred to as the _____.

41. Days and nights are equal in length everywhere on Earth during _____.

42. Fill in the percentages below.

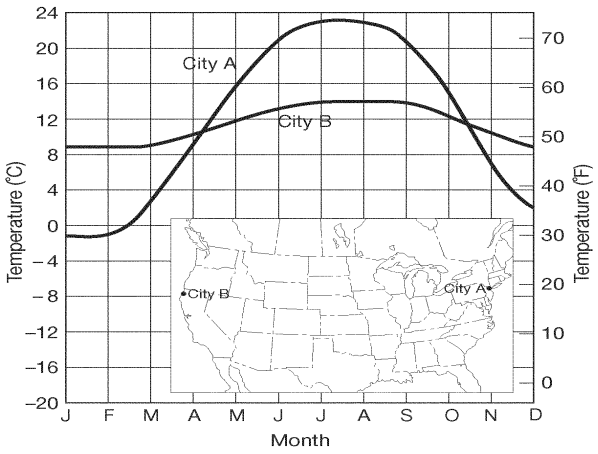


Temperature Controls

43. Contrast land heating to water heating.

44. Contrast temperatures for low and high altitudes.

45. What does cloud cover do to the day and night temperatures?



46. Compare/ Contrast leeward and windward.

47. Compare/Contrast the two city's temperatures.

48. City B has _____ winters and _____ summers.

CHAPTER 18: CLOUDS, MOISTURE, AND PRECIPITATION

49. **Condensation** is _____to_____ Energy Released or Absorbed?

50. **Evaporation** is _____to_____ Energy Released or Absorbed?

51. **Sublimation** is _____to_____ Energy Released or Absorbed?

52. **Deposition** is _____to_____ Energy Released or Absorbed?

53. Fill in the meaning of each root word

Alto:	Stratus:
Cirro:	Cumulus:
Nimbo:	Cirrus:

CHAPTER 19: AIR PRESSURE AND WIND

Use the following vocabulary and match them with the answer

54. _____ Air Pressure	A. Name associated with a center of low pressure
55. _____Cyclones	B. Line on a map indicating equal air pressure along it
56. _____Anticyclones	C. Instrument for measuring air pressure
57. _____Wind	D. Force exerted by air above
58. _____Barometer	E. Line on a map indicating equal temperature along it
59. _____Isobar	F. Name associated with a center of high pressure
60. _____Isotherm	G. Variations in air pressure from place to place

61. Fill in Blanks: High Pressure vs. Low Pressure

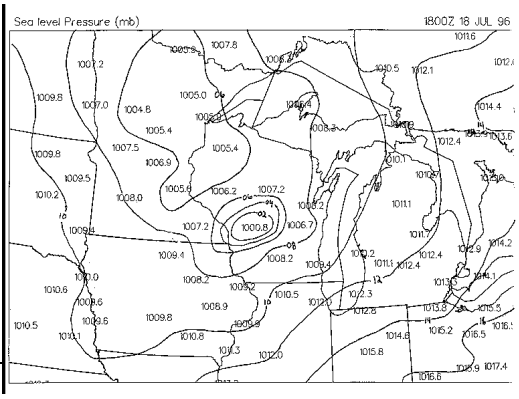
Pressure	**High**	**Low**
Weather (Good/Bad)		
Movement of Air (Rising or Sinking)		
Official Name (Cyclone/Anti-cyclone)		
Direction of Movement (Draw with arrows)		
Air moves Inward (toward the system) or Outward (away from)?		

Air Pressure

62. Explain air pressure.

63. The ultimate energy source for most wind is the _____.

64. The Coriolis Effect influences Wind Direction or Wind Speed? (circle your answer)



65. What are the lines on this map called?

66. Lines are closest together in which state?

67. What do close lines indicate about air pressure?

You may use one answer more than once or even not at all

68. _____ High-altitude, high-velocity winds
69. _____ Steep air pressure gradient causes this
70. _____ Mountain and valley breezes are example of
71. _____ Precipitation is associated with this type of system
72. _____ Fast moving rivers of air that travel West to East in US
73. _____ This system produces air that sinks
74. _____ This system rotates counter-clockwise

A. Low Pressure System
B. High Pressure System
C. Jet Streams
D. Local Winds
E. Stable Winds
F. Strong Winds

CHAPTER 20: WEATHER PATTERNS AND SEVERE STORMS

Classifying Air Masses

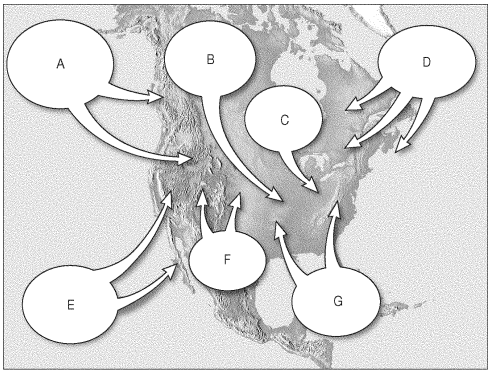


Figure 20-1

75. *Define Maritime = _____*
76. *Define Continental = _____*
77. *Define Polar = _____*
78. *Define Tropical = _____*
79. Identify each air mass

B.

C.

G.

80. Weather in North America (east of the Rocky Mountains is most affected by which two air masses?

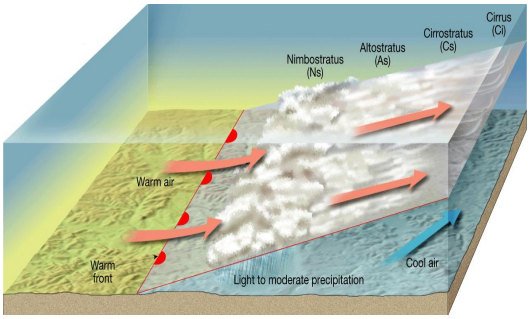
81. What is the name of a boundary that separates two air masses?_____

82. Fill in the blanks

Warm Front

_____ air moves into an area of cooler air

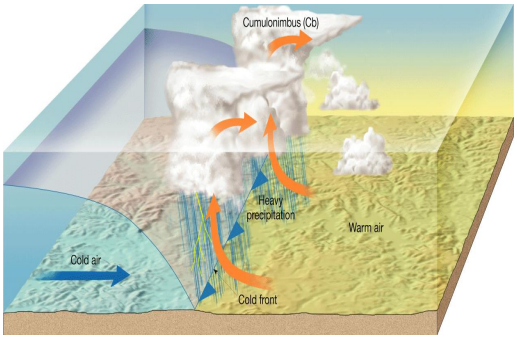
Shown as a line with _____



Cold Front

_____ air moves into an area of warmer air

Shown as a line with _____



83. What are middle-latitude cyclones?
    a. fast-moving cold fronts
    b. heavy snowstorms that form on the leeward sides of lakes
    c. low-pressure systems that cause stormy weather
    d. warm air masses that move across the middle of the United States

84. Tornadoes are most frequent from _____.

85. Tornadoes are classified according to intensity using the _____.

86. The eye of a hurricane has the ____.
    a. Highest wind speeds
    b. Warmest temperatures
    c. Most intense rainfall
    d. Highest air pressure

87. What type of front forms when the surface position of the front does not move?

88. What is a hurricane?
    a. a tropical cyclone
    b. a middle-latitude anticyclone
    c. a middle-latitude cyclone
    d. a tropical anticyclone

89. A hurricane's energy comes from what?

90. Which of the following is NOT a characteristic of the eye of hurricane?
    a. has the storm's strongest winds
    b. is at the storm's center
    c. has no precipitation
    d. is warm because of descending air

Ch 4: Earth's Resources

91. Nonrenewable resources are those that
    a. will never run out.
    b. take one or two decades to replace.
    c. have finite supplies.
    d. are contaminated by pollution.

92. Which of the following is a fossil fuel?
    a. Uranium
    b. Coal
    c. Wood
    d. Ozone

93. Hydroelectric power produces electricity using
    a. the sun's rays.
    b. wind.
    c. moving water.
    d. storms.

94. Which of the following substances is a fuel used in nuclear power plants?
    a. sulfur dioxide
    b. uranium
    c. petroleum
    d. carbon dioxide

95. Which one of the substances listed below is a fossil fuel?
    a. Uranium
    b. Petroleum
    c. carbon dioxide
    d. granite

96. Describe nonrenewable energy sources. What is a benefit of this type of energy source?

97. List 3 examples of fossil fuels.

98. Describe the process in forming petroleum and natural gas.

99. What substance is necessary to fuel nuclear power plants?

100. Describe renewable energy sources.

101. Describe the relationship between recycling and resource consumption.

102. What is a major negative impact of the use of fossil fuels?

103. What energy resource is number one in Illinois.

Ch 21 Climate

104. An unnatural warming of the atmosphere near Earth's surface is called
   a. solar wind.
   b. ozone accumulation.
   c. acid precipitation.
   d. global warming.

105. Which of the following is true?
   a. Climates at high latitudes are very warm.
   b. A nearby lake causes a climate to be colder.
   c. Vegetation can increase the amount of precipitation that falls over an area.
   d. Places at lower elevations generally have lower temperatures.

106. Humid tropical climates always experience
   e. severe winters.
   f. dry summers.
   g. low humidity.
   h. warm temperatures.

107. In a dry climate, yearly precipitation is
   i. less than the rate of evaporation.
   j. greater than the rate of evaporation.
   k. greater in a desert than a steppe.
   l. less than that in a polar climate.

108. The greenhouse effect is best described as
   m. an increase in Earth's surface temperature.
   n. A natural warming effect of the atmosphere.
   o. a result of global warming.
   p. any short-term change in climate.

109. Recent global warming appears to be the result of
   q. changes in global wind patterns.
   r. a decrease in the greenhouse effect.
   s. increases in greenhouse gases in the air.
   t. changes in Earth's revolution around the sun.

110. Melting ice caps can result in which of the following?
   u. a rise in sea level
   v. a fall in sea level
   w. colder temperatures
   x. less precipitation

111. What powers Earth's climate system?

112. Why can two places at the same latitude have different climates?

113. What climate data are needed in order to classify a climate using the Köppen climate classification system?

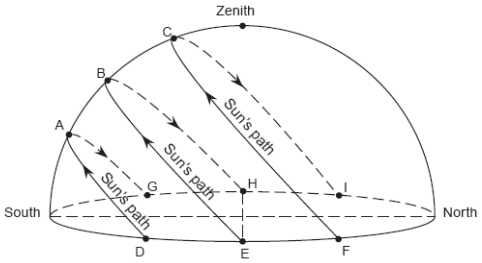
114. Explain the greenhouse effect caused by Earth's atmosphere.

115. How have humans contributed to the increase in the levels of carbon dioxide in the atmosphere?

116. What is global warming?

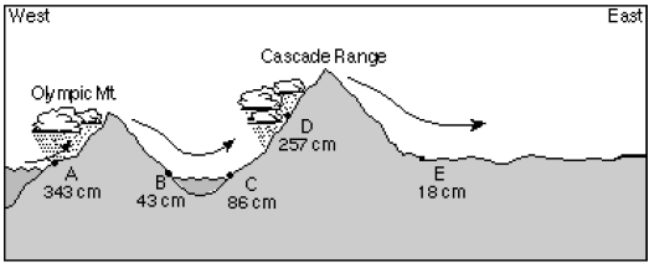
117. How might global warming affect global precipitation?

The diagram below represents a plastic hemisphere upon which lines have been drawn to show the apparent paths of the Sun at a location in Kentucky on the first day of each season. Letters A through I represent points on the paths.



118. Which point represents the sunrise location on the first day of winter?

The diagram below shows the average yearly precipitation, in centimeters, at locations A through E across the State of Washington. Arrows indicate the direction of prevailing winds.



(Not drawn to scale)

119. Which statement best explains why location *B* and location *E* receive relatively low average yearly precipitation?
    y. These locations are on the leeward side of mountain ranges.
    z. These locations are on the windward side of mountain ranges.
    aa. These locations receive more sun than the other locations.
    bb. These locations receive less sun than the other locations.

Base your answers to questions 29 and 30 on the graph below, which shows the average monthly temperature of two cities, A and B.

120. The temperature in city *B* is highest in January and lowest in July because city *B* is located
    cc. on the side of a mountain
    dd. on an island
    ee. in the Southern Hemisphere
    ff. at the North Pole