

# Answers to Review of Chapter 11

1. (2) 2. (4) 3. (3) 4. (3) 5. (3) 6. (1) 13. (1) 14. (3) 15. (1) 16. (2) 17. (1) 18. (4)  
 7. (2) 8. (4) 9. (1) 10. (3) 11. (3) 12. (4) 19. (3) 20. (3)

## Answers to Questions in Reviewing Intermediate-Level Science

### WEATHER ELEMENTS AND CAUSES

#### Pages 299-300— Laboratory Skill: Reading Weather Instruments

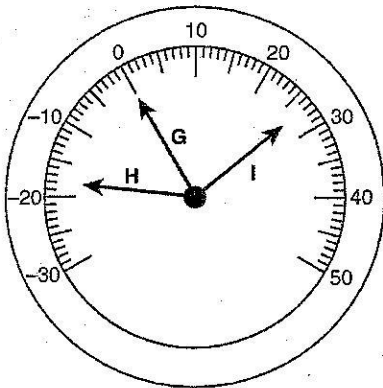
- Degrees Celsius are the units on the thermometer scale.
- Inches of mercury are the units on the barometer scale.
- Thermometer scale readings:

Instrument	Pointer A	Pointer B	Pointer C
Thermometer	-10°C	20°C	34°C

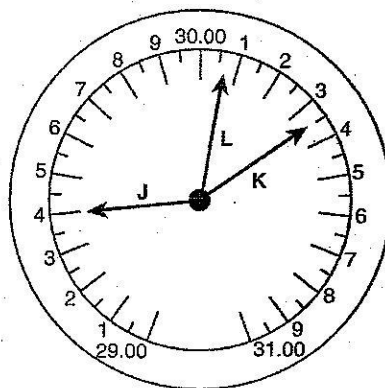
- Barometer scale readings:

Instrument	Pointer D	Pointer E	Pointer F
Barometer	29.50 inches Hg	(29.85) inches Hg	(30.49) inches Hg

5.



Thermometer



Barometer

#### Review Questions Pages 304-309

##### Part I

1. (4) 2. (2) 3. (2) 4. (4) 5. (1) 6. (3)  
 7. (2) 8. (4) 9. (3) 10. (1) 11. (4) 12. (2)

##### Part II

- Air is sinking from position D to position C.
- Clouds are most likely forming at position B.
- At position A the air is being heated by conduction. The sun is heating the sand on the beach and the sand is heating the air above the beach.
- As the car goes up the mountain, the thermometer will indicate a temperature decrease. (It will get colder.)
- As the car goes up the mountain, the barometer will indicate an air pressure decrease.
- Hypothesis: a puddle in sunlight will evaporate faster than a puddle not in sunlight.
- Changed factor: sunlight.
- Two unchanged factors: the amount of water and the starting temperature of the water. There are other possible unchanged factors that should

be considered: type of ground or container holding the water, air temperature, humidity, and the movement of air are some others.

21. Place equal amounts of water at the same temperature in two aluminum pans. Place one pan in the shade and the other in sunlight. Observe the pans. If the water evaporates first from the pan in sunlight, the hypothesis is correct. If the water evaporates first from the pan not in sunlight, the hypothesis is incorrect.

## LARGE-SCALE WEATHER SYSTEMS

Pages 310–311—Process Skill 1: Creating a Table

Types of Air Masses

Name of Air Mass	Temperature (Warm or Cool)	Humidity (Humid or Dry)	Direction It Enters the US
Continental Polar	Cool	Dry	From the north (Canada)
Maritime Polar	Cool	Humid	From the N. Atlantic and N. Pacific Oceans
Continental Tropical	Warm	Dry	From the south (Mexico)
Maritime Tropical	Warm	Humid	From the S. Pacific, S. Atlantic, and Gulf of Mexico

Pages 315–316—Process Skill 2: Predicting Weather Changes

1. Wind increasing, with rain within 12 to 24 hours.
2. Fair, with slight temperature changes, for 1 to 2 days
3. Severe storm imminent, followed with 24 hours by clearing, in winter by colder temperatures
4. Continued fair, with no temperature change

Review Questions Pages 317–319

Part I

22. (3) 23. (2) 24. (3) 25. (2) 26. (1) 27. (1)  
28. (2) 29. (3) 30. (2) 31. (1)

Part II

32. At location C the weather is stormy: cloudy, rain, and cool.

33. The temperature at location A is warmer than the temperature at location D.
34. The weather at location D would be fair—that is, warm and clear.
35. The change in weather at Elmira during the past six hours has been warm, then stormy, and then clear and cool.
36. The weather for Plattsburg during the next six hours will be light rain and warmer temperature.
37. Typical weather conditions associated with a low-pressure system are rising air, air moving in a counterclockwise direction, a high possibility of precipitation, and a high percentage of cloud cover.

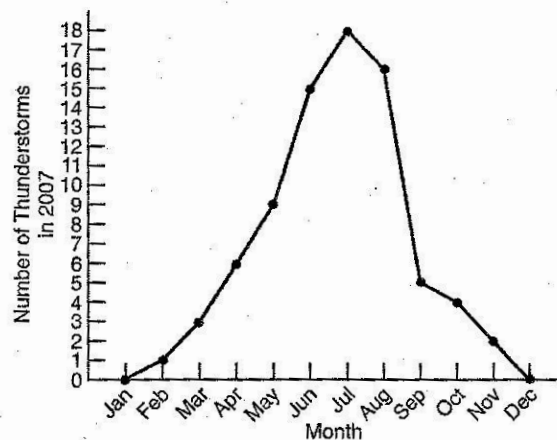
## WEATHER HAZARDS AND POLLUTION

Pages 322–323—Process Skill 3: Using Latitude and Longitude Map Skills

1. Hurricane Floyd took a typical hurricane path along the east coast of the United States.
2. On September 7, hurricane Floyd's location was latitude 14°N and longitude 46° or 47°W.
3. Katrina's wind speed decreased on August 30 because Katrina started to travel over land.
4. (4)

Page 324—Process Skill 4: Interpreting Data in a Table

1. Graph of thunderstorms/month.



2. Thunderstorms are most likely to occur in June, July, and August. Tornadoes are most likely to occur in March, April, and May. Hurricanes are most likely to occur in July, August, and September.
3. It is unlikely there will be a hurricane in January, February, March, or April, because the temperature, air pressure, and moisture conditions are not favorable for hurricanes to form.

**Review Questions Pages 326–329**

**Part I**

38. (4) 39. (3) 40. (2) 41. (2) 42. (3) 43. (4)  
44. (2) 45. (4) 46. (3)

**Part II**

47. Wind speeds increase from the edge of the hurricane toward the center, and are greatest around the eye of the storm. In the eye the winds are generally calm.

48. The eye is the feature in the center of a hurricane. The eye is usually about 30 to 60 kilometers wide and the winds are calm in the eye.
49. This hurricane has a diameter of about 450 kilometers.
50. The Adirondack Lakes are most likely affected by acid rain because pollutants are carried from the Midwest by the prevailing westerlies winds toward the northeast.
51. Burning fossil fuels releases sulfur dioxide and nitrogen oxides into the atmosphere. These compounds mix with atmospheric water to produce acid rain.
52. A house is least likely to be hit by a tornado in California.
53. A house is more likely to be hit by a tornado in Oklahoma than Texas, although Texas has more tornadoes than Oklahoma because Oklahoma is a smaller state and the number of tornadoes are more concentrated.
54. New York State averages about 4 tornadoes per year.