

Science
Semester 2 Exam

MATCHING - 1

Directions: Place the correct letter on the line that matches the definition to the word

- | | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ 1. Hurricane | A. heavy snowfall with strong winds |
| _____ 2. Eye | B. estimates how cold the air feels to the human body |
| _____ 3. Eyewall | C. development of a calm center of the storm |
| _____ 4. Saffir-Simpson
Hurricane Scale | D. extended period of below average temperatures |
| _____ 5. Storm surge | E. extended periods of well below average rainfall |
| _____ 6. Drought | F. tall band of strong winds and dense clouds that surround the eye |
| _____ 7. Heat wave | G. extended periods of above average temperatures |
| _____ 8. Cold wave | H. tropical cyclone storm with winds over 119 kpm |
| _____ 9. Blizzard | I. classifies hurricanes according to wind speed, potential for flooding in terms of the effect on the height of the sea level, and potential for property damage |
| _____ 10. Wind chill index | J. occurs when hurricane force winds drive a mound of ocean water toward coastal areas where it washes over the land |

MULTIPLE CHOICE

Directions: Circle the letter that best completes the question.

1. What weather events are most cold fronts associated with?
A. floods
B. polar high pressure systems
C. tropical high pressure systems
D. drought
2. Which way do hurricanes rotate in the southern hemisphere?
A. south
B. clockwise
C. counterclockwise
D. north
3. What percentage of tornadoes are classified as F4 or F5 on the Fujita tornado intensity scale?
A. 1%
B. 10%
C. 50%
D. 75%

4. Heat waves involve high pressure systems that cause air to sink and warm by what process?
A. compression
B. conduction
C. evaporation
D. condensation
5. What is the first stage of a lightning bolt?
A. return stroke
B. stepped leader
C. positive charge
D. downdraft
6. Flooding is most likely to take place because of rains associated with what type of front?
A. stationary front
B. occluded front
C. cold front
D. warm front
7. What would work against the development of a thunder storm?
A. rising air
B. stable air
C. moisture
D. unstable air
8. In which ocean would you expect to experience a tropical cyclone?
A. West Pacific
B. North Atlantic
C. Indian Ocean
D. all of the above
9. Which of the following describes a type of damaging thunderstorm wind?
A. downburst
B. microburst
C. macroburst
D. all of the above
10. Which of the following factors, if increased, would make a thunderstorm severe?
A. temperature
B. surface area
C. duration
D. conduction
11. During what stage of a tropical cyclone does an eyewall develop?
A. tropical depression
B. tropical storm
C. hurricane
D. tropical wave
12. Which of the following weather hazards involves a lack of moisture?
A. hail
B. drought
C. storm surge
D. flood
13. Which of the following plays a key role in the development of hail?
A. super cooled water
B. strong updrafts
C. strong downdrafts
D. all the above
14. A mound of water driven toward coastal areas by hurricane winds is called _____.
A. cyclone
B. supercell
C. storm surge
D. cold front

15. An extended period of well below normal rainfall is a _____.
- A. flood
B. drought
C. heat wave
D. tropical cyclone
16. Which of the following conditions contributes to the formation of hail?
- A. the ability of water droplets to exist in a liquid state in parts of a cloud where the temperature is below freezing
B. the encounter between super cooled water droplets and ice pellets
C. the dissipation of warm, moist air on Earth's surface by downdrafts
D. the existence of strong updrafts and downdrafts side by side within a cloud
17. Extremely powerful thunderstorms that develop intense, rotating updrafts are _____.
- A. downbursts
B. supercells
C. cumulus cells
D. convection bursts
18. Electricity caused by the rapid rush of air in a cumulonimbus cloud is _____.
- A. thunder
B. hail
C. friction
D. lightning

FILL IN

Directions: Use each of the terms below just once to complete the passage.

condensation	warmer	unstable	convection
cumulonimbus	moisture	stable	

At any moment, more than 2000 thunderstorms are occurring on Earth. Thunderstorms develop from cumulus clouds that grow into huge _____ clouds.

Thunderstorms form when three conditions exist that cause cumulus clouds to grow by the energy transfer method of _____. First, there must be sufficient _____ in the lower atmosphere to condense and release latent heat. Second, some mechanism must make the air rise, causing the cloud to grow. Third, the portion of the atmosphere that the cloud grows through must be _____. The rising cloud must stay _____ than the air around it in order for the growth to continue.

The cloud's growth stops when the rate of _____ in the cloud, which diminishes with height, is insufficient to create enough heat to keep the cloud warmer than the air around it.

Growth will also stop if the rising air meets a layer of _____ air that it cannot overcome.

SHORT ANSWERS

Directions: Answer all short answer questions using complete sentences. Spelling and grammar count.

1. Where in the United States do many tornadoes occur? Explain why.

2. The Fujita Scale classifies tornadoes according to what criteria?

3. Describe a situation where a light rain could cause flooding.

4. Identify the four main stages of a tropical cyclone.

5. What two conditions must exist for a tropical cyclone to form?
