

Storms

1.

Storms get most of their energy from _____.

Student Response	Value	Correct Answer
A. wind shear		
B. radioactive decay		
<input checked="" type="checkbox"/> C. latent heat	100%	<input checked="" type="checkbox"/>
D. sensible heat		
E. Coriolis force		
Score:	1/1	

2.

If you are on the beach when a hurricane approaches, for safety you should _____.

Student Response	Value	Correct Answer
1. dig a ditch in the sand and get in it for shelter		
2. grab your camera and run towards the ocean		
3. run in a direction perpendicular to the path of the storm centre		
<input checked="" type="checkbox"/> 4. evacuate and drive inland away from the ocean	100%	<input checked="" type="checkbox"/>
5. tie yourself to the nearest tree		
Score:	1/1	

3.

Which statement is FALSE?

Student Response	Value	Correct Answer
<input checked="" type="checkbox"/> A. Cold air can hold more water vapor at saturation than warm air. B. The saturated adiabatic lapse rate is less than the dry adiabatic lapse rate. C. Condensation releases latent heat and warms the air. D. Water vapor mixing ratio is conserved in rising air parcels. E. Rainfall can be used to estimate the net heating in a storm.	100%	<input checked="" type="checkbox"/>
Score: 1/1		

4.

If water-vapour pressure in air increases but total pressure remains constant, then the partial pressure of the other gases in air would _____.

Student Response	Value	Correct Answer
A. increase B. not change <input checked="" type="checkbox"/> C. decrease D. it depends on the temperature E. not enough information to answer	100%	<input checked="" type="checkbox"/>
Score: 1/1		

5.

The horizontal movement of sensible and latent heat by the wind is called _____.


Student Response	Value	Correct Answer
<input checked="" type="checkbox"/> A. advection	100%	<input checked="" type="checkbox"/>

- B. convection
- C. an adiabat
- D. radiation
- E. transportation

Score: 1/1

6.


Which list below gives storm horizontal diameters from smallest to largest?

Student Response	Value	Correct Answer
A. hurricane, tornado, thunderstorm		
B. hurricane, thunderstorm, tornado		
C. thunderstorm, tornado, hurricane		
D. thunderstorm, hurricane, tornado		
<input checked="" type="checkbox"/> E. tornado, thunderstorm, hurricane	100% 	

Score: 1/1

7.

The amount of heat needed to evaporate a kilogram of water is called the _____.

Student Response	Value	Correct Answer
A. latent heat of fusion		
<input checked="" type="checkbox"/> B. latent heat of vaporization	100% 	
C. specific gravity		
D. latent heat of deposition		
E. specific heat		

Score: 1/1

8.

According to the Saffir-Simpson Hurricane Intensity Scale _____ indicate stronger hurricanes.

Student Response	Value	Correct Answer
A. higher surface pressure in the eye and faster surface wind speeds		
B. higher surface pressure in the eye and slower surface wind speeds		
C. lower surface pressure in the eye and slower surface wind speeds		
D. greater damage to ships and coastal communities		
<input checked="" type="checkbox"/> E. lower surface pressure in the eye and faster surface wind speeds	100%	<input checked="" type="checkbox"/>

Score: 1/1

9.


Water-vapour mixing ratio indicates _____.

Student Response	Value	Correct Answer
A. the actual amount of water in air compared to the maximal amount that it can hold		
B. the ratio of the actual temperature to the temperature required for condensation to occur		
C. the amount of mixing needed for water vapour to become spread continuously within a volume		
D. the partial pressure of water vapour molecules		
<input checked="" type="checkbox"/> E. the actual amount of water in air compared to the amount of other gases	100%	<input checked="" type="checkbox"/>

Score: 1/1


10.

Thunderstorm tops often reach an altitude of roughly _____.

Student Response	Value	Correct Answer
A. 10 m		
B. 100 m		
C. 1000 m		
<input checked="" type="checkbox"/> D. 10 km	100% 	
E. 100 km		
Score: 1/1		

11.


Which statement is TRUE?

Student Response	Value	Correct Answer
A. Instruments that measure humidity are called hydrometers.		
B. The dew-point temperature is the temperature where water vapour forms when you cool air at constant pressure.		
C. Saturated air has a relative humidity of 0%.		
<input checked="" type="checkbox"/> D. Dust particles in air can serve as cloud condensation nuclei.	100% 	
E. Thunderstorms always form along cold fronts.		
Score: 1/1		

12.


Thunderstorm cells have all updraft (no downdrafts, no rain) in the ____ stage of

their life cycle.

Student Response	Value	Correct Answer
A. cirrus		
B. mature		
C. stratus		
D. dissipating		
<input checked="" type="checkbox"/> E. cumulus	100% 	
Score: 1/1		

13.

Which is FALSE?


Student Response	Value	Correct Answer
A. The anvil is a structure usually found at the top of thunderstorms.		
<input checked="" type="checkbox"/> B. The most favourable time for thunderstorms is about noon.	100% 	
C. Thunderstorms ultimately get their energy from the sun.		
D. Advection is the process that can move thunderstorm fuel from its creation location.		
E. Vertical and horizontal motions are coupled by the continuity effect.		
Score: 1/1		

14.

Which statement is TRUE?

Student Response	Value	Correct Answer
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A. A "tornado watch" means a tornado is happening now and heading in your direction.

☒ B. Most thunderstorms are short-lived because of the limited availability of boundary-layer fuel nearby. 100% 

C. More intense tornadoes happen more frequently than weak ones.

D. Tornado damage paths are usually wider than about 2 km.

E. The official name for a thunderstorm cloud is "nimbostratus".

Score: 1/1

15.

The eye of a hurricane has ____ pressure at sea level and ____ pressure at the tropopause

Student Response

Value

Correct Answer

A. low...low

☒ B. low...high 100% 

C. high...low

D. high...high

E. low...no

Score: 1/1

16.

In North America most thunderstorms form _____.

Student Response

Value

Correct Answer

A. on the Canadian prairies


☒ B. in the southeast US 100% 

- C. near the east coast
- D. on the west coast
- E. in Oklahoma

Score: 1/1

17.


Which one thing do supercells have that most air-mass thunderstorms do NOT?

Student Response	Value	Correct Answer
A. anvil		
B. cloud base at the LCL		
C. updraft		
D. downdraft		
<input checked="" type="checkbox"/> E. environmental wind shear	100% 	

Score: 1/1

18.


Which message from the Meteorological Service means you must seek shelter from storms/tornadoes/hurricanes immediately?

Student Response	Value	Correct Answer
A. "Hazard"		
B. "Watch"		
<input checked="" type="checkbox"/> C. "Warning"	100% 	
D. "Alert"		
E. "Episode"		

Score: 1/1


19.

In the south Pacific near Australia, hurricanes are called ____.

Student Response	Value	Correct Answer
A. hurricanes		
B. tropical storms		
C. typhoons		
<input checked="" type="checkbox"/> D. cyclones	100% 	
E. thunderstorms		
Score: 1/1		

20.

Which statement is TRUE?

Student Response	Value	Correct Answer
A. Zero force implies zero velocity.		
B. An air parcel in a warm environment is more buoyant than one in a cold environment.		
C. Horizontal temperature gradients can cause buoyancy-related vertical motions.		
D. Newton's law says that force equals mass divided by acceleration.		
<input checked="" type="checkbox"/> E. Hurricanes are organized to create their own fuel by wind-enhanced evaporation.	100% 	
Score: 1/1		

1.

Water-vapour mixing ratio indicates _____.

Student Response	Value
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- A. the actual amount of water in air compared to the maximal amount that it can hold
 - B. the ratio of the actual temperature to the temperature required for condensation to occur
 - ☒ C. the amount of mixing needed for water vapour to become spread continuously within a volume 0%
 - D. the partial pressure of water vapour molecules
 - E. the actual amount of water in air compared to the amount of other gases
- Score: 0/1

2.

Which statement is TRUE?

- | Student Response | Value |
|--|-------|
| <input checked="" type="checkbox"/> A. Tornado outbreaks are relatively rare (return period of about ten years). | 0% |
| B. Tornadoes in North America are most frequent in winter. | |
| C. The greatest number of tornado fatalities are for people in mobile homes. | |
| D. Thunderstorms and associated tornado tracks generally move from the northeast. | |
| E. Tornadoes are most frequent in regions that are hot and dry. | |
- Score: 0/1

3.

Most thunderstorms are _____

- | Student Response | Value |
|------------------|-------|
| A. supercell | |
| B. squall-line | |
| C. orographic | |

☒ D. multicell

100%

E. pulse

Score: 1/1

4.

Most thunderstorms form in the _____.

Student Response

Value

☒ A. stratosphere

0%

B. hydrosphere

C. exosphere

D. troposphere

E. mesosphere

Score: 0/1

5.

Measurement of rainfall rate from a thunderstorm gives an indication of _____.

Student Response

Value

A. the amount of evaporation inside the storm

B. the depth of the storm

C. the width of the storm

☒ D. the amount of cloud condensation nuclei in the storm

0%

E. the net heating in the storm

Score: 0/1

1.

Dust storms are called _____.

Student Response	Value
A. tornadoes	
<input checked="" type="checkbox"/> B. derechos	0%
C. gust fronts	
D. haboobs	
E. downbursts	
Score: 0/1	

2.

According to the pressure gradient force equation, increasing the density of an air parcel relative to its surroundings will _____.

Student Response	Value
A. increase the humidity of the air parcel	
B. increase the acceleration of the air parcel	
<input checked="" type="checkbox"/> C. decrease the pressure gradient force	0%
D. cause the pressure gradient force to stay the same	
E. increase the pressure gradient force	
Score: 0/1	

3.

A safe place to be during a lightning storm is _____.

Student Response	Value
<input checked="" type="checkbox"/> A. in a car	100%
B. under a tree	
C. on a ridge top	
D. on the golf course	
E. under an umbrella	
Score: 1/1	

4.

Which statement is FALSE for saturated air?

Student Response	Value
A. Relative humidity = 100%	
B. Temperature equals dew point temperature.	
C. Condensation occurs on dust particles called cloud condensation nuclei.	
<input checked="" type="checkbox"/> D. The air parcel is at or above its lifting condensation level.	0%
E. Vapor pressure equals mixing ratio.	
Score:	0/1

5.

A hygristor measures _____.

Student Response	Value
A. dew point temperature by cooling a small mirror and noting the temperature a laser beam shining on its surface gets diffracted	
B. humidity by beaming radiation from a transmitter to a detector and measuring attenuation of the beam	
<input checked="" type="checkbox"/> C. humidity by measuring changing capacitance of a thin piece of plastic	0%
D. humidity by cooling a small mirror and noting the temperature a laser beam shining on its surface gets diffracted	
E. humidity by measuring changing resistance of a carbon-coated glass slide	
Score:	0/1

1.

Arrange the lightning-flash components in the correct chronological order, from first to last.

[-----] happens FIRST
[-----] next
[-----] next
[-----] happens LAST

Student Response	Value
Arrange the lightning-flash components in the correct chronological order, from first to last.	0.0%
<p>[dart leader] happens FIRST [return stroke] next [another return stroke] next [stepped leader] happens LAST</p>	
Score: 0/1	

2.

Which is NOT considered a type of SEVERE thunderstorm?

Student Response	Value
<input checked="" type="checkbox"/> A. mesoscale convective complex	0%
B. squall Line thunderstorm	
C. air mass thunderstorm	
D. supercell thunderstorm	
Score: 0/1	

3.

A severe straight-line wind covering a large area (>400 km) is called a/an _____.

Student Response	Value
A. tornado	
B. downburst	
<input checked="" type="checkbox"/> C. gust front	0%
D. microburst	

E. derecho

Score: 0/1

4.

Sometimes whole thunderstorms can rotate slowly. These are the thunderstorms that cause the most severe tornadoes. Such a rotating thunderstorm is called a/an _____.

Student Response	Value
A. cyclone	
B. mesocyclone	
C. wall cloud	
<input checked="" type="checkbox"/> D. water spout	0%
E. tornado	

Score: 0/1

5.

The continent with the greatest frequency of tornadoes is Australia.

Student Response	Value
False	100%

Score: 1/1

6.

If a tornado or severe thunderstorm watch has been issued, you should _____.

Student Response	Value
<input checked="" type="checkbox"/> A. panic	0%
B. immediately seek shelter	

- C. continue your normal activities, but keep an eye on the weather
- D. evacuate and drive at least 200 km away from the nearest shoreline
- E. anticipate that a tornado outbreak will occur

Score: 0/1

7.

Most tropical disturbances that enter the western Atlantic and become hurricanes originate from trade-wind variations called 1.-----.

Student Response	Value
1. not answered	0%

Score: 0/1

8.

Relative to the direction of movement of hurricanes in the Northern Hemisphere, most of the tornadoes imbedded in hurricanes are found in the _____ quadrant of the hurricane.

Student Response	Value
<input checked="" type="checkbox"/> A. left-rearward	0%
B. right rearward	
C. right forward	
D. left-forward	

Score: 0/1

9.

The intensity scale for hurricanes is called the 1.----- scale.

Student Response	Value
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1. not answered

0%

Score: 0/1