

Weather

TEST PREP

1

If you are on approach and picking up ½ in. of rime ice on the leading edge of your wings, you should consider:

- a. Flying your approach slower than normal to lessen the “wind chill” effect and break up the ice.
- b. Approaching and landing at your normal speed since the ice is not thick enough to have any noticeable effect.
- c. A faster than normal approach and landing speed.

2

What are characteristics of unstable air?

- a. Nimbostratus clouds and good surface visibility.
- b. Turbulence and good surface visibility.
- c. Turbulence and poor surface visibility.

3

Wind shear can be defined as:

- a. Wind that blows at a constant speed.
- b. A change in wind direction or wind speed.
- c. Wind that starts and stops only.

4

Inland fog is most likely:

- a. Precipitation Induced fog.
- b. Advection fog sometimes called sea fog.
- c. Radiation Fog sometimes called ground fog.

5

Humid air at the surface, especially in summer, can cause:

- a. A stable air mass and clear skies.
- b. Stable air and clearer visibilities.
- c. Instability and the formation of afternoon thunderstorms.

6

A pilot can expect a wind-shear zone in a temperature inversion whenever the windspeed at 2,000 to 4,000 feet above the surface is at least

- a. 15 knots.
- b. 25 knots.
- c. 10 knots.

7

Thunderstorms reach their greatest intensity during the

- a. downdraft stage.
- b. mature stage.
- c. cumulus stage.

8

Thunderstorms which generally produce the most intense hazard to aircraft are

- a. steady-state thunderstorms.
- b. squall line thunderstorms.
- c. warm front thunderstorms

9

You can expect dangerous turbulence in mountain waves and:

- a. Below rotor clouds.
- b. Above rotor clouds.
- c. Below lenticular clouds.

10

In which environment is aircraft structural ice most likely to have the highest accumulation rate?

- a. Freezing rain.
- b. Cumulus clouds with below freezing temperatures.
- c. Freezing drizzle.

11

If an unstable air mass is forced upward, what type clouds can be expected?

- a. Stratus clouds with little vertical development.
- b. Stratus clouds with considerable associated turbulence.
- c. Clouds with considerable vertical development and associated turbulence.

12

During the life cycle of a thunderstorm, which stage is characterized predominately by downdrafts?

Mature.

Dissipating.

Cumulus.

13

While flying over mountainous terrain you see clouds with extensive vertical development. What does this indicate?

- a. An unstable air mass over the mountains.
- b. Dry air.
- c. You are in a stable air mass.

14

Upon encountering severe turbulence, which flight condition should the pilot attempt to maintain?

- a. Constant angle of attack.
- b. Level flight attitude.
- c. Constant altitude and airspeed.

15

A fast moving cold front can cause:

- a. Surface friction.
- b. Light showers.
- c. Thunderstorms.

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Possible mountain wave turbulence could be anticipated when winds of 40 knots or greater blow

- a. parallel to a mountain peak, and the air is stable.
- b. down a mountain valley, and the air is unstable.
- c. across a mountain ridge, and the air is stable.

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You're flying in an area of heavy rain with thunderstorms forecast ahead along your route. What is your best course of action?

- a. Check PIREPs
- b. Continue On
- c. Divert

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The conditions necessary for the formation of cumulonimbus clouds are a lifting action and:

- a. unstable air containing an excess of condensation nuclei.
- b. either stable or unstable air.
- c. unstable, moist air.

19

To determine the freezing level and areas of probable icing aloft, the pilot should refer to the

- a. Inflight Aviation Weather Advisories.
- b. Winds and temperatures aloft.
- c. Upper air analysis.

20

What clouds have the greatest turbulence?

- a. Cumulonimbus.
- b. Towering cumulus.
- c. Nimbostratus.

21

A nonfrontal, narrow band of active thunderstorms that often develop ahead of a cold front is known as a

- a. dry line.
- b. squall line.
- c. prefrontal system.

22

The suffix 'nimbus,' used in naming clouds, means

- a. a rain cloud.
- b. a cloud with extensive vertical development.
- c. a middle cloud containing ice pellets.

23

When may hazardous wind shear be expected?

- a. When stable air crosses a mountain barrier where it tends to flow in layers forming lenticular clouds.
- b. Following frontal passage when stratocumulus clouds form indicating mechanical mixing.
- c. In areas of low-level temperature inversion, frontal zones, and clear air turbulence.

24

Which weather conditions should be expected beneath a low-level temperature inversion layer when the relative humidity is high?

- a. Turbulent air, poor visibility, fog, low stratus type clouds, and showery precipitation.
- b. Light wind shear, poor visibility, haze, and light rain.
- c. Smooth air, poor visibility, fog, haze, or low clouds.

24

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What feature is normally associated with the cumulus stage of a thunderstorm?

- a. Continuous updraft.
- b. Roll cloud.
- c. Frequent lightning.

26

If you observe a dust devil crossing the runway while approaching to land, what action should you take?

- a. Land past the dust devil
- b. Go around
- c. Continue landing as normal

27

In which situation is advection fog most likely to form?

- a. An air mass moving inland from the coast in winter.
- b. A warm, moist air mass on the windward side of mountains.
- c. A light breeze blowing colder air out to sea.

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What conditions are necessary for the formation of thunderstorms?

- a. Lifting force, moist air, and extensive cloud cover.
- b. High humidity, lifting force, and unstable conditions.
- c. High humidity, high temperature, and cumulus clouds.

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Low-level turbulence can occur and icing can become hazardous in which type of fog?

- a. Steam fog.
- b. Rain-induced fog.
- c. Upslope fog.

30

If the temperature/dewpoint spread is small and decreasing, and the temperature is 62 °F, what type weather is most likely to develop?

- a. Fog or low clouds.
- b. Thunderstorms.
- c. Freezing precipitation.

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While operating in regions known for dust devils, such as the Southwest US, what is the recommended action a pilot should take when one is detected during flight operations at low altitudes?

- a. Recognize and avoid the dust devil and be prepared to take evasive action if necessary.
- b. Immediately divert to the nearest airport and land as soon as possible to avoid the dust devil.
- c. Continue on the planned flight path, as dust devils are harmless and pose no risk to aircraft.

32

Thunderstorms may contain:

- a. Turbulence and icing only.
- b. Turbulence and lightning only.
- c. Turbulence, icing, hailstones, and lightning.

33

Which in-flight advisory would contain information on severe icing not associated with thunderstorms?

- a. SIGMET.
- b. Convective SIGMET.
- c. AIRMET.

34

Which weather phenomenon is always associated with a thunderstorm?

- a. Heavy rain.
- b. Lightning.
- c. Hail.

35

Which conditions result in the formation of frost?

- a. The temperature of the surrounding air is at or below freezing when small drops of moisture fall on the collecting surface.
- b. The temperature of the collecting surface is at or below freezing when small droplets of moisture fall on the surface.
- c. The temperature of the collecting surface is at or below the dewpoint of the adjacent air and the dewpoint is below freezing.

36

What is it often called when a pilot pushes his or her capabilities and the aircraft's limits by trying to maintain visual contact with the terrain in low visibility and ceiling?

- a. Mind set.
- b. Peer pressure.
- c. Scud running.

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What are characteristics of a moist, unstable air mass?

- a. Poor visibility and smooth air.
- b. Stratiform clouds and showery precipitation.
- c. Cumuliform clouds and showery precipitation.

38

What type of turbulence would a pilot expect in a Mammatus cloud?

- a. Moderate
- b. Light
- c. Severe

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What types of fog depend upon wind in order to exist?

- a. Steam fog and ground fog.
- b. Advection fog and upslope fog.
- c. Radiation fog and ice fog.

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If there is thunderstorm activity in the vicinity of an airport at which you plan to land, which hazardous atmospheric phenomenon might be expected on the landing approach?

- a. Steady rain.
- b. Precipitation static.
- c. Wind-shear turbulence.

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One in-flight condition necessary for structural icing to form is

- a. stratiform clouds.
- b. small temperature/dewpoint spread.
- c. visible moisture.

42

Where does wind shear occur?

- a. At all altitudes, in all directions.
- b. Only at lower altitudes.
- c. Only at higher altitudes.

43

The presence of ice pellets at the surface is evidence that there:

- a. are thunderstorms in the area.
- b. has been cold frontal passage.
- c. is a temperature inversion with freezing rain at a higher altitude.

44

Frost on the wing of an airplane:

- a. Should only be removed if it has an extremely rough texture.
- b. Should always be removed before flying.
- c. Causes no problem due to its smooth surface.

45

What cloud types would indicate convective turbulence?

- a. Towering cumulus clouds.
- b. Cirrus clouds.
- c. Nimbostratus clouds.

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The life cycle of a thunderstorm cell has three distinct stages:

- a. Cumulus stage, mature stage, and dissipating stage.
- b. Stratus stage, building stage, and mature stage.
- c. Stratus stage, mature stage, and final stage.

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The mature stage of a thunderstorm begins with:

- a. formation of the anvil top.
- b. the start of precipitation.
- c. continuous downdrafts.

48

What situation is most conducive to the formation of radiation fog?

- a. Moist, tropical air moving over cold, offshore water.
- b. Warm, moist air over low, flatland areas on clear, calm nights.
- c. The movement of cold air over much warmer water.