

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.**

16

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.**

17

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**

18

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

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.**

25

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.

28

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.

29

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.

31

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.**

37

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**

39

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.

40

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.**

41

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.

46

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.

47

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.