

Aerospace: The Journey of Flight
Sample Tests, Chapters 18 – 20 (Air Environment)
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Chapter 18

1. Most of our weather occurs in the
 - a. mesosphere
 - b. stratosphere
 - c. thermosphere
 - d. troposphere

2. What is the standard lapse rate?
 - a. 1° Celsius or 3° Fahrenheit
 - b. 2° Celsius or 3.5° Fahrenheit
 - c. 3° Celsius or 2° Fahrenheit
 - d. 5° Celsius or 5° Fahrenheit

3. When a parcel of air cannot hold any more water vapor it is said to be
 - a. evaporated.
 - b. condensed.
 - c. humidified.
 - d. saturated.

4. The method of heat transfer by vertical motion is called
 - a. conduction.
 - b. convection.
 - c. advection.
 - d. radiation.

5. The rate at which the Earth's surface is heated by solar radiation is called
 - a. advection.
 - b. conduction.
 - c. insolation.
 - d. radiation.

6. On a weather map, lines of equal pressure are called
 - a. gradients
 - b. isobars.
 - c. isotherms.
 - d. troughs.

7. T/F A high is a center of high pressure surrounded by even higher pressure.

8. T/F The lateral movement of air is referred to as wind.

9. T/F Heating by direct contact is called convection.

10. T/F Jet streams have recorded winds as high as 450 mph.

Chapter 19

1. Which air mass classification refers to cold dry air?
 - a continental polar
 - b continental tropical
 - c maritime tropical
 - d maritime polar

2. What are the three basic cloud types?
 - a cumulus, stratus and cumulonimbus
 - b stratus, cirrus and stratocumulus
 - c stratus, altostratus and cirrostratus
 - d cumulus, stratus and cirrus

3. Which of the following clouds is composed entirely of ice crystals?
 - a cumulus
 - b cirrostratus
 - c nimbus
 - d stratus

4. Which cloud is associated with thunder and lightning?
 - a cirrus
 - b cumulonimbus
 - c nimbostratus
 - d stratocumulus

5. Which type of fog is formed when the wind blows moist air over a cold surface and the surface cools the air to its dew-point temperature?
 - a advection
 - b evaporation
 - c radiation
 - d upslope

6. T/F A microburst is a downdraft shear associated with thunderstorms.

7. T/F When air masses lose their punch and are not replacing one another, an occluded front develops.

8. T/F Moderate turbulence is defined as times when the aircraft may seem out of control, and occupants are thrown against seat belts.

9. T/F El Nino occurs when warm waters move in and displace the colder waters for a longer than normal period of time.

10. T/F The boundaries between air masses of different characteristics are called fronts.

Chapter 20

1. Visual Flight Rules (VFR) apply when
 - a the ceiling is 1,000 feet or higher and the visibility is 1 mile or greater.
 - b the ceiling is 2,000 feet or higher and the visibility is 2 miles or greater.
 - c the ceiling is 3,000 feet or higher and the visibility is 5 miles or greater.
 - d the ceiling is 5,000 feet or higher and the visibility is 7 miles or greater.

2. What are the three stages of a thunderstorm?
 - a beginning, middle and end
 - b building, mature and dissipating
 - c calm, developing and violent
 - d rain, lightning and thunder

3. Where do tornadoes most often occur?
 - a North America and Central America
 - b South America and Africa
 - c Asia and Africa
 - d Australia and North America

4. Hurricane winds of 160 mph would cause the hurricane to be classified as a category
 - a 1
 - b 3
 - c 5
 - d 7

5. What distinguishes the “eye” of a hurricane?
 - a It is the most violent part of a storm.
 - b It is the leading edge of a storm.
 - c It is the calm center of a storm.
 - d It is the trailing edge of a storm.

6. T/F Flood damage is often a major problem associated with hurricanes.

7. T/F Hailstones, the size of baseballs, are estimated to occur in 1 out of every 100 thunderstorms.

8. T/F A tornado has been observed in every state in the continental US.

9. T/F Rime ice has that frosty appearance seen on the walls of frozen-food lockers.

10. T/F Blowing sand is seldom lifted more than 50 feet above the surface.