**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 Class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What characteristics do aircraft designers look for when choosing materials? Select all that apply.

a. expensive to maintain

b. heavy weight

c. crack resistant

d. heat resistant

e. corrosion resistant

f. fragile

2. In order for the aviation industry to survive, \_\_\_\_\_\_\_ must be is its primary concern.

a. advertising

b. job stability

c. safety

d. low costs

3. Which UAS construction material is the lightest, easiest to shape, and easiest to repair?

a. plastic

b. titanium

c. foam

d. fiberglass

4. Multirotor drones are a type of \_\_\_\_\_\_\_ aircraft.

a. recreational

b. manned

c. lighter-than-air aircraft

d. heavier-than-air

5. Which metal is most likely to be used for landing gear assemblies?

a. steel

b. cast iron

c. aluminum

d. tin

6. The use of fire-resistant fabrics on passenger airliners is required by \_\_\_\_\_\_\_.

a. U.S. military

b. All airplane manufacturers

c. NASA

d. the FAA

7. Using strong materials in the design and construction of a drone can pose a problem
because \_\_\_\_\_\_\_.

a. they are often heavier

b. they are always more expensive

c. they can’t be used with light materials

d. they conduct electricity

8. When the upward thrust generated by the rotors equals the weight of the drone, the drone is \_\_\_\_\_\_.

a. on the ground

b. descending

c. hovering

d. climbing

9. Which of the following are reasons why composite construction materials are used to build aircraft? Select all that apply.

a. They cost less than steel.

b. They are undetectable.

c. They are lightweight.

d. They are durable.

e. They are government-supplied.

10. How does an aircraft collision avoidance system work?

a. It notifies the closest airport when other aircraft are in the vicinity.

b. It points a beam of light to oncoming aircraft.

c. It automatically steers the airplane away from an oncoming aircraft.

d. It warns the pilot when other aircraft are in the vicinity.

11. A \_\_\_\_\_\_\_ is a turbine engine that uses its rotational energy to turn a propeller.

a. rotor

b. combustor

c. turboprop

d. compressor

12. Which of the following is part of the empennage of a fixed-wing aircraft? Select all that apply.

a. rudder

b. landing gear

c. vertical stabilizer

d. horizontal stabilizer

13. Which of the following are composite materials used in the production of aircraft? Select all that apply.

a. steel

b. carbon-fiber

c. titanium

d. copper

e. fiberglass

14. An example of a safety feature designed into a general aviation airplane includes \_\_\_\_\_\_\_\_. Select all that apply.

a. ballistic parachute system

b. flaps

c. water sprinkler system

d. emergency locator transmitter (ELT)

15. What kind of drone requires a tail rotor?

a. quadcopter

b. fixed-wing drone

c. tricopter

d. single-rotor drone

16. Multirotor drones move horizontally by tilting their rotors so that thrust is created \_\_\_\_\_\_\_.

a. faster

b. in a diagonal direction

c. above the rotor

d. below the rotor

17. Aircraft manufacturers and their customers benefit when a production facility \_\_\_\_\_\_\_.

a. has too few employees

b. is run efficiently

c. uses only composite materials

d. is at sea level

18. Airframe parachutes are most commonly found on \_\_\_\_\_\_\_.

a. passenger airliners

b. helicopters

c. general aviation aircraft

d. cargo airliners

19. Why is it important for there to be no ice on the wing of an airplane? Select all that apply.

a. Ice makes the wings slippery.

b. Ice makes the airplane heavier.

c. Ice can freeze the engine(s).

d. Ice makes the wings brittle.

e. Ice changes the shape of the wing.

20. The basket of a hot air balloon is similar to the \_\_\_\_\_\_\_ of an airplane or aircraft.

a. engine

b. cargo

c. fuselage

d. seats

21. Explain how fabrics used in the construction of modern aircraft have improved when compared to vintage aircraft.

22. Describe the danger of an airliner becoming depressurized at a very high altitude. What safety measures are built into airplanes for passenger safety?

23. Explain why weight is an important consideration when designing a drone.

24. Explain how anti-torque pedals are used to change the direction a helicopter points while it is
in flight.

25. Identify which component of a rotorcraft creates lift. For a bonus point, explain how.