1. What were the earliest recorded inspirations of flight for humans? (2.A)

a. Kites

b. Birds

c. Angels

d. Leaves

2. What is the purpose of a burner on hot air balloons? (2.B)

a. It traps the air in the balloon

b. To keep passengers warm at high altitudes

c. To heat the air in the balloon causing it to rise

d. It allows hot air to escape, controlling descent

3. After World War II, the Women Airforce Service Pilots (WASPs) returned home and \_\_\_\_\_\_\_. (3.D)

a. Worked as airline pilots

b. Continued flying in the military as test pilots

c. Discovered they had many job opportunities

d. Found it difficult to remain in aviation as a career

4. True or False? The success of the Tuskegee Airmen led to the overall integration of African-Americans into the U.S. military forces. (3.C)

5. Which are some of the main parts of a jet engine? Select all that apply. (4.A)

a. Intake

b. Chevron

c. Turbine

d. Compressor

e. Exhaust

6. True or False? The first jet engines were built to enable civilians to fly across the ocean. (4.A)

7. What are some significant benefits gained from space exploration? (5.B)

a. Expanded technology and peaceful collaboration with other nations

b. Found opportunities to grow vegetation and food on other planets

c. Discovered and established new places to mine for resources

d. Learned that it is too difficult for humans to live outside of Earth’s atmosphere

8. True or False? Private companies are involved in the New Space Race. (5.B)

9. Which of the following is required to fly an unmanned aircraft system professionally? Select all that apply. (1.C)

a. You must understand English

b. You must be at least 16 years old

c. You must show proof of employment

d. You must have a remote pilot certificate

10. True or False? The International Space Station is an orbiting research laboratory operated solely by the United States. (1.D)

11. In 1943, the Women’s Auxiliary Ferrying Squadron (WAFS) and the Women’s Flying Training Detachment (WFTD) merged to become \_\_\_\_\_\_\_. (3.C)

a. National Aeronautics and Space Administration (NASA)

b. 99th Pursuit Fighter Squadron

c. Women Airforce Service Pilots (WASP)

d. Women’s Airplane Manufacturers (WAM)

12. In the early 1900s, what did the US Postal Service develop to ensure better navigation during the day and night for pilots flying the mail? (3.A)

a. A beacon system to identify routes

c. Lighted runways to help the pilots land

d. The party system to find missing postal aircraft

b. Radio communication to talk to and guide pilots

13. What was the result of NASA’s Mercury and Gemini missions in the 1950s and 1960s? (4.B)

a. They led to the discovery of water on Mars.

b. They helped to create the first space station.

c. They allowed NASA to test ways to militarize space.

d. They were stepping-stones to landing on the Moon.

14. Which of the following operates scheduled airline services and non-scheduled air transportation   
for hire? (1.B)

a. Commercial aviation operators

b. Civil aviation operators

c. Military aviation operators

d. General aviation operators

15. How is general aviation’s primary mission described? (1.B)

a. Protecting the nation from its aggressors

b. Accomplishing every mission not covered by the commercial airlines or military

c. Delivering commercial airline passengers safely and on time to their destination

d. Carrying passengers and cargo for hire on both scheduled and unscheduled routes

16. True or False? The Space Race ended when Alan Shephard became the first man on the Moon. (4.B)

17. One of the benefits of reusing rocket components is that \_\_\_\_\_\_\_. (5.B)

a. Rocket fuel costs decrease if rockets are reused

b. Rocket components last a very long time

c. Reusable rockets are simpler to use and cheap to recover

d. It is more cost-effective to reuse rockets than build a new rocket

**18. A disadvantage of using composite materials in the development of aircraft is \_\_\_\_\_\_\_\_\_\_\_\_. (5.A)**

a. Composite materials can be difficult to repair.

b. Composites create a heavier material.

c. Composites cannot be molded into complex shapes.

d. Composites have a very limited life span.

19. Which statements are true about the Wright Brothers? Select all that apply. (2.D)

a. They made the first glider.

b. They made the world’s first powered, controlled aircraft.

c. They made the first airplane without conducting research.

d. They made the first aircraft that can hold more than 10 passengers.

e. They relied heavily upon the information learned by pioneers before them.

20. As the wings on an airplane travel through air, the air movement over the top of the wing \_\_\_\_. (2.C)

a. creates equal air pressure on the top and bottom allowing for lift

b. creates more air pressure on top than on the bottom allowing for lift

c. creates a lower air pressure on top than on the bottom allowing for lift

d. creates a higher air pressure on top than on the bottom allowing for lift

21. True or False? NASA is a U.S. federal government agency. (5.B)

22. Mars One is seeking participants to \_\_\_\_\_\_\_. (5.B)

a. give lectures about Mars

b. search for water on Mars

c. buy property on Mars

d. settle a colony on Mars

23. What was one reason the Soviet Union’s launch of Sputnik in 1957 sparked the United States to   
want to become number one in space exploration? (4.B)

a. The United States was afraid that the Soviet Union was spying.

b. The Soviet Union was using their satellite to block United States communication.

c. The United States promised its citizens that their country would be the first in space.

d. The United States wanted to use a satellite to take images of the Soviet Union.

24. True or False? The U.S. Congress established NASA in 1958 to put emphasis on winning the Space Race against the Soviet Union. (4.B)

**25. One of the four forces of flight is \_\_\_\_\_\_\_\_\_\_\_\_\_. (2.C)**

a. Kinetic energy

b. Bernoulli’s Principle

c. Drag

d. Slip

26. What event corresponds to major developments in body, wing, and engine designs of   
early airplanes? (3.A)

a. World War I

b. The Korean War

c. The first World’s Fair

d. The Great Depression

27. Why are wind tunnels used in the design of aircraft? (2.D)

a. A wind tunnel can study why an airplane crashes.

b. A wind tunnel operates in a vacuum for better test results.

c. A wind tunnel can test scale models of airfoils and aircraft.

d. A wind tunnel can be used to conduct a test flight of an aircraft without effects of weather.

28. How does Archimedes’ principle help with upward force needed to fly a hot air balloon? (2.B)

a. Cold air outside the balloon creates less density.

b. Hot air inside the balloon rises and makes the balloon buoyant.

c. Hot air pushes the bottom of the balloon away from the ground.

d. The burner heats the air inside the balloon making the air inside more dense.

29. Which of the following are true about Engineering Practices? Select all that apply. (1.A)

a. They should only be used by a team of two or three engineers.

b. They are only used in the development of aircraft.

c. They can be used in any order.

d. They should only be used by engineers.

e. They can be used repeatedly.

30. By FAA standards and laws, unmanned aircraft systems must be operated in which of the following ways? Select all that apply. (1.C)

a. Not fly over people

b. Fly at or below 400 feet

c. Weigh at least 55 pounds

d. Keep within visual line of sight

e. Fly near an airport to be monitored

31. Which of the following was a significant way that aviation affected World War II as compared   
to World War I? (3.D)

a. Jet engines allowed for quicker maneuvering

b. There were fewer military aircraft during World War II

c. Most of the battles during World War II were fought using military aircraft

d. Controlling the air usually won the battle on the ground during World War II

32. True or False? Amelia Earhart was the first American woman to get her pilot’s license. (3.B)

33. A \_\_\_\_\_\_\_\_ is part of an unmanned aircraft system. (1.C)

a. glider

b. drone

c. helicopter

d. stealth bomber

34. How is space exploration accomplished? Select all that apply. (1.D)

a. Using radars

b. Using chevrons

c. Using telescopes

d. Using military aircraft

e. Using robotic space probes

35. The \_\_\_\_\_\_\_ of a bird acts most like a propeller. (2.C)

a. tail

b. wings

c. beak

d. feathers

36. Leonardo da Vinci developed the idea of a \_\_\_\_\_\_\_. It was a linen curtain shaped like a pyramid. (2.A)

a. wing

b. hot-air-balloon

c. parachute

d. kite

37. NACA hired five female “computers” in 1935 to \_\_\_\_\_\_\_. (4.B)

a. do basic math that was easy yet time-consuming

b. determine where engineers should focus their research

c. build computers that would assist NACA with improving their technology

d. perform complex calculations so NACA engineers could focus on research

38. In what ways did jet engines improve travel for airliners? Select all that apply. (4.A)

a. lower fuel costs

b. made flying safer

c. required shorter runways

d. ability to fly over the weather

e. enabled travel at higher speeds

39. Which best describes a “glass cockpit”? (5.A)

a. displays flight information on digital screens

b. uses only glass windows

c. displays flight information on round glass-covered dials

d. used only during World War II

40. Why are composite materials used to build aircraft? (5.A)

a. They dramatically improve aerodynamics.

b. They are cheaper than other materials.

c. They are lightweight and durable.

d. They are easier to work with.

41. Aviation deals with \_\_\_\_\_\_\_ whereas aerospace deals with aircraft inside and spacecraft outside Earth’s atmosphere. (1.A)

a. unmanned aircraft

b. pilots, ground crew, and passengers

c. aircraft within Earth’s atmosphere

d. spacecraft outside earth’s atmosphere

42. The Greek myth of Daedalus and his son Icarus described how they escaped from prison, flying to freedom using \_\_\_\_\_\_\_. (2.A)

a. hot air

b. bed sheets

c. tree branches and leaves

d. wings made of feathers and wax

43. The use of aviation for U.S. mail service was important because \_\_\_\_\_\_\_. (3.A)

a. it dramatically reduced costs

b. airmail provided new connections between major cities

c. airplanes were able to transport mail faster than railroads

d. airmail provided regular correspondence not available at that time

**44. True or False? A benefit of commercial air travel is the creation of economic growth. (4.A)**

45. Which of the following is one of the “six pack” of instruments located in the cockpit? Select all that apply. (5.A)

a. Altimeter

b. Artificial horizon

c. Elevator

d. Tachometer

e. Fuel gauge

46 What is the easiest and most basic navigation tool? (5.A)

a. radar

b. altimeter

c. visual navigation

d. distance-measuring technology

47. Advancements in military aviation during World War II transferred directly to \_\_\_\_\_\_\_. (4.A)

a. general aviation

b. helicopter technology

c. unmanned aircraft systems

d. commercial jet aircraft

48. Bessie Coleman learned how to fly in France because she was \_\_\_\_\_\_\_. (3.B)

a. denied access to American flight schools

b. too young to fly in the US

c. not allowed in the US military

d. a native of France

49. Which are the main parts of a hot air balloon? Select all that apply. (2.B)

a. Envelope

b. Nylon

c. Igniter

d. Burner

e. Basket

50. True or False? Engaging in argument from evidence is an engineering practice. (1.A)