

## Air Brakes – Practice Test Questions

1) Why must air tanks be drained?

- a) For pre trip inspection purposes
- b) To check for leaks
- c) To release oil and water buildup
- d) To activate the low air pressure alarm

2) What is a supply pressure gauge used for?

- a) To check tire pressure
- b) To check tank pressure
- c) To activate the low pressure alarm
- d) To check for leaks

3) All vehicles with air brakes must have a low pressure warning signal. True or False?

- a) True
- b) False

4) What are spring brakes?

- a) Hydraulic brakes
- b) Air brakes
- c) Emergency/parking brake
- d) Trailer brakes

5) Front wheel brakes are good under all conditions. True or False?

- a) True
- b) False

6) What is a dual air brake system?

- a) 2 systems which use a single set of brake controls
- b) 2 brake controls that operate from a single system
- c) A system that uses 2 brake controls
- d) A single brake that operates 2 systems

7) What are the slack adjusters?

- a) Adjusts the pressure in the tank
- b) Adjusts the spring brakes
- c) Adjusts the slack in the brake pedal
- d) Adjusts the slack in the brakes

8) How can you test the low pressure warning signal?

- a) Apply parking brake and pump the brake pedal again and again
- b) Push in on the adjuster
- c) Release the parking brake, pull hard on the adjuster
- d) Slam on the brakes traveling 20 mph or over

9) How can you check that the spring brakes come on automatically?

- a) Release parking brake and press the brake pedal again and again
- b) Apply parking brake and press brake pedal again and again
- c) Slam on the brakes while traveling 20 mph or more

d) Apply and release parking brake again and again

**10) What are the maximum leakage rates?**

- a) More than 2 psi in one minute
- b) More than 2 psi in two minutes
- c) More than 3 psi in one minute
- d) More than 3psi in two minutes

**11) Why should you be in the proper gear before starting down a hill?**

- a) The use of brakes is only a supplement to the braking effect of the engine
- b) So the brakes will not get too hot and start to catch fire
- c) To save wear and tear on the transmission
- d) So you will not pick up too much speed

**12) What factor can cause brakes to fade or fail?**

- a) Driving in a heavy rain
- b) Excessive use of service brakes
- c) Driving in heavy traffic
- d) Excessive use of emergency brake

**13) The use of brakes on a long steep downgrade is only a supplement to the braking effect of the engine. True or False?**

- a) True
- b) False

**14) If you are away from your vehicle for only a short time, you don't need to use the parking brake. True or False?**

- a) True
- b) False

**15) How often should you drain air tanks?**

- a) At the end of each week
- b) Beginning of each week
- c) At the beginning of each working day
- d) At the end of each working day

**16) How do you use the stab braking technique during emergency braking?**

- a) Brake hard with the brake pedal and hand valve until stopped
- b) Brake hard with the pedal until the wheels lock, the let off the brakes for as long as the wheels were locked
- c) Brake hard with the pedal until the wheels lock, then let off until the wheels start rolling again
- d) Pump the brake pedal rapidly and lightly

**17) When using brakes on a long steep downgrade, which of these is True?**

- a) Apply brakes when the vehicle reaches 5 mph over the safe speed, then release when the vehicle slows to safe speed again
- b) Only use the trailer brakes to maintain safe speed
- c) Use stab braking
- d) Use the engine braking effect, then when the vehicle reaches the safe speed, apply brakes until speed is reduced to about 5 mph below safe speed

18) Why should you NOT fan the brakes on and off during long downgrades?

- a) Does not allow brakes to cool
- b) The brake linings do not get hot when fanning
- c) There is less air usage when fanning
- d) None of these

19) If you must make a quick emergency stop, you should:

- a) Burn up the hand brake first
- b) Stay in a straight line and maintain control
- c) Use the full power of the brakes by locking them
- d) Steer hard while braking hard

20) A straight truck or bus air brake system cannot leak more than \_\_\_\_ psi per minute with engine off and brakes released.

- a) 1
- b) 2
- c) 3
- d) 4

21) A combination vehicle air brake system cannot leak more than \_\_\_\_ psi per minute with engine off and brakes released.

- a) 4
- b) 3
- c) 2
- d) 1

22) During normal operations, what are the parking and emergency brakes usually held back by?

- a) Bolts/clamps
- b) Centrifugal force
- c) Spring pressure
- d) Air pressure

23) When do you use the parking brake in air brake equipped vehicles?

- a) Only during pre-trip and post-trip inspections
- b) Every time you park the vehicle
- c) As little as possible
- d) When slowing down

24) If your truck has dual control valves, you can use pressure from a separate tank to

- a) Balance the service brake system while driving
- b) Stay parked without using up service air pressure
- c) Apply more pressure for stopping if the main tank is getting low
- d) Release emergency brakes to move short distances

25) If the air system develops a leak, what will keep the air in the tanks?

- a) The one-way check valve
- b) The emergency relay valve
- c) The tractor protection valve
- d) The governor

26) Which of these is normal to find in the air brake system?

- a) Water
- b) Air
- c) Oil
- d) All of these

27) What turns on the electrical stop light switch in an air brake system?

- a) The driver (by hand)
- b) Air pressure
- c) Hydraulic pressure
- d) Spring pressure

28) If the vehicle is equipped with an alcohol evaporator, what should you do everyday during winter weather?

- a) Drain the accumulated alcohol
- b) Use 5 weight oil to oil the system
- c) Change the alcohol from a new bottle
- d) Check and fill the alcohol level

29) If a failure occurs in the service brake system, what system do you need to stop the vehicle?

- a) Hand brake system
- b) Drum brake system
- c) Emergency brake system
- d) Parking brake system

30) What determines how effective the spring emergency brakes or the parking brakes work?

- a) Braking power increases when the brakes are hot
- b) Depends on the adjustment of the service brakes
- c) Can only be tested by brake service technicians
- d) Has nothing to do with the condition of the service brakes

31) What does the brake pedal do?

- a) Exerts force on the slack adjusters by rods and connectors
- b) Controls the air pressure to operate the brakes
- c) Can be used as a foot rest
- d) Is the systems main lever

32) What does the air compressor governor control?

- a) When the compressor will pump air into the storage tanks
- b) Air pressure applied to brakes
- c) Whether the compressor is in good operating condition
- d) The rpm's of the air compressor

33) On heavy commercial vehicles, what is the most common type of foundation brake?

- a) S-cam drum
- b) Wedge and drum
- c) Disc
- d) None of these

**34) In manual slack adjusters, how do you check the free play?**

- a) Apply the service brakes by hand at the brake chambers and watch for the slack adjusters to move
- b) Park on level ground and drain air pressure before making adjustment
- c) Park on level ground, chock wheels, release parking brake and pull slack adjusters
- d) Stop on level ground and apply emergency brakes

**35) What must air brake equipped vehicles have?**

- a) An air application gauge to show air used by the brake chambers
- b) An air pressure gauge to show pressure available for braking
- c) A hydraulic braking system, in case the air system fails
- d) At least 3 air tanks

**36) The warning device comes on when the air pressure in the service air tank falls below**

- a) 80 psi
- b) 60 psi
- c) 50 psi
- d) 40 psi

**37) Air loss in a single vehicle (not comb. vehicle) should not be more than \_\_\_\_\_ with engine off and brakes on.**

- a) 3 psi in one minute
- b) 2 psi in 45 seconds
- c) 1 psi in one minute
- d) 1 psi in 30 seconds

**38) Three systems are found in modern air brake systems, Service brakes, Parking brakes and:**

- a) Drum brakes
- b) S-cam brakes
- c) Foot brakes
- d) Emergency brakes

**39) When using parking or emergency brakes, what type of pressure is being used?**

- a) Air pressure
- b) Spring pressure
- c) Fluid pressure
- d) None of these

**40) Which brake system applies and releases the brakes when the driver uses the brake pedal?**

- a) Parking brake system
- b) Service brake system
- c) Emergency brake system
- d) None of these

**41) What does the air supply pressure gauge show?**

- a) How much pressure is being sent to the brake chambers
- b) How much pressure is available in the air tanks
- c) How much pressure has been used in this trip
- d) All of these

42) What does an alcohol evaporator do?

- a) Reduce ice in the air brake valve during winter driving
- b) Increases tank pressure, the way superchargers boost engines
- c) Lets the driver skip the daily tank draining
- d) Gets rid of alcohol that condenses in the air tanks

43) What is the purpose of the engine retarders?

- a) To prevent skids and slides
- b) Applies extra braking power to non-drive axles
- c) Helps slow the vehicle and reduce brake wear
- d) Provides emergency brakes

44) Which of these statements is True about brakes?

- a) Brake drums cool quickly
- b) Brakes are more effective when they are hot
- c) The heavier the vehicle or the faster the vehicle is going, the more heat the brakes have to absorb to stop it
- d) All of these

45) The air loss rate for a straight truck or bus with engine off and brakes applied should not be more than

- a) 3 psi in one minute
- b) 2 psi in 45 seconds
- c) 1 psi in one minute
- d) 1 psi in 60 seconds

46) Oil and water usually collect in compressed air tanks. If you do not have an automatic tank drain, when should you drain the air tanks?

- a) After every working day
- b) After every four hours of service
- c) Once a week
- d) Every other week

47) Why drain water from the compressed air tanks?

- a) Water over cools the compressor
- b) The low boiling point of water reduces braking power
- c) Water can freeze in cold weather and cause brake failure
- d) To keep from fouling the air compressor oil

48) Air brake equipped vehicles must have

- a) A backup hydraulic system
- b) At least two brake heaters
- c) An air use gauge
- d) A supply pressure gauge

49) What can legally hold a parking or emergency brake in position for a truck, truck tractor or bus?

- a) Spring pressure
- b) Air pressure
- c) Fluid pressure
- d) Any of these

50) You should know that your brakes are fading when

- a) Less pressure is needed on the brake pedal for each stop
- b) The brake feels spongy when pressure is applied
- c) You have to push harder on the brake pedal to control your speed on a downgrade
- d) Pressure on the brake pedal is released and speed increases

51) Slack adjusters on s-cam brakes need adjustment if they move more than two inches when the push rod attaches.

- a) True
- b) False

52) With the engine at operating rpm, the air pressure should build from 85 to 100 psi in 45 seconds in a dual air system.

- a) True
- b) False

53) Air pressure loss in a combination vehicle should not be more than 1 psi per minute while pressure is on the brake pedal.

- a) True
- b) False

54) At 55 mph on dry pavement, the air brakes lag distance adds about 32 feet to total stopping distance.

- a) True
- b) False

55) Air brakes cool very slowly.

- a) True
- b) False

56) Excessive brake use from speed can cause too much heat to build up in the air brakes.

- a) True
- b) False

57) If the low pressure alarm comes on you should stop and park your vehicle as soon as possible.

- a) True
- b) False

58) It is suggested that you drain your air tanks at the end of each week to remove dirt and oil.

- a) True
- b) False

59) When spring brakes come on, lightly loaded vehicles will build air pressure quickly.

- a) True
- b) False

60) The s-cam drum is the most common type of foundation brake.

- a) True
- b) False

- 61) The supply pressure gauge tells you how long before the s-cam turns.  
a) True  
b) False
- 62) Drum brakes are the only type of brake in which brake fade occurs.  
a) True  
b) False
- 63) On a heavy vehicle, the emergency brake is usually held in place by spring pressure because air pressure can leak away.  
a) True  
b) False
- 64) Some vehicles have a separate air tank which can be used to release the spring brakes.  
a) True  
b) False
- 65) The two systems of a dual air brake system is the primary and secondary.  
a) True  
b) False
- 66) The spring brakes come on when the air pressure drops too much.  
a) True  
b) False
- 67) When the brakes are very hot you should not use the parking brake.  
a) True  
b) False
- 68) The total stopping distance traveling at 55 mph under normal conditions is about 100 feet.  
a) True  
b) False
- 69) Modern air brake systems use three braking systems - service, parking and emergency.  
a) True  
b) False
- 70) The air compressor regulator controls when the air compressor will pump air into the air storage tanks.  
a) True  
b) False
- 71) The alcohol evaporator condenses the air in the brake system.  
a) True  
b) False
- 72) The first tank the air compressor pumps air to is installed with a safety relief valve to protect the tank and the rest of the system from too much air pressure.  
a) True  
b) False

73) While testing the service brakes, if your vehicle pulls to one side, there may be a problem with the service brakes.

- a) True
- b) False

74) When going down a long or steep downgrade, the braking effects of the engine should be supplemented by the use of the brakes.

- a) True
- b) False

75) You should maintain steady pressure on the brakes and hold the steering wheel firmly when the wheels lock up.

- a) True
- b) False

76) The air compressor governor controls:

- a. the speed of the air compressor.
- b. air pressure applied to the brakes.
- c. when the compressor will pump air into the storage tanks.

77) Modern air brake systems combine three different systems. They are the service brake, the parking brake and the:

- a. emergency brakes.
- b. foot brakes.
- c. S-cam brakes.

78) If the air compressor develops a leak, what keeps the air in the tank?

- a. the tractor protection valve.
- b. the emergency relay valve.
- c. the one way check valve.

79) Vehicles with air brakes must have:

- a. at least two air tanks.
- b. an air pressure gauge, to show the pressure available for braking.
- c. an air use gauge, to show air used by the brake chambers for braking.

80) A straight truck or bus air brake system cannot leak more than \_\_\_\_ per minute with the engine off and the brakes released.

- a. 1 psi
- b. 2 psi
- c. 3 psi

81) During normal driving, parking and emergency brakes are usually held back by:

- a. air pressure.
- b. spring pressure.
- c. centrifugal force.

82) To check the free play in the manual slack adjusters, you need to:

- a. stop on level ground and apply the parking brake.
- b. park on level ground, chock the wheels and release the parking brake.

c. apply the service brake by hand and watch the slack adjusters move.

83) The effectiveness of the spring brakes:

- a. has nothing to do with the condition of the service brake.
- b. can only be tested by highly trained brake service people.
- c. depends on the adjustments of the service brakes.

84) Which of the following makes total stopping distance longer for air brakes than hydraulic?

- a. perception distance.
- b. reaction distance.
- c. brake lag.

85) The first thing to do when a low pressure warning comes on is:

- a. stop and safely park as soon as possible.
- b. upshift.
- c. open the air supply valve.

86) Air braking takes more time than hydraulic braking because air brakes:

- a. use different brake drums.
- b. need to have air flow through the lines to work.
- c. require heavier return springs.

87) Experts do not recommend fanning (on-again off-again braking) for long downhill runs because:

- a. air usage is less when fanning.
- b. brake linings do not get hot when fanning.
- c. the short time off the brakes does not allow the brakes to cool.

88) Oil and water that collects in air tanks can make brakes fail. If you do not have automatic tank drains, when should you drain the air tanks?

- a. every other day.
- b. every day.
- c. every week.

89) the driver must be able to see a warning that is given when air pressure in the service air tanks falls below:

- a. 40 psi.
- b. 50 psi.
- c. 60 psi.

90) An air brake system safety relief valve opens at about:

- a. 20 to 45 psi.
- b. 120 psi.
- c. 150 psi.

91) When some air brakes in the system are doing more work than others:

- a. those brakes will develop more heat.
- b. vehicle handling will be effected.
- c. all the above.

92) Your safety relief valve has opened several times. This means \_\_\_\_\_.

- a. the system is working properly.
- b. your pressure is probably low.
- c. the system needs immediate attention.

93) At what air pressure should the low air warning alarm come on?

- a. 45 psi.
- b. 25 psi.
- c. must come on by 60 psi.

94) With the brakes released on a single vehicle, what is the allowable air lose?

- a. 4 psi.
- b. 3 psi.
- c. 2 psi.

95) To test the air compressor on a dual air brake vehicle, run the engine at a fast idle to charge the air the system. Your gauges should show your \_\_\_\_\_.

- a. pressure builds from 85 to 100 psi with-in three minutes.
- b. your pressure builds from 85 to 100 psi with-in 45 seconds.
- c. the compressor cuts out by 75 psi.

96) Spring brakes are applied by \_\_\_\_\_?

- a. air pressure.
- b. electrical current.
- c. a means other than air, electrical or hydraulic.

97) Most large vehicles with air brakes have spring brakes which \_\_\_\_\_.

- a. are part of the parking brake systems operation only.
- b. are part of the service brake system only.
- c. are part of both the parking and emergency brakes.

98) What color is the parking control knob on the dash of the vehicle?

- a. red.
- b. green.
- c. yellow.

99) What would cause all of the air brake systems on a vehicle to have poor braking power.

- a. low hydraulic fluid.
- b. brakes being out of adjustment.
- c. a broken air line.

100) If a low air pressure warning comes on, what should you do?

- a. pull off the road as soon as it is safe to do so.
- b. you can safely continue until you get to the next service center.
- c. turn it off so that it will not distract you.

101) "Cut - in" pressure is normally set to \_\_\_\_\_ psi.

- a. 100.
- b. 125.
- c. 150.

102) How often should you drain your air tanks?

- a. Monthly.
- b. Ever 3 months or 3000 miles.
- c. Daily.

103) Which of the following is not an air brake subsystem?

- a. Spring brake system.
- b. Service brake system.
- c. Parking brake system.

104) What is a "Wig Wag"?

- a. A mechanical arm that signals low air pressure.
- b. A spring mount for hair pieces.
- c. Part of the stop light system.

105) "Cut - out" pressure is normally set to \_\_\_\_ psi.

- a. 100.
- b. 125.
- c. 150.

106) Front brake limiting valves are found on:

- a. Older vehicles made before 1975.
- b. New import vehicles only.
- c. School buses.

107) To reduce the risk of ice, some air systems incorporate:

- a. An air compressor heating unit.
- b. An air tank warmer unit.
- c. An alcohol evaporator.

108) At 55 MHP brake lag ( on air brake vehicles) can add an additional \_\_\_\_ feet to your overall stopping distance.

- a. 32 feet.
- b. 64 feet.
- c. 100 feet.

109) When testing service brakes you should look for:

- a. Pulling to either side.
- b. Delayed stopping action.
- c. All the above.

110) In newer vehicles, parking brakes are applied using:

- a. A blue flip switch.
- b. A yellow and red lever.
- c. A yellow diamond shaped push-pull knob.

# Air Brakes - Practice Test - Answers

|       |       |       |        |
|-------|-------|-------|--------|
| 1) C  | 26) B | 51) A | 76) C  |
| 2) B  | 27) B | 52) A | 77) A  |
| 3) A  | 28) D | 53) B | 78) C  |
| 4) C  | 29) C | 54) A | 79) B  |
| 5) A  | 30) B | 55) A | 80) B  |
| 6) A  | 31) B | 56) A | 81) A  |
| 7) D  | 32) A | 57) A | 82) B  |
| 8) A  | 33) A | 58) B | 83) C  |
| 9) A  | 34) C | 59) B | 84) C  |
| 10) C | 35) B | 60) A | 85) A  |
| 11) A | 36) B | 61) B | 86) B  |
| 12) B | 37) A | 62) B | 87) C  |
| 13) A | 38) D | 63) A | 88) B  |
| 14) B | 39) B | 64) A | 89) C  |
| 15) D | 40) B | 65) A | 90) C  |
| 16) C | 41) B | 66) A | 91) C  |
| 17) D | 42) D | 67) A | 92) C  |
| 18) A | 43) C | 68) B | 93) C  |
| 19) B | 44) C | 69) A | 94) C  |
| 20) B | 45) A | 70) A | 95) B  |
| 21) B | 46) A | 71) B | 96) C  |
| 22) D | 47) C | 72) A | 97) C  |
| 23) B | 48) D | 73) A | 98) C  |
| 24) D | 49) A | 74) A | 99) B  |
| 25) A | 50) C | 75) B | 100) A |

101) A  
102) C  
103) A  
104) A  
105) B  
106) A  
107) C  
108) A  
109) C  
110) C