Eagle Sport Aviation Club

Piper PA-25 Pawnee Written Exam

Name: _____

Corrected and graded by: _____

1) What is the minimum oil level for operation of the Pawnee? _____ qts

2) What is the maximum recommended oil level for the Pawnee? _____ qts

3) What happens if it is filled above the maximum recommended oil level? _____

_____

_____

4) What is the maximum number of tach hours that the Pawnee can be flown with a full tank before it needs to be refueled?

_____hours

5) What is the recommended minimum initial descent RPM after a tow? _____ rpm

6) Why do we maintain this minimum RPM? _____

_____

_____

7) What is the maximum recommended RPM in the initial descent after a tow? _____ rpm

8) Why don't we operate above this RPM in the descent? _____

_____

_____

9) Thus, from the previous questions the initial descent RPM range is _____rpm

10) You must be a member of the SSA to operate this aircraft? (true / false)

11) The decision of whether safe conditions exist for towing is with the tow pilot? (true / false)

12) It is the responsibility of the tow pilot to inspect the rope at the beginning of the day.

(true / false)

13) It is the responsibility of the tow pilot to insure that the rope is correctly installed each time rope is installed in the tow hitch. (true / false)

14) The section of the FAR's that addresses operating and flight rules for towing gliders is

_____

15) The tow rope must be _____ % of the "weight" of the glider being towed.

16) The tow rope breaking strength must be no _____ % of the "weight" of the glider being towed.

17) The "weight" referred to here is _____ weight.

18) The rope may be stronger than the above maximum strength if what conditions exists?

_____

_____

_____

_____

_____

19) The section of the FAR's that addresses the minimum pilot requirements for towing a glider is _____

20) A pilot towing a glider must have at least _____ hours in aircraft category and class.

21) You must have an endorsement from an authorized instructor that certifies that you have received ground and flight training in towing. (true / false)

22) What are the currency requirements for towing?

_____

_____

23) What are the requirements to be an authorized instructor to certify a new tow pilot? _____

_____

_____

24) A checkout and morning preflight include being able to close your eyes and reach all critical controls including the tow release. (true / false)

25) Each time you strap in for a tow, you should check that the belts are configured such that you can reach all controls including the tow release. (true / false)

26) The fuel sump should be checked at the beginning of the day and after each fueling. (true / false)

27) The minimum altitude for rope on operations over a person, road or any other manmade object is 200 feet. (true / false)

28) Being low over a road with rope on operations can result in serious injury or death. (true / false)

29) A written checklist must be used for the first preflight of the day. (true / false)

30) The cockpit mounted checklist must be used for each takeoff. (true / false)

31) A tow may not be initiated unless what three signals are seen?

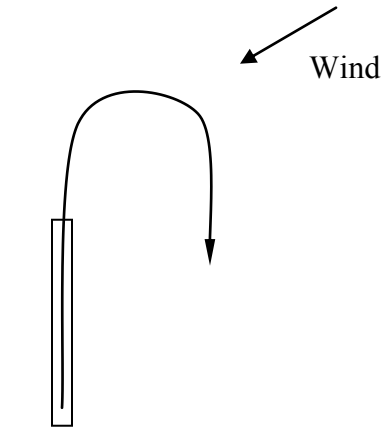
1) _____

2) _____

3) _____

32) The only exception to this rule is an unassisted takeoff. As the tow pilot it is your responsibility To determine the appropriateness of an unassisted takeoff under the conditions that exist (true / false)

33) Which of the following takeoff paths is the best and why?



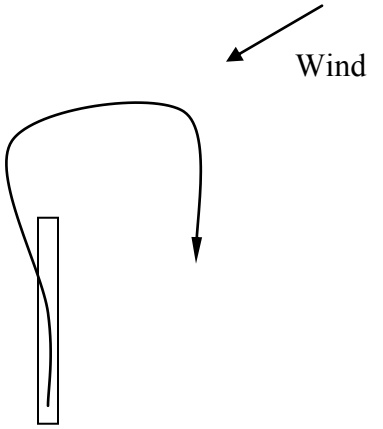
☐ Good ☐ Poor

Why? _____

_____

_____

_____



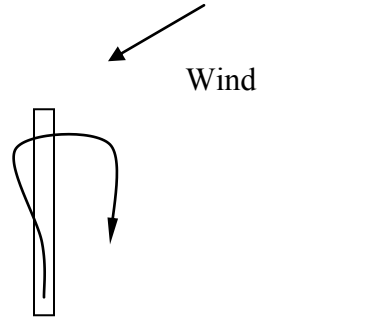
☐ Good ☐ Poor

Why? _____

_____

_____

_____



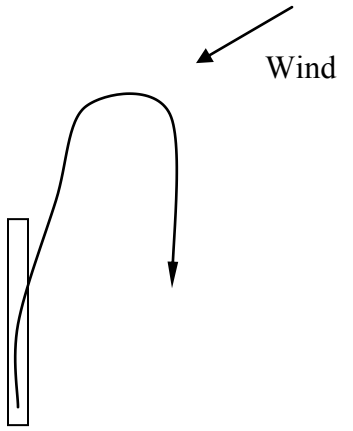
☐ Good ☐ Poor

Why? _____

_____

_____

_____



☐ Good ☐ Poor

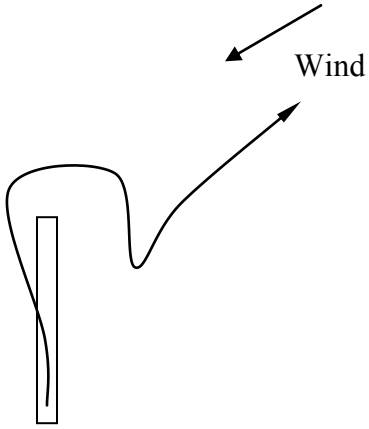
Why? _____

_____

_____

_____

34) You are towing a **<u>solo student pilot</u>**. Determine which path would be best.



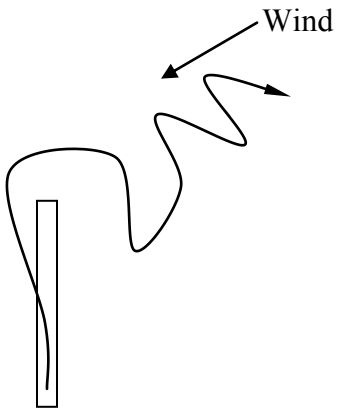
☐ Good ☐ Poor

Why? _____

_____

_____

_____



☐ Good ☐ Poor

Why? _____

_____

_____

_____

35) All instructional and student pilot tows should be flown such to allow for a normal pattern after release from 1,000 feet. (true / false)

36) At all key release altitudes, 1,000, 2,000, 2,500 and 3,000 feet and instructional or solo student Pilot tow should be at a point where, given no lift, the wind would drift the glider to a mid-field downwind point. (true / false)

37) There is no difference between towing a student pilot and an experienced pilot. (true / false)

38) An instructional flight to teach slow flight, turns and airspeed control releases at 2,500 feet. To get back to the airport the instructor must instruct the student pilot to fly directly towards the airport. They arrived, from a straight glide off of tow, at the mid-field downwind position at 1,200 feet. The tow pilot put the flight in a bad position and wasted the students flight. (true / false)

39) At key altitudes, 1,000, 2,000, 2,500 and 3,000, the heading of the tow should be such that the airport is in sight (not behind the glider). (true / false)

40) It is okay to tow a glider directly away from the airport for extended periods of time. (true / false)

41) We tow with the windows open in the Pawnee. (true / false)

42) It is okay to tow with the windows open only when it is hot. (true / false)

43) On the initial takeoff roll a window comes open. You should continue with the tow as normal and make no attempt to close the window. (true / false)

44) The window on the Pawnee can be easily closed in flight. (true / false)

45) If the window comes open during any portion of the flight, leave it and fly normally. (true / false)

46) A glider aborts a tow in the first 5 seconds of a launch. The tow plane should continue a normal takeoff and come back around for a landing. (true / false)

47) The Pawnee suffers a power loss 5 seconds in to the launch. The Pawnee should abort to the left side of the runway and the glider to the right in order to separate the two. (true / false)

48) It is best if the wing runner uses a hook to hook up a glider because it allow for another inspection of the rope. This will help find knots and other potential problems. (true / false)

49) If a wing runner is making mistakes hooking up a glider you should provide guidance to make sure that it is done properly. (true / false)

50) It is okay to continuously run over the rope and allow dirt to work into the fibers of the rope. (true / false)

51) The propeller blast of the Pawnee can break an open canopy. (true / false)

52) The Pawnee will not start rolling for some unknown reason. It is okay to go above 2,000 RPM to free it. (true / false)

53) The Pawnee will not start rolling for some unknown reason. It is possible that the parking break is set and the rudder pedals must be full depressed to release them. (possible / not possible)

54) The Pawnee will not start rolling for some unknown reason. It is possible that it is in a rut in the runway and should be shut down and pushed out. (possible / not possible)

55) The Pawnee will not start rolling for some unknown reason. It is possible that it is chocked or tied down. (possible / not possible)

56) Advancing the power in ground effect during a landing to extend the touchdown point can result in a wing tip stall at low speeds. (true / false)

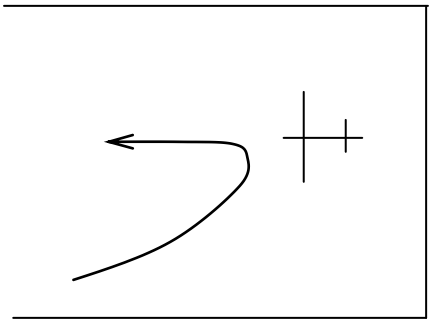
57) In the advent of a wing tip stall in ground effect, aileron away from the roll will make things better. (true / false)

58) Other than ground personnel check-outs, it is okay for more than one person to stand in front of the glider during a hook up. (true / false)

59) There is a danger zone in front of the tow plane and glider, about 30 degree to each side. There should be no one in this area during launch. (true / false)

60) There should be no one immediately behind the glider during launch. It is difficult in the mirrors to determine if a person is in front of the horizontal stabilities or behind it. There have been people who appeared to be behind the horizontal that were hit by it during launch. (true / false)

61) The best method of pulling in front of a glider in the Pawnee for tow is:



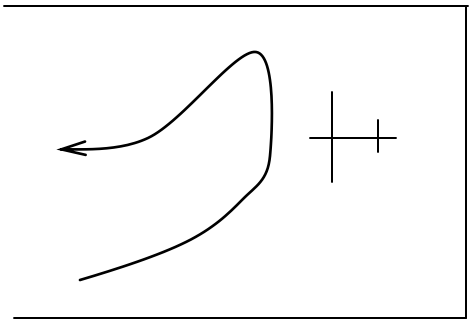
☐ Good ☐ Poor

Why? _____

_____

_____

_____



☐ Good ☐ Poor

Why? _____

_____

_____

_____

62) You should make sure that you perform an RPM check immediately after applying full power. The RPM should be at or above 2,250 RPM. (true / false)

63) There are gliders that have stall speeds greater than the Pawnee. (true / false)

64) A glider with a high stall speed could be towed too slow by a Pawnee. (true / false)

65) A glider being towed too slow can speed up him/her self (the glider can speed up). (true / false)

66) Towing a glider too slow can result in a stall/spin and result in a fatality. (true / false)

67) It is not important to know if a glider is carrying water blast. (true / false)

68) A glider that is being towed too slow may fly in ground effect but stall when trying to climb out of ground effect. (true / false)

69) The problem with towing a Schweizer glider fast is that the controls will be heavy and it will require a lot of forward stick pressure. (true / false)

70) The initial launch is the same for all gliders. (true / false)

71) How should the throttle be advanced for a Schweizer glider?

_____

_____

_____

_____

72) Many older "tail sitting" fiberglass gliders have stalled ailerons at low speeds during takeoff and landing. Thus, they have no roll control at low speeds. (true / false)

73) How should the throttle be advanced for a glider from question #72?

_____

_____

_____

_____

74) Some of these gliders open the dive brakes during the initial takeoff run to gain more aileron control. (true / false)

75) If you see the dive brakes open and the glider pilot did not specifically tell you that they would be open, you should tow the glider. (true / false)

76) If a glider pilot intends to use the dive brakes on the initial roll of a takeoff, that should be coordinated with the tow pilot ahead of time. (true / false)

77) Excessive braking on the ground on grass fields can break the wheel bolts. (true / false)

78) The wheel bolts and brake linings should be checked on every preflight. (true / false)

79) Excessive braking on the ground can stand a Pawnee on its nose. (true / false)

80) It is okay to descend in the Pawnee after a tow over an area with no place to land. (true / false)

81) It is a good idea to remain within glide distance of the airport below 2,000 feet. (true / false)

82) The fuel shut off value is not used much. It is shut off and then turned back on. Should the valve itself be checked before flight? (yes / no)

83) Where is the actual fuel shut off valve (not the handle)?

_____

_____

_____

84) During tow, it is important to fly the proper airspeed. But, this should be done with a pitch attitude and occasional reference to the airspeed indicator. (true / false)

85) In turbulent conditions, you should chase the airspeed indicator to maintain airspeed. (true / false)

86-97) The next set of questions refers to the following situation:

A pilot performs a takeoff roll in the Pawnee with no crosswind corrections and no glider. The wind is strong and from the left. Please fill in the following blanks: The Pawnee will start to turn _____ (away from, into) the wind due to _____ (dihedral effect, weather vane stability, scuff effect). This turn is due to lack of proper _____ (elevator, rudder, aileron) control.

As a result, the Pawnee will be on the _____ (upwind, downwind) side of the centerline. The proper placement of the ailerons when on this side of the centerline would be _____ (towards the centerline, away from the centerline, into the wind, downwind). The effect that can further aggravate this yawing situation is _____ (dihedral effect, adverse yaw, spiraling slipstream). The airplane will tend to roll _____ (away from, towards) the wind due to _____ (dihedral effect, adverse yaw, weather vane stability).

Having the downwind wing down in a tailwheel airplane is _____ (stable, unstable). The proper correction for this situation would be _____ (downwind, upwind) rudder and ailerons _____ _____ (towards the centerline, away from the centerline, into the wind, downwind). The worst thing that can be done in this situation is to apply _____ (downwind, into the wind) ailerons.

98) During a tow, full control deflection is required to fly straight. The tow pilot should release immediately. (true / false)

99) The biggest danger to the tow pilot is a glider going high on tow close to the ground. This will pull the tail of the low plane up and nose it into the ground. (true / false)

100) If a glider becomes very high on tow while the tow is close to the ground, the tow pilot should release immediately. (true / false)

101) The tail brace wires can be used to lift the tail and/or move the tail on the ground. (true / false)

Math Question:

There are two tow pilots: tow pilot "A" and tow pilot "B". Both tow pilots flight tows in the exact same way in flight. Each pilot takes 10 minutes to hook up tow, descend and land. Pilot "A" waits for the glider pilot to be nearly ready before starting the engine. Whereas Pilot "B" tends to start the engine 2 minutes before the glider pilot is ready. How many tows per hour does each of the pilots average?

A: ____ B: _____

Over a 2,000 hour TBO on the engine, how many tows does each pilot make?

A: _____ B: _____

How many more tows would Pilot "A" make over the life of the engine? If each tow cost $25, how much more revenue would Pilot "A" produce during the TBO?

_____

_____