

**ARROW II PA-28R-200 KNOWLEDGE EXAM**

1. The minimum fuel grade approved for this airplane is \_\_\_\_\_.
2. Maximum oil capacity is \_\_\_\_\_ quarts; standard (WINFC) grade/viscosity is \_\_\_\_\_.
3. WINFC's Arrow is equipped with a \_\_\_\_\_ - \_\_\_\_\_, \_\_\_\_\_ - \_\_\_\_\_ propeller.
4. An alternate induction air system is provided in case the primary air source is obstructed. It may be operated either \_\_\_\_\_ or \_\_\_\_\_.
5. Describe the landing gear actuating system:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. The landing gear will cycle in approximately \_\_\_\_\_ seconds.
7. The maximum landing gear operating speeds are: \_\_\_\_\_ (Vle), \_\_\_\_\_ (Vlo-up), \_\_\_\_\_ (Vlo-down).
8. Is the automatic gear extension system operable in 8991E? (*See Service Bulletin 866A*) \_\_\_\_\_
9. A manual override is provided so that the gear can be retracted more quickly following take-off. How is the override locked in the up position? \_\_\_\_\_  
\_\_\_\_\_
10. How will activation of the override feature be indicated? \_\_\_\_\_  
\_\_\_\_\_
11. There are no mechanical \_\_\_\_\_ in the gear system. In the event of hydraulic system malfunction, the gear will \_\_\_\_\_ to the gear-down-and-locked position.
12. The gear warning horn and light will activate under what conditions?
  - 1) \_\_\_\_\_
  - 2) \_\_\_\_\_
  - 3) \_\_\_\_\_
13. Assuming malfunction of the normal gear system, how can the landing gear be extended in an emergency? \_\_\_\_\_
14. The nose gear is steerable through a \_\_\_\_\_ arc on either side of center using the \_\_\_\_\_ and \_\_\_\_\_.
15. As the nose wheel retracts, the steering linkage \_\_\_\_\_ to reduce \_\_\_\_\_ loads in flight.
16. The toe brakes and hand brake all have individual \_\_\_\_\_, but share a common \_\_\_\_\_.
17. The Arrow has \_\_\_\_\_ fuel tanks, each with a \_\_\_\_\_ gallon capacity. Total useable fuel is \_\_\_\_\_ gallons.
18. Primary electrical power is provided by a \_\_\_\_\_ volt, \_\_\_\_\_ amp \_\_\_\_\_.
19. Secondary/starting power is provided by a \_\_\_\_\_ volt, \_\_\_\_\_ amp-hour \_\_\_\_\_.
20. The ammeter displays \_\_\_\_\_.
21. Normal vacuum is \_\_\_\_\_ inches of mercury.
22. Higher vacuum settings will \_\_\_\_\_ the gyros; lower settings will cause the gyros to be \_\_\_\_\_.
23. The annunciator panel located on the upper instrument panel indicates malfunctions of what systems? \_\_\_\_\_
24. What two malfunctions could individually cause a propeller over-speed condition?
  - 1) \_\_\_\_\_
  - 2) \_\_\_\_\_

25. If a prop over-speed does occur, what five steps are to be followed?  
 1) \_\_\_\_\_ 4) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_  
 3) \_\_\_\_\_
26. Before performing the emergency gear extension, what four items should be checked?  
 1) \_\_\_\_\_ 3) \_\_\_\_\_  
 2) \_\_\_\_\_ 4) \_\_\_\_\_
27. Emergency gear extension should not be accomplished above \_\_\_\_\_ MPH.
28. If the gear fails to lock down with the emergency gear extension procedure, what should be attempted? \_\_\_\_\_
29. In the event of an engine failure, best glide angle with the prop control set in full "decrease RPM" will result in approximately \_\_\_\_\_ miles of travel for every \_\_\_\_\_ feet of altitude. (This is a glide ratio of \_\_\_\_\_ to 1.)
30. If an off-airport landing is selected, lock the emergency gear override lever in the \_\_\_\_\_ position before airspeed drops below \_\_\_\_\_ MPH to prevent automatic gear extension.
31. V<sub>so</sub> \_\_\_\_\_ V<sub>s</sub> \_\_\_\_\_ V<sub>r</sub> \_\_\_\_\_ V<sub>fe</sub> \_\_\_\_\_  
 V<sub>no</sub> \_\_\_\_\_ V<sub>ne</sub> \_\_\_\_\_ V<sub>a</sub> \_\_\_\_\_  
 V<sub>x</sub> (gear down) \_\_\_\_\_ V<sub>x</sub> (gear up) \_\_\_\_\_  
 V<sub>y</sub> (gear down) \_\_\_\_\_ V<sub>y</sub> (gear up) \_\_\_\_\_  
 Cruise Climb \_\_\_\_\_ V<sub>mg</sub>(gear up) \_\_\_\_\_  
 Max Cross Wind \_\_\_\_\_ V<sub>mg</sub> (gear down) \_\_\_\_\_
32. Short-field take-off: Flaps \_\_\_\_\_ degrees. Rotate at \_\_\_\_\_ MPH. Accelerate to \_\_\_\_\_. Gear retract. Accelerate to \_\_\_\_\_. Retract flaps slowly.
33. The mixture should be leaned in cruising operation above \_\_\_\_\_ feet altitude and at pilot's discretion at lower altitudes when power is \_\_\_\_\_% or less. If there is any doubt whether power is below \_\_\_\_\_%, use full rich mixture.
34. On a normal landing, there will be less chance of skidding the tires if the \_\_\_\_\_ are \_\_\_\_\_ before applying the \_\_\_\_\_.
35. Braking is most effective when \_\_\_\_\_ is applied to the control wheel, putting most of the aircraft weight on the \_\_\_\_\_-\_\_\_\_\_ without lifting the \_\_\_\_\_.
36. Before attempting to reset any circuit breaker, allow a cooling period of \_\_\_\_\_ to \_\_\_\_\_ minutes.
37. Due to the shape of the fuel tanks, running turning \_\_\_\_\_ should be avoided as \_\_\_\_\_ interruption may occur.
38. Similarly, prolonged slips, skids, or other radical or extreme maneuvers may cause \_\_\_\_\_ interruption if the fuel tank being use is not \_\_\_\_\_.
39. The pilot should become familiar with the proper position of his feet on the rudder pedals to avoid interfering with the \_\_\_\_\_ when moving the rudder pedals or operating the brakes.
40. In case of run-away electric pitch trim failure, how is the pitch trim disengaged?  
 \_\_\_\_\_
41. How may the pitch trim be over-powered?  
 \_\_\_\_\_

Pilot \_\_\_\_\_ CFI \_\_\_\_\_ Date \_\_\_\_\_