# Icing Quiz

**AIR ECHO ALPHA 51, LLC**

**Objective:** Evaluate aircraft icing knowledge.

1. What two conditions must be present for structural icing to occur on an airplane? _____ & _____

2. What type of clouds can produce the most severe icing?

   ❑ Stratus ❑ Cumulus ❑ Cirrus

3. There are generally two types of structural icing; _____ ice that has an opaque appearance and can change the shape of an airfoil destroying lift, and _____ ice which has a fast accumulation rate and is very difficult to remove. Mixed or cloudy ice is the combination of the two.

4. Structural icing can build up on any exposed surface, causing loss of lift, an increase in weight and control problems. At what temperatures might structural ice occur? _____.

5. Match the term with the proper description:

   ❑ Frost
   ❑ Most severe condition for rapid ice build up
   ❑ Rime Ice
   ❑ Indicative of freezing rain @ higher altitudes.
   ❑ Clear Ice
   ❑ Created by small, supercooled water droplet that freeze on contact
   ❑ Freezing Rain
   ❑ Large supercooled water droplets that flow back across the wing before freezing
   ❑ Ice Pellets
   ❑ Even the lightest coating can rapidly change the behavior of the airfoil

6. What are some anti-ice measures you can use in non-icing approved Cessna 172-R?

   ❑ Carb heat ❑ Window heat/defrost ❑ Pilot heat

7. In addition to Warm, Cold and Occluded fronts, ____-pressure areas are likely to contain icing conditions.

   ❑ Low ❑ High ❑ Both

8. Which of the following is are symptoms of airframe icing?

   ❑ Decrease in climb rate ❑ Decrease in airspeed ❑ Trim changes
   ❑ Higher than normal power settings ❑ Changes in control authority

   Ice often forms FIRST on what surfaces?

   ❑ Leading edge of the wing ❑ Antennae ❑ Windshield
   ❑ Propeller ❑ Probes ❑ Inlets

9. If the pitot tube becomes completely iced up in flight (including its drain hole), indicated airspeed will ____.

   ❑ Drop to zero
   ❑ Remain pegged at the speed indicated when the tube became blocked
   ❑ Increase in a climb and decrease in a descent
   ❑ Decrease in a climb and increase in a descent

10. The standard temperature lapse rate is approximately _____$^{o}$ C per 1000 feet. If the temperature is 50$^{o}$ F (10$^{o}$ C) @ KEIK (5100ft) what is the approximate freezing level?_____ ( Temp in $^{o}$C / Lapse rate = X + elevation)