Altimeter and Density Altitude Quiz

1) Aircraft altimeters are:
   a) Provided with a temperature compensation table in the POH
   b) Have a knob to compensate for local barometric pressure
   c) Cannot be compensated for temperature or pressure errors

2) The altitude we most commonly observe on our altimeter is:
   a) MSL
   b) AGL
   c) Density

3) The international standard atmosphere (ISA) is:
   a) Only valid at MSL
   b) A representation of what we will observe when flying
   c) A collective vote taken after many years of studying the earth's atmosphere

4) The international standard atmosphere (ISA) is used to:
   a) Study skew-T charts by meteorologists only
   b) Provide a baseline for aircraft performance determination
   c) Define atmospheric conditions at mean sea level (MSL)

5) To read Pressure Altitude from an aircraft altimeter by:
   a) Setting the Kollsman window to local barometric pressure
   b) Setting the Kollsman window to ISA pressure at MSL
   c) It can't be done, PA cannot be read from an aircraft altimeter

6) The maximum allowable MSL error in an aircraft altimeter is:
   a) +/- 100 feet when compared to field elevation using field pressure
   b) +/- 75 feet when compared to field elevation using field pressure
   c) +/- 50 feet when compared to field elevation using field pressure

7) Airplane altimeter reads 7,500' MSL; the local barometric pressure is 29.92" Hg, your outside air temperature is 0 deg C. You can also infer that 7,500' is also:
   a) Pressure altitude
   b) Absolute altitude
   c) True altitude and pressure altitude

8) You are flying at 10,000' MSL with a local field barometer of 30.01". The field elevation is 4,000' and the AWOS is reporting temp/dew point of -20/-25. Your true altitude is about:
   a) 10,570'
   b) 6,570'
   c) 9,430'

9) You fly from an airport with a barometer reading of 30.00" to a destination airport with a reading of 29.90" You neglect to reset your altimeter prior to entering the traffic pattern, the result will be:
   a) You will fly a traffic pattern 50' higher than normal at the destination airport
   b) You will fly a traffic pattern 100' lower than normal at the destination airport
   c) Not much of a change as it is only a 0.1" difference in pressure

10) You fly into an airport at a field elevation of 620'. When you get ready to depart, you note the ATIS is out of service, you would:
   a) Leave the barometric pressure alone, it probably hasn't changed that much anyway
   b) Set the Kollsman knob so that the altimeter reads 620'
   c) Set the barometric pressure to 29.30 inHg in the Kollsman window

11) You climb a 100' vertical ladder on the ramp at KHYI which has a field elevation of 595', your altitude is:
   a) 695' MSL
   b) 100' Absolute
   c) 100' True

12) Air Density increases with an increase in:
   a) Humidity
   b) Temperature
   c) Pressure

13) Density Altitude is:
   a) MSL altitude corrected for non-standard temperature
   b) Pressure altitude corrected for local barometric pressure
   c) Pressure altitude corrected for non-standard temperature

14) At 20,000' the ISA temperature is:
   a) - 25 deg F
   b) – 55 deg C
   c) – 25 deg C

15) You obtain the following upper air wind/temp for KCLL at 6,000' as 3512+19. Another way to represent this temperature is: (note: all temps are in deg C)
   a) ISA = 3
   b) ISA + 22
   c) ISA + 16

16) For question 15, if your local barometric pressure is 29.95 "Hg, you would expect the density altitude at 6,000' to be about:
   a) 10,000'
   b) 8,000'

c) 4,000’

17) Moist air is:
   a) More dense that dry air
   b) Less dense than dry air
   c) The same density as dry air

18) You are taking off from an airport at a field elevation of 5,000’ with a baro setting of 29.95 and an outside air temperature of about 104 deg F. The density altitude is about:
   a) 9,000’
   b) 1,000’
   c) 5,000’

19) As density altitude increases
   a) Takeoff distance increases, engine power remains the same, rate of climb increases
   b) Takeoff distance increases, engine power decreases, and rate of climb increases
   c) Takeoff distance increases, engine power decreases, and rate of climb decreases

20) Density altitude is best operationally described as:
   a) Pressure altitude corrected for ISA temperature
   b) The altitude the airplane is performing at
   c) Pressure altitude corrected for non-standard temperature

21) Density altitude, as a textbook definition, is best described as:
   a) The altitude you read with a barometric setting of 29.92” Hg, corrected for non-standard temperature
   b) Pressure altitude corrected for ISA temperature
   c) An altitude that has an air density corresponding to an ISA profile

22) It is a hot day at KERV and the AWOS is reporting a density altitude of 3,420’. Before taking off, you would: (assumes N810SA or N172JD)
   a) Lean the engine for best power in accordance with the POH
   b) Set the mixture to rich until you reach 3,000’ MSL
   c) Plan for a longer takeoff roll and a greater Vr due to the higher density altitude