

## ANSWER KEY TO REVIEW QUESTIONS:

- 1- From the standpoint of weather the most important component of the atmosphere is :  
water vapour.
- 2- The process by which water vapour changes directly to solid ice is called:  
Sublimation
- 3- In which layer of the atmosphere does most weather occur?  
Troposphere
- 4- What happens to the adiabatic lapse rate at the tropopause  
b) it is reduced to zero
- 5- Draw, in order, the different layers and transition layers of the atmosphere.  
FTGU pp.
- 6- The lowest temperatures at altitude are found in : the mesosphere.
- 7- What are the two families of cloud and with what atmospheric conditions are the associated?  
cumuliform → unstable air  
stratiform → stable air
- 8- Cirrus clouds are a thin sweep of delicate white filamentous clouds. They can look like puffs or hairs.
- 9- What do you call a dark grey layer of cloud from which steady rain or snow is falling?  
nimbostratus
- 10- What type of cloud is associated with thunderstorms?  
cumulonimbus
- 11- What is sea level pressure in the ICAO standard atmosphere?  
29.92” hg
- 12- Which types of clouds are grouped in the category, “Clouds of vertical development”?  
cumulus, towering cumulus, cumulonimbus, cumulus fractus
- 13- The force per unit of surface exerted by the atmosphere at a given altitude is called:  
atmospheric pressure
- 14- If the pressure of a given parcel of air increases, the temperature increases and the density increases.

15- Warm air is denser than cold air. False

16- If you fly from a region of high pressure to a region of low pressure, what will be the effect on your altimeter? Read higher than true

17- “Convergence” means  
movement of air towards the centre and then up at the centre of a low pressure system

18- What causes winds to be deflected to the right and blow parallel to isobars in a high pressure system? Coriolis Force

19- State Buys Ballot’s Law  
If the wind is at your back, the low is to your left.

20- According to Buys Ballot, if the wind is from the North, the low pressure zone is to your :  
East

21- What is the term for the wind you encounter at the edge of the ocean during the day?  
a) sea breeze

22- A squall line signals the approach of:  
a cold front

23- What term refers to wind that blows down snow-covered slopes at night?  
Katabatic wind

24- During a climb from the surface to 3000 feet, the wind can be expected to:  
a. Veer and increase ;

25- A wind which is changing direction counter-clockwise and diminishing in intensity is said to be: backing.

26- When an air mass is heated and no additional water vapour is added, relative humidity will : drop.

27- The atmosphere is heated by 4 processes, depending on the altitude and layer. List and give a short definition for each.

- a. Convection: air over a very warm surface becomes buoyant and rises rapidly through the atmosphere
- b. Advection: A flow of air that moves from a cold area over a warm area will be heated in its lowest layers by the warm earth over which it is flowing
- c. Compression: Anti-cyclonic weather systems in which air subsides or air flowing down the side of a mountain causing downward vertical currents. As the air

descends, it reaches regions of increased atmospheric pressure and is compressed, causing adiabatic rising of its temperature. This phenomenon is called subsidence.

- d. Turbulence: Mechanical turbulence which is the result of friction between the air and the ground causes a mixing process which spreads the surface heat into the air aloft.

28- Use the ICAO standard adiabatic lapse rate to calculate the temperature at 10 000 feet, if the temperature on the surface is 30°C.

10.2°C

29- The phenomenon of temperature increasing with altitude is called :  
inversion

30- A strong vertical lapse rate is an indication of unstable air.

31- A volume of air distinguished by uniform properties of humidity and temperature in the horizontal is called a(n) : air mass

32- Air Masses are classified by their moisture and temperature

33- What type of front line occurs when a cold air mass catches a warm air mass? A cold front

34- In what direction does air rotate around the centre of a low pressure area?  
Counter-clockwise

35- The term « Stationary front » refers to:  
A line separating two air masses along which the cold air mass is neither advancing nor retreating.

36- Clouds form when three things are present:  
a cooling agent, moisture, condensation nuclei

37- What type of cloud is generally associated with drizzle?  
stratus

38- Fog can form by one or both of the following two methods:  
adding humidity or cooling

39- What conditions favour the formation of radiation fog?  
Clear nights and light winds

40- For a thunderstorm to form, the following criteria must be met:  
unstable air, high relative humidity, lifting agent

41- Icing is a danger to aircraft because ice accumulation changes the shape of the wing and causes a decrease in lift, increase in weight and increase in drag.

True

42- What is a METAR? coded regular aerodrome weather report

43- In a FD, at FL 370 what does the code 839950 mean? (85-50)= 350 true degrees,  
(99+100)= 199 kts, temperature -50 degrees