**Bubble in the correct answer on the scantron answer form.**

1. Atmospheric pressure and temperature are important factors because they:
   1. affect the rate of diffusion of a gas by ventilation
   2. can cause false readings on gas detection instruments
   3. lower oxygen content in the mine
2. Two gases that are highly soluble in water are:
   1. methane and acetylene
   2. hydrogen sulfide and hydrogen
   3. hydrogen sulfide and sulfur dioxide
3. Oxides of nitrogen can occur in a mine atmosphere:
   1. when certain explosives are used
   2. when diesel-powered equipment is being used
   3. all of the above
4. Air locks are used by mine rescue teams:
   1. To establish a Fresh Air Base.
   2. To sweep air across a working face or barricade
   3. All of the above.
5. A “feeder” is defined as:
   1. Conveyor belt beneath longwall cutter heads.
   2. Small cracks through which methane or other gas escapes from coal.
   3. Sudden emission of methane from coal seam or surrounding rock.
6. A “box check” is defined as:
   1. Stopping with an opening in it to allow a conveyor to pass through, used to prevent intake or return air from flowing across the conveyor.
   2. Brattice cloth, canvas, or plastic curtain used to deflect or direct air into a working place. Constructed in a manner to allow the passage of miners and machinery.
   3. The passage through which fresh air is drawn or forced into a mine or to a section of the mine.
7. Accumulation of hydrogen in the mine atmosphere are dangerous because hydrogen:
   1. Is highly toxic
   2. Is highly soluble in water
   3. Is highly explosive
8. “Return” is defined as:
   1. Toward the shaft or entrance from a given point.
   2. The air course along which the ventilated air of the mine is returned or conducted to the surface.
   3. An enclosed airway built at an intersection of mine passages that permits one air current to pass under another air current without mixing.
9. During a bump test of the MX6 Ibrid, the sensor must reach a gas reading of \_\_\_\_\_% or greater of the applied gas (calibration) concentration within 0 seconds to pass?
   1. 25
   2. 30
   3. 60
10. If the run time is less than \_\_\_\_\_\_\_ minutes, instrument alerts the user of the impending shut down by showing “Low Battery” on the lower central part of the display.
    1. 5
    2. 10
    3. 15
11. When calibrated using methane concentration less than 5% of volume, reading accuracy of the infrared methane sensor may not be guaranteed to be better than +/- \_\_\_\_\_\_%?
    1. 5
    2. 10
    3. 20
12. During calibration, the user has \_\_\_\_\_\_\_ minutes to apply gas before calibration times out?
    1. 3
    2. 5
    3. 7
13. To power on the MX6 Ibrid instrument, press and hold the center of the navigation button for \_\_\_\_\_ seconds?
    1. 2
    2. 3
    3. 4
14. What are two types of battery packs available for the MX6 Ibrid?
    1. NiCad and Lithium ion
    2. Alkaline and NiCad
    3. Alkaline and Lithium ion
15. What appears on the display of the MX6 Ibrid when the combustible sensor is exposed to more than 5% by volume CH4?
    1. FeRR
    2. OR
    3. 5.0% +
16. Oxygen deficient atmospheres may make combustible gas readings to be?
    1. Higher than actual readings
    2. Latched over range (+OR)
    3. Lower than actual readings
17. Sudden changes in atmospheric pressure may cause temporary fluctuations in the \_\_\_\_\_\_ reading?
    1. Carbon monoxide
    2. Oxygen
    3. Methane