

I. Written question. (**must** be answered (in 2-3 sentences) for the paper to be graded). “Seeing your breath” on a cold day is related to condensation. *A. Explain why you can see it on some days but not on other days that are just as cold. B. Give an example of another common occurrence that happens indoors that is also related to the process of condensation.* [1.2]

II. Short answers. Place the answer (a single capital letter from those found in each question) on the line at left. Do not circle answers. Where there is a list (matching-type questions) that any answer may be used more than once, or not at all. [0.7/question]

____ 1. Which of these does NOT affect temperature in an area?

- A. latitude/distance from equator B. proximity/nearness to a large body of water
C. altitude/distance above sea level D. all affect temperature N. none affect temperature

____ 2. Which ONE of these does NOT belong with the others?

- A. fog B. dew C. frost D. rain H. clouds

____ 3. The four items in #2 that do belong together are all forms of

- A. precipitation B. evaporation C. sublimation D. condensation N. none of these

____ 4. When the temperature goes down the relative humidity

- A. also goes down B. stays the same C. goes up D. varies unpredictably N. none of these

Refer to the ‘Air’s capacity...’ chart at right to help answer #s 5-8:

____ 5. For a given sample of air at 70°, containing .008 oz/ft³ of water vapor (listed as “8” on the chart), the dew point is

- A. 70° B. 60° C. 50° D. 40° H. 30° N. none of these

____ 6. The % RH for the same air as in # 5 would be

- A. 70% B. 60% C. 50% D. 40% H. 30% N. none of these

____ 7. If this air’s T dropped to 55°, what would be the new (approximate) %RH be?

- A. 90% B. 80% C. 20% D. 10% N. none of these

____ 8. How much moisture (oz/ft³ × 10³ from the chart) would saturate air at 50°?

- A. 4 B. 6 C. 8 D. 12 H. 16 N. none of these

Air’s capacity to hold water vapor	
T °F	oz/ft ³ × 10 ³
20°	2
30°	4
40°	6
50°	8
60°	12
70°	16
80°	22

Use the choices below in bold to answer #s 9, 10

____ 9. What heat is equal in size and opposite in sign to the heat of evaporation?

____ 10. What is the name given to the process of going directly from the solid state to the vapor state?

- A. melting (fusion) B. freezing (solidification) C. evaporation D. condensation
H. vaporization J. sublimation K. two of these N. none of these

____ 11. An instrument containing a “wet bulb” thermometer is used to measure which of these?

- A. temperature B. humidity C. air pressure D. wind speed H. wind direction N. none of these

____ 12. Which one of these IS normal atmospheric pressure at sea level?

- A. 760 cm Hg B. 14.92 in Hg C. 29.92 lb/in² D. 760 mm Hg H. rare atmosphere

____ 13. Which one of these IS NOT normal atmospheric pressure at sea level?

- A. 760 mm Hg B. 29.92 in Hg C. 14.9 lb/in² D. 76.0 mm Hg H. one atmosphere

I. Written question. (**must** be answered (in 2-3 sentences) for the paper to be graded). “Seeing your breath” on a cold day is related to condensation. *A. Explain why you can see it on some days but not on other days that are just as cold. B. Give an example of another common occurrence that happens indoors that is also related to the process of condensation.* [1.2]

II. Short answers. Place the answer (a single capital letter from those found in each question) on the line at left. Do not circle answers. Where there is a list (matching-type questions) that any answer may be used more than once, or not at all. [0.7/question]

___ 1. Which of these does NOT affect temperature in an area?

K. latitude/distance from equator L. proximity/nearness to a large body of water
M. altitude/distance above sea level S. all affect temperature X. none affect temperature

___ 2. Which ONE of these does NOT belong with the others?

K. fog L. dew M. frost X. rain X. clouds

___ 3. The four items in #2 that do belong together are all forms of

K. precipitation L. evaporation M. sublimation S. condensation X. none of these

___ 4. When the temperature goes down the relative humidity

K. also goes down L. stays the same M. goes up S. varies unpredictably X. none of these

Refer to the ‘Air’s capacity...’ chart at right to help answer #s 5-8:

___ 5. For a given sample of air at 70°, containing .008 oz/ft³ of water vapor (listed as “8” on the chart), the dew point is

K. 70° L. 60° M. 50° S. 40° T. 30° X. none of these

___ 6. The % RH for the same air as in # 5 would be

K. 70% L. 60% M. 50% S. 40% T. 30% N. none of these

___ 7. If this air’s T dropped to 55°, what would be the new (approximate) %RH be?

K. 90% L. 80% M. 20% S. 10% X. none of these

___ 8. How much moisture (oz/ft³ x 10³ from the chart) would saturate air at 50°?

K. 4 L. 6 M. 8 S. 12 T. 16 X. none of these

Air’s capacity to hold water vapor

T °F	oz/ft ³ x 10 ³
20°	2
30°	4
40°	6
50°	8
60°	12
70°	16
80°	22

Use the choices below in bold to answer #s 9, 10

___ 9. What heat is equal in size and opposite in sign to the heat of evaporation?

___ 10. What is the name given to the process of going directly from the solid state to the vapor state?

L. melting (fusion) M. freezing (solidification) P. evaporation S. condensation

T. sublimation V. vaporization W. two of these X. none of these

___ 11. An instrument containing a “wet bulb” thermometer is used to measure which of these?

K. temperature L. humidity M. air pressure S. wind speed T. wind direction X. none of these

___ 12. Which one of these IS normal atmospheric pressure at sea level?

K. 760 cm Hg L. 14.92 in Hg M. 29.92 lb/in² S. 760 mm Hg T. rare atmosphere

___ 13. Which one of these IS NOT normal atmospheric pressure at sea level?

K. 760 mm Hg L. 29.92 in Hg M. 14.9 lb/in² S. 76.0 mm Hg T. one atmosphere