Mini-Test 1

Passage I

A group of researchers attempted to develop a new technique for vertical farming by constructing three artificially heated and humidified chambers. The researchers found the weekly average air temperature in Celsius (°C) and the weekly average humidity in percent water vapor in each of the three chambers. The results for the first six weeks of their measurements are given in Table 1 and Table 2.

Table 1

Week	Weekly average air temperature (°C)		
	Chamber 1	Chamber 2	Chamber 3
1	20.01	19.12	18.87
2	20.13	19.13	18.85
3	20.36	19.13	18.88
4	20.68	19.15	18.92
5	20.95	19.22	18.98
6	21.02	19.20	19.03

Table 2

Week	Weekly average humidity (%)		
	Chamber 1	Chamber 2	Chamber 3
1	84%	83%	78%
2	84%	82%	77%
3	85%	81%	76%
4	86%	82%	76%
5	88%	80%	78%
6	87%	79%	79%

1. The highest weekly average humidity recorded during the first six weeks of the study was:

A. 86%
B. 87%
C. 88%
D. 89%

2. What was the average air temperature in the three chambers in Week 4?

F. 18.15
G. 18.59
H. 19.58
J. 20.69

3. Which of the following statements best describes the relative conditions of the three chambers in the first six weeks of the study?

A. Chamber 1 had high average air temperature and high average humidity, Chamber 2 had low average air temperature and low average humidity, and Chamber 3 had medium average air temperature and medium average humidity.
B. Chamber 1 had low average air temperature and medium average humidity, Chamber 2 had medium average air temperature and low average humidity, and Chamber 3 had high average air temperature and high average humidity.
C. Chamber 1 had high average air temperature and low average humidity, Chamber 2 had medium average air temperature and high average humidity, and Chamber 3 had low average air temperature and medium average humidity.
D. Chamber 1 had high average air temperature and high average humidity, Chamber 2 had medium average air temperature and medium average humidity, and Chamber 3 had low average air temperature and low average humidity.

4. Which of the following statements best describes the change in weekly average air temperature in Chamber 2?

F. The weekly average air temperature increased or stayed the same consistently from Week 1 to Week 6.
G. The weekly average air temperature decreased from Week 1 to Week 3 and increased or stayed the same from Week 3 to Week 6.
H. The weekly average air temperature increased or stayed the same from Week 1 to Week 5, and the weekly average air temperature decreased from Week 5 to Week 6.
J. The weekly average air temperature decreased or stayed the same from Week 1 to Week 4 and increased from Week 4 to Week 6.

5. Suppose the rate of growth of crops in each of the vertical farming chambers is determined by either weekly average air temperature, weekly average humidity, or both. If the growth rate in Chamber 2 greatly exceeds the growth rate of Chambers 1 and 3, which of the following conclusions would be justified? Relative to the temperatures and humidity levels in the experiment:

A. high weekly average air temperature or high weekly average humidity is ideal for plant life growth rate.
B. medium weekly average air temperature or medium weekly average humidity is ideal for plant life growth rate.
C. low weekly average air temperature or low weekly average humidity is ideal for plant life growth rate.
D. all of the above conclusions can be justified.

END OF MINI-TEST ONE
STOP! DO NOT GO ON TO THE NEXT PAGE
UNTIL TOLD TO DO SO.