



SCIENCE OLYMPIAD
— AT THE —
UNIVERSITY OF FLORIDA

Northern Regional: January 19th, 2019

Meteorology B Answer Key

Name(s): _____

Team Name: _____

School Name: _____

Team Number: _____

Rank: _____

Score: _____

UF SCIENCE OLYMPIAD
METEROLOGY DIVISION B
JANUARY 19, 2019
Answer Sheet

Names:

School:

1. 13, Stratosphere (2 pt.)
2. Thermosphere (1 pt.)
The individual gas molecules are spaced very far apart and each has a very high kinetic energy. Temperature is a manifestation of kinetic energy. Molecules farther away from the surface have larger kinetic energy. (2 pt.)
3. 4, Troposphere (2 pt.)
4. Troposphere, 4 and Stratosphere, 3 (4 pt.)
5. 88,000 m (\pm 2,500 m) (2 pt.)
6. 400 km (\pm 25 km) (2 pt.)
7. 1,013 mb (1 pt.)
8. (a) lower (b) higher (2 pt.)
9. A (1 pt.)
10. B (1 pt.)
11. D (1 pt.)
12. C (1 pt.)
13. F (1 pt.)
14. F (1 pt.)
15. T (1 pt.)
16. F (1 pt.)
17. F (1 pt.)
18. T (1 pt.)
19. T (1 pt.)
20. F (1 pt.)
21. d (4 pt.)
22. Hurricane Michael (2 pt.)
23. E (2 pt.)
24. 62 F (4 pt.)

25. 73/61 (4 pt.) you

26. Pressure in in Hg: divide by 33.8; 919 mb = 27.14 in Hg (3 pt.)
METAR: A2714 (3 pt., will accept follow through error)

27. 72.4 F (4 pt.)

28. Cold Front (2 pt.)

29. b (2 pt.)

30. 50 knots (2 pt.)

31. Lake Charles (3 pt.)

32. Temp = 75 F, SLP = 919 mb, Wind = 130 knots NNE (10 pt.)

33. El Niño: rise in surface pressure over Indian Ocean, Indonesia, and Australia
--fall in air pressure over Tahiti and east/central Pacific Ocean
-- warm water spreads over west Pacific and Indian Ocean to east Pacific, causing draught in western pacific and rain in eastern Pacific
-- warm air rises near Peru, causing rain in north deserts
-- trade winds in South Pacific(8 pt. total)

Gainesville doesn't need to worry because it's not in the Pacific (2 pt.)

34. 78 % N, 21 % O, .93 % Ar, .04% CO₂ (5 pt.)
Potential for other answers

35. By seeding clouds in Venus's atmosphere, we could promote an albedo effect (reflection of solar energy away from Venus) that could potentially cool the planet. This would decrease the absorption of radiation from the sun, seen in Earth's radiative budget (5 pt.)