The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

PHYSICAL SETTING
CHEMISTRY

Wednesday, January 23, 2019 — 10:00 a.m. to 11:30 a.m., only

Answer Key

1. (1)	9. (1)	17. (2)	25. (4)
2. (1)	10. (1)	18. (3)	26. (3)
3. (3)	11. (2)	19. (1)	27. (4)
4. (3)	12. (3)	20. (2)	28. (1)
5. (4)	13. (3)	21. (4)	29. (2)
6. (4)	14. (1)	22. (2)	30. (2)
7. (1)	15. (3)	23. (4)	31. (1)
8. (3)	16. (4)	24. (4)	

32 As and Sb have the same number of valence electrons.

33 The sodium ion is smaller than the sodium atom because to form an ion Na atoms lose one electron.

34 Double nonpolar covalent bond.

35 LED for one oxygen atom

36 The covalent bond is being broken and bond breaking is always endothermic (always requires energy).

37 carbonate anion (or CO_3^{2-})

38 The intermolecular forces in NO_2 are much stronger than the intermolecular forces in N_2.

(This is because the passage says NO_2 BP = 294 K and N_2 BP = 77 K.)

39 dinitrogen tetraoxide

40 sodium hydrogen carbonate

41 62 g

42 Show a numerical setup.

$q = m\ C\ \Delta T = 30.1\ g\ (0.385\ J/g{\cdot}K)\ (33 - 21)K$

43 10 neutrons

44 The student diagram indicates a covalent compound. Adding charges would show an ionic bond.