



1. 1
2. 1
3. 2
4. 2
5. 3
6. 4
7. 2
8. 2
9. 2
10. 2
11. 2
12. 3
13. 4
14. 4
15. 3
16. 4
17. 3
18. 1
19. 3
20. 3
21. 1
22. 4
23. 2
24. 1
25. 1
26. 2
27. 1
28. 3
29. 2
30. – Heat mixture 1 until all the water evaporates. – Allow the water to evaporate.
31. – 2.02 cm^3
32. – Mixture 1:
homogeneous –
Mixture 2:
heterogeneous
33. *Examples:* Physical property: – liquid at room temperature – colorless – odor – boiling point above room temperature
Chemical property: – CS_2 can be decomposed into C and S. – flammable
34. Sample *A* has only one type of molecule *or* All particles are the same *or* not a mixture
35. Particles in sample *A* show molecules of a compound whereas particles in sample *B* show two compounds as a mixture *or* *A* – compound, *B* – mixture *or* *A* – 1 compound, *B* – 2 compounds

Atomic Theory Exam
Answer Key

Name _____

2

1. b
2. d
3. a
4. a
5. c
6. b
7. a
8. c
9. c
10. b
11. b
12. c
13. c
14. a
15. a
16. c
17. c
18. a
19. a
20. c
21. b

22. a) Atom is mostly empty space
b.) Dense, positive core
23. 20.2 amu
- 24.

Substance	Atom or Ion?	# protons	# neutrons	# electrons	Atomic #	Mass number
Mg ⁺²	Ion	12	12	10	12	24
Rb	Atom	37	48	37	37	85
Cl ⁻	Ion	17	18	18	17	35

25. 2-8-6
26. 2-8-8
27. Same number of protons, different number of electrons
- 28.
- 29.
30. 2
31. 10
32. Answers will vary. 2-7-3, 2-8-1-1, 1-8-4, etc. First number in configuration can't be greater than 2, second number in configuration can't be greater than 8, last number in configuration can't be greater than 8, total number of electrons must equal 12.

3

- 1. C
- 2. B
- 3. C
- 4. A
- 5. B
- 6. B
- 7. B
- 8. A
- 9. C
- 10. A
- 11. C
- 12. D
- 13. C
- 14. B
- 15. D
- 16. B
- 17. C
- 18. C
- 19. C
- ~~20. A~~
- ~~21. B~~
- ~~22. B~~
- ~~23. B~~
- 24. C
- 25. A
- 26. C

- 27. C
- 28. 8,350J
- 29. 45°C
- 30. a.) BC b.) 42-43°C c.) A d.) Freezing
- 31. a.) $\overline{QR} = (d)$, $\overline{ST} = (g)$, $\overline{RS} = \text{phase ch.}$ b.) moving **FASTER** c.) moving **FARTHER**
- 32. _____

- ~~33. C~~
- ~~34. C~~
- ~~35. B~~
- ~~36. B~~
- ~~37. A~~
- ~~38. B~~
- ~~39. C~~
- ~~40. C~~
- ~~41. B~~
- ~~42. A~~
- ~~43. D~~
- ~~44. A~~
- ~~45. D~~
- ~~46. B~~
- ~~47. D~~
- ~~48. C~~
- ~~49. _____~~
- 50. 2.8 atm

51.

$$\frac{(100.8)(52.5)}{(295)} = \frac{(45.6)(V_2)}{(252)}$$

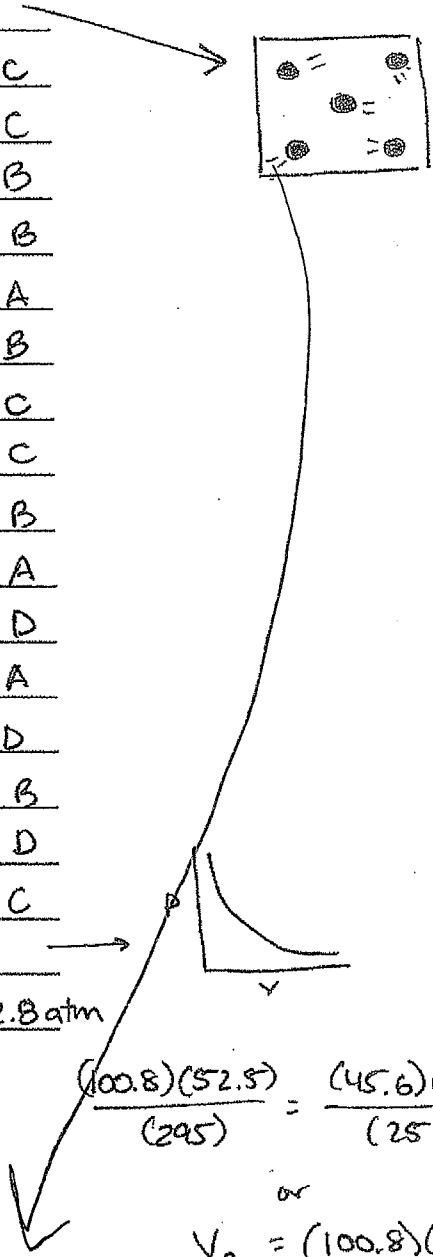
or

$$V_2 = \frac{(100.8)(52.5)(252)}{(295)(45.6)}$$

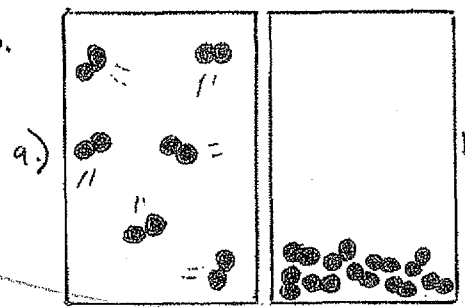
52. $\frac{(101.3)(20.0)}{(297)} = \frac{(94.6)(V_2)}{(283)}$

or

$$V_2 = \frac{(101.3)(20.0)(283)}{(297)(94.6)}$$



53.



c.) Gas particles farther apart
 d.) 2-D doesn't show movement in all directions/planes

1. C
2. A
3. B
4. B
5. D
6. C
7. B
8. C
9. A
10. B
11. D
12. C
13. C
14. C
15. D
16. B
17. D
18. C
19. B
20. C
21. D
22. B
23. b
24. A
25. D

1. Name two properties of nonmetals that make them unsuitable for use in electrical wiring. Explain why each of these properties makes them unsuitable.

- Not ductile => can't be drawn into wire
- Not malleable => can't bend
- Nonconductors => can't transmit electricity

2. Use the list of elements below to answer the questions that follow.

Na, Ni, N, Mg, Rb, B

a) Choose the two elements which would have the most similar chemical properties. [Explain why]

Na, Rb b/c same group/family

b) Which of the elements is the most reactive metal?

Rb

c) Which of the elements is the most reactive nonmetal?

N

d) Which element has the highest electronegativity? Explain why.

N b/c it's closest to a full octet

2) A neutral atom in the ground state has the electron configuration 2-8-18-7.

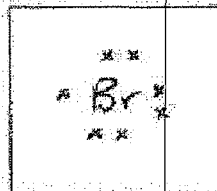
a) State the group and period this element is found on the Periodic Table:

Group 17 Period 4

b) Identify this element: Bromine (Br)

c) Classify this element as a metal (nonmetal) or metalloid (circle one).

d) In the box below, draw a Lewis electron-dot structure for this element.



e) List two other elements likely to have properties similar to this element.

F, Cl, I

4.)