

Integrated Science – Final Exam Study Guide

1. Review all reference tables, handouts, & charts. Begin to study now.
2. Review 5 characteristics necessary to be a mineral: _____, _____, _____, _____, _____.
3. To test for mineral hardness: _____; To test for mineral streak: _____.
What is streak: _____.
4. How do you test for a mineral's hardness: _____.
_____. Know Mohs' Hardness Scale. (1-10)
5. What is a mineral ore? _____
6. Difference between a renewable & non-renewable resource: _____

7. What is a natural resource: _____
8. What is the silicate group of minerals: _____
9. Know the metal & non-metal mineral resources: _____
_____;
10. Which conducts electricity? _____
11. What is a fossil: _____
12. Be able to use the density formula ($d = m/v$)
13. Review matter (_____)
& mass (the amount of matter taking up space)
14. Definition of an atom: _____
15. Know the atomic # (_____) & the atomic mass (_____)
16. An isotope is _____;
17. An ion is _____
18. Know the difference between chemical & physical changes of matter. Phase change is _____.
19. Know the atomic structure: protons, neutrons, electrons, etc. What is a valence e-: _____
20. Know the 22 element names & symbols: _____, _____,
_____, _____, _____, _____, _____,
_____, _____, _____, _____, _____,
_____, _____, _____, _____, _____.
21. Know the groups, periods, & metalloids of the periodic table.
22. Least reactive: _____; Most reactive: _____
23. Know the different shells around the nucleus of the atom. 2 electrons in the ___ shell, 8 electrons in the ___ shell, _____ electrons in the ___ shell.
24. How can you tell if the outer shell (_____) is full?
25. Know difference between the hydrogen & helium atoms.
26. Break down a chemical formula into atoms. $\text{CaCO}_3 =$ _____
27. Review the periodic table (groups, periods, metals, non-metals, metalloids)
28. Review notes about elements, metals, non-metals, compound, elements, molecule, chemical reactions, mole, $\frac{1}{2}$ life, valence e-, carbon-14 dating.

29. Know the 22 element names & symbols: _____, _____, _____, _____,
 _____, _____, _____, _____, _____, _____,
 _____, _____, _____, _____, _____, _____,
 _____, _____, _____, _____, _____, _____.
30. Know the difference between cations & anions. Cations are: _____
 _____; anions are: _____.
31. A combination of elements that has properties different than properties of each of
 the elements in it describes: _____.
32. A Mixture has: _____
 _____.
33. Recognize a compound from an element from a mixture.
34. Know synthesis reaction from decomposition reaction. Synthesis: _____

 Decomposition: _____.
35. Know the relationship between a valence e- & chemical properties of an element.
 _____.
36. A molecule: _____.
37. Know the quantity of a mole. The mass # of any element is the _____ in g.
 Mass # of oxygen is 16, the molar weight of oxygen _____.
38. Be able to identify how many moles are in any g of a compound. Ex: How many
 moles are in 2.47g of NaCl: $2.47\text{g} / 58\text{g} = 0.04$ moles. Review your worksheets.
39. A half-life is defined as: _____.
40. Review the half-life worksheet. How many years does it take for half of
 carbon-14 to decay? _____; How much of carbon-14 has
 decayed after 4 half-lives? _____.
41. Review carbon-14 dating. It is the most accurate form of absolute age dating
 during the years of 1,000 to 50,000 yrs.
42. Review all reference handouts & notes on: force, laws of motion, speed &
 acceleration, velocity, momentum, heat calculations, work, & power.
43. What is physics? _____.
44. 1st law of motion: _____

 2nd law of motion: _____
 3rd law of motion: _____.
45. What is the resultant force? _____.
46. $F = m \times a$: force of 25N acts on a mass of 2kg, what is the acceleration: _____.
47. Inertia: _____.
48. Friction: _____.

$$\text{speed} = \text{dist} / \text{time} \quad f = m \times a \quad p = \text{mass} \times \text{velocity} \quad \text{power} = W/t$$

$$Q = \text{mass} \times \text{change in temp} \times \text{specific heat capacity} \quad \text{Work} = f \times d$$

- 49. What force is necessary to maintain a constant state of motion: _____
- 50. Why? _____
- 51. Velocity describes: _____
- 52. What is the velocity of a truck traveling a total of 50 *Km* north in 2 hrs? _____
- 53. What is the momentum of a 6,000kg bus moving at 10 m/s? _____
- 54. Acceleration: _____
- 55. A girl is pushing a rock 5m away with a force of 12N. What is the work done?

- 56. 3 types of rocks in the Rock Cycle: Igneous: (_____),
Sedimentary (_____), & Metamorphic (_____)
- 57. Large crystals in Igneous rocks: _____
- 58. Small crystals in Igneous rocks: _____
- 59. Parent rock: _____
- 60. Rock cycle processes: Igneous: _____ ; Sedimentary: _____
_____ ; Metamorphic: _____
- 61. Alternative energy: _____
- 62. Know both Potential & Kinetic energy.
- 63. _____
- ~~64.~~ *what is mechanical Advantage.*
- 65. What is energy? _____

STUDY ! Good luck!