

Chemistry

Day	Date	Quiz/Video	Is it done?	Assignment	Is it done?
19 Tuesday	4/14/2020	12.11B		29-30, Quiz	
20 Wednesday	4/15/2020	practice test			
21 Thursday	4/16/2020			take test	
22 Friday	4/17/2020	19.1			
23 Monday	4/20/2020	19.2			
24 Tuesday	4/21/2020	19.3		1a-i, 2a, 3-4, 9-10	
25 Wednesday	4/22/2020	19.4		1j-o, 2b-c, 5-6, 11-14	
26 Thursday	4/23/2020	19.5		1p-r, 7, 15-20	
27 Friday	4/24/2020	19.6			
28 Monday	4/27/2020	19.7			
29 Tuesday	4/28/2020	19.8			
30 Wednesday	4/29/2020			1s-v, 2d, 8, 21-27, Quiz	
31 Thursday	4/30/2020	19.8b			
32 Friday	5/1/2020	practice test			
Monday	5/4/2020			test	
How many total did you do:					

Zoom session happen Mon/Wed/Fri at 1:00 for those needing any help

1. What is chapter 12 about?
2. In this chapter, are the particles of matter still in motion to some degree?
- 3-5. Name the three ways that the molecules of liquids are different from those of gases.
- 6-11. Describe the 6 general characteristics of liquids.
- 12-23. Name and define two changes of state. Describe two conditions under which each take place. Classify and define what type of change each is.
24. Real gases act like ideal gases in what circumstance?
25. What is dynamic equilibrium?
26. What is vapor pressure?
27. What is the boiling point?
28. What will make the boiling point lower?
29. Will that make food take longer or shorter to cook?
- 30-1. Describe heat of vaporization and heat of condensation.
- 32-3. What units are used to measure those heats?
34. What is distillation?
- 35-6. The colorless droplets of water are called the _____; the impurities that remain are called the _____.
37. The petroleum industry uses _____ to refine gasoline.
38. What is surface tension?

39. What causes it?
40. What can be done to decrease surface tension?
41. What is viscosity?
42. What can be done to increase viscosity?
- 43-5. Name the three ways that the molecules of solids are different.
- 46-51. Describe the 6 general characteristics of solids.
- 52-6. Name and define two kinds of solids. What is special about one kind of solid?
57. _____ is the temperature at which the particles of a liquid begin to form crystals of a solid.
58. Is this endothermic or exothermic?
59. _____ is the temperature at which the kinetic energy of some of the particles in a solid matches the attractive forces in the solid and the solid begins to liquefy.
60. Is this endothermic or exothermic?
61. What will happen generally if pressure is raised?
62. What is the exception?
63. How much of an effect will pressure have?
64. What will 1 atm of pressure do to ice?
65. _____ is the quantity of heat required to convert 1 g of a solid to liquid at the melting point.
66. _____ is the quantity of heat released by 1 g of a liquid as it becomes a solid.
- 67-8. What is sublimation? Is it endothermic or exothermic?
- 69-70. What is deposition? Is it endothermic or exothermic?
71. As heat is added to a solid, the temperature rises according to its _____.
72. As a solid melts, does its temperature change?
73. What equation tells how much heat it takes to warm or cool a substance?

Problems (3 points each)

1. How much heat in kilocalories is given off when 48 g of steam condenses?
2. How much heat in kilojoules is needed to vaporize 476 g of water?
3. How much heat energy in kilojoules is required to vaporize .375 mol of water?
4. What is the melting point of ice when a pressure of 75 atm is exerted on it?
5. How much heat in kilocalories is required to convert 34 g of ice at 0 C to steam at 100 C?
6. How much heat in kilojoules is required to convert 75 g of ice at 0 C to steam at 100 C?
7. How many calories are needed to convert 26 g of ice at -15 C to steam at 120 C?
8. How many calories are given off when .754 kg of water freezes?
9. Calculate the mass of water in grams that can be heated from 0 C to 10 C by the heat given off on cooling 3 kg of water from 100 C to 20 C.

Name _____

1. Who ran the first controlled nuclear reaction in 1942?
2. Name another scientist that they mentioned.
3. A _____ is any reaction in which the nucleus of the atom changes composition.
4. _____ is the spontaneous emissions accompanying changes in the nuclei of atoms.
5. Too many or too few _____ can cause an isotope to be radioactive.
6. Name one of the three types of rays that Rutherford found.
7. Collectively, these three types of radiation are called _____.
8. If you are exposed to enough of any form of radioactivity, you can develop _____.

1. _____ is the change of a radioactive element into another element.
2. This change is the result of _____, which causes radioactive elements to give off emissions in the first place.
3. _____ are a form of radiation that is identical to the nucleus of a helium atom.
4. _____ is identical to an electron.
5. _____ is a series of changes undergone by radioactive substances until they become stable.
6. _____ have no charge or mass and thus have no effect on the atomic number or mass number of an element despite their high energy.
7. Who ran the first controlled nuclear reaction in 1942?
- 8-15. Name and describe 4 other scientists.

16. What is a nuclear reaction?

17. What is radioactivity?

18. Too many or too few _____ can cause an isotope to be radioactive.

19-34. Name three types of rays that Rutherford found. Give the Greek letter, the charge, the penetrating power, the danger level, and one other fact for one of them.

35. Collectively, these three types of radiation are called _____.

36. If you are exposed to enough of any form of radioactivity, you can develop _____.

1. Who was the first scientist to create a transmutation?
2. _____ is a device used to accelerate charged particles.
3. _____ is the spontaneous radioactive emission from a substance not found in nature.
4. A _____ is identical to a positive electron.
5. _____ is the process in which a nucleus "grabs" an electron outside the nucleus and converts a proton to a neutron.
6. _____ are manmade elements that do not exist in nature. They fill in gaps in the periodic table.
7. _____ are manmade elements whose atomic numbers exceed 92. They have extended the periodic table.
8. What is a nuclear reaction?
9. What is radioactivity?
10. Too many or too few _____ can cause an isotope to be radioactive.
- 11-28. Name three types of rays that Rutherford found. Give the Greek letter, the charge, the penetrating power, the danger level, and one other fact for one of them. For two of them, give the shorthand way to write them in equations. For the one without a shorthand way to write it, tell why it does not need one.

29. Collectively, these three types of radiation are called _____.
30. If you are exposed to enough of any form of radioactivity, you can develop _____.
31. What is a transmutation?
32. Transmutations are the result of _____, which causes radioactive elements to give off emissions in the first place.
33. What is a decay series?
34. What is a stable substance?

1. _____ is the amount of time required for half of any mass of a radioactive isotope to decay.
2. _____ are used to detect and measure radiation in various environments.
3. The older unit used to measure radioactivity is the _____.
4. The newer SI unit used to measure radioactivity is the _____.
5. What is a nuclear reaction?
6. What is radioactivity?
7. Too many or too few _____ can cause an isotope to be radioactive.
- 8-19. Name three types of rays that Rutherford found. Give the Greek letter and the charge. For two of them, give the shorthand way to write them in equations. For the one without a shorthand way to write it, tell why it does not need one.
20. Collectively, these three types of radiation are called _____.
21. If you are exposed to enough of any form of radioactivity, you can develop _____.
22. What is a transmutation?
23. Transmutations are the result of _____, which causes radioactive elements to give off emissions in the first place.
24. What is a decay series?
25. What is a stable substance?
26. Who was the first scientist to create a transmutation?
27. What does a cyclotron do?
28. What is artificial radioactivity?
29. What is a positron?
30. What is electron capture?
31. _____ are manmade elements whose atomic numbers exceed 92. They have extended the periodic table.
32. _____ are manmade elements that do not exist in nature. They fill in gaps in the periodic table.
- 33-7. Give a shorthand way to represent a proton, a neutron, a deuteron, a triton, and a positron.

1-4. Name the four uses of radioactive isotopes that they discussed in 19.5.

5. What is a transmutation?

6. Transmutations are the result of _____, which causes radioactive elements to give off emissions in the first place.

7. What is a decay series?

8. What is a stable substance?

9. Who was the first scientist to create a transmutation?

10. What does a cyclotron do?

11. What is artificial radioactivity?

12. What is a positron?

13. What is electron capture?

14. _____ are manmade elements whose atomic numbers exceed 92. They have extended the periodic table.

15. _____ are manmade elements that do not exist in nature. They fill in gaps in the periodic table.

16-22. Give a shorthand way to represent an alpha particle, a beta particle, a proton, a neutron, a deuteron, a triton, and a positron.

23. What is the half-life of an element?

24. What can speed or slow that process?

25. How long can a half-life be?

26. Do radioactive substances "disappear?" Why/why not?

27. _____ are used to detect and measure radiation in various environments.

28-30. The older unit used to measure radioactivity is the _____. Define it. What is its abbreviation?

31-3. The newer SI unit used to measure radioactivity is the _____. Define it. What is its abbreviation?

1. _____ is the splitting of an atomic nucleus to give two smaller nuclei, neutrons, and energy.
2. A _____ is a self-sustaining reaction in which a product is one of the reactants.
3. A _____ is the minimum amount of a radioactive substance necessary to sustain a chain reaction.
4. What weapon did they discuss in 19.6?
- 5-6. Name two of the scientists they discussed.
7. Who was the first scientist to create a transmutation?
8. What does a cyclotron do?
9. What is artificial radioactivity?
10. What is a positron?
11. What is electron capture?
12. _____ are manmade elements whose atomic numbers exceed 92. They have extended the periodic table.
13. _____ are manmade elements that do not exist in nature. They fill in gaps in the periodic table.
- 14-20. Give a shorthand way to represent an alpha particle, a beta particle, a proton, a neutron, a deuteron, a triton, and a positron.
21. What is the half-life of an element?
22. What can speed or slow that process?
23. How long can a half-life be?
24. Do radioactive substances "disappear?" Why/why not?
25. _____ are used to detect and measure radiation in various environments.
- 26-8. The older unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 29-31. The newer SI unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 32-9. Name and explain the four uses of radioactive isotopes that they discussed in 19.5.

1. _____ produces energy by combining two or more nuclei to form a heavier nucleus.
- 2-3. Name two examples of this type of reaction.
4. What is the half-life of an element?
5. What can speed or slow that process?
6. How long can a half-life be?
7. Do radioactive substances "disappear?" Why/why not?
8. _____ are used to detect and measure radiation in various environments.
- 9-11. The older unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 12-14. The newer SI unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 15-22. Name and explain the four uses of radioactive isotopes that they discussed in 19.5.
23. What is nuclear fission?
24. What is a chain reaction?
25. What is a critical mass?
26. Why was Germany not the first to develop an atomic bomb?
27. What scientists in the US approached the President about the atomic bomb?
28. What US President first authorized the research on the atomic bomb?
29. What was the code name for the research?
30. Where and when was the first bomb tested?
31. What US president made the final decision to drop the first atomic bomb?
32. Where was it dropped?
33. When was the second one dropped?
34. Where was it dropped?

- 1-3. What are the three parts of a nuclear power plant?
4. Name a problem with nuclear fission.
5. Name a reason that nuclear fusion power plants may be superior to nuclear fission ones.
6. What was the first box about?
- 7-8. If you read the whole box about technetium, tell me two things about it.
9. What is nuclear fission?
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18. Where was it dropped?
19. When was the second one dropped?
20. Where was it dropped?
21. What is nuclear fusion?
- 22-3. On the sun, _____ is lost and exchanged for _____.
24. To maintain a fusion reaction, _____ must be constantly supplied.
25. In a hydrogen/thermonuclear bomb, _____ supplies it.

Name _____

Chemistry Quiz, 19.8b

1. Who ran the first controlled nuclear reaction in 1942?

2-9. Name and describe 4 other scientists.

10. What is a nuclear reaction?

11. What is radioactivity?

12. Too many or too few _____ can cause an isotope to be radioactive.

13-30. Name three types of rays that Rutherford found. Give the Greek letter, the charge, the penetrating power, the danger level, and one other fact for one of them. For two of them, give the shorthand way to write them in equations. For the one without a shorthand way to write it, tell why it does not need one.

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32. If you are exposed to enough of any form of radioactivity, you can develop _____.

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34. Transmutations are the result of _____, which causes radioactive elements to give off emissions in the first place.

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49. What is the half-life of an element?
50. What can speed or slow that process?
51. How long can a half-life be?
52. Do radioactive substances “disappear?” Why/why not?
53. _____ are used to detect and measure radiation in various environments.
- 54-6. The older unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 57-9. The newer SI unit used to measure radioactivity is the _____. Define it. What is its abbreviation?
- 60-7. Name and explain the four uses of radioactive isotopes that they discussed in 19.5.
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77. Where was it dropped?
78. When was the second one dropped?
79. Where was it dropped?
80. What is nuclear fusion?
- 81-2. On the sun, _____ is lost and exchanged for _____.
83. To maintain a fusion reaction, _____ must be constantly supplied.
84. In a hydrogen/thermonuclear bomb, _____ supplies it.
- 85-7. What are the three parts of a nuclear power plant?
88. What controls the heat in a nuclear fission power reactor?
89. Why can't an explosion occur in a nuclear fission reactor?
- 90-3. Name four problems with nuclear fission power plants.
- 94-7. Where and when did two meltdowns occur?
98. Is radon a naturally occurring or a manmade problem?
99. How does radon gas harm the body?
100. Wasn't that fun?

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Problems (2 points each)

Complete and balance a nuclear chemical equation.

- 1. Uranium-232 decays by alpha emission.**
- 2. Cobalt-60 decays by beta emission.**
- 3. Oxygen-16 plus a neutron results in the formation of another element and the release of an alpha particle.**
- 4. Zinc-65 undergoes electron capture to give a new element.**
- 5. Praseodymium-140 (Pr) decays by positron emission.**
- 6. Beryllium-9 plus a proton results in the formation of another element and the release of an alpha particle.**
- 7. Einsteinium-253 (Es) plus an alpha particle results in the formation of another element and the release of a neutron.**
- 8. Cadmium-113 absorbs a neutron to form an isotope of cadmium and gamma rays.**
- 9. Lithium-7 plus a proton results in the formation of another element and the release of a neutron.**
- 10. Palladium-108 is bombarded with an alpha particle, and a proton is emitted.**
- 11. Tritium is prepared by bombarding lithium-6 with a neutron.**
- 12. Nickel-58 is bombarded with a proton, and an alpha particle is emitted.**
- 13. An element has a half-life of 12 hours. If there are 24 g now, how much will there be in 36 hours?**
- 14. An element has a half-life of 12 hours. If there are 24 g now, how much will there be in 3 days?**
- 15. An element has a half-life of 12 hours. There are 24 g now. In how many hours will there be 3 g?**
- ec. There are 72 g of an element now. In 48 hours, there will be 4.5 g. What is the half-life?**