S-7

This practice test is a general guideline to help you study. It is NOT a definitive list. There are potentially things on here that will not show up on the test, and there are potentially things not on this list that will show up on the test. Material that appeared in Warm Ups, Notes, Homework, Classwork, Labs, Study Materials, etc are all have the potential to appear on the test. **Please time yourself! This practice test should take a maximum of** <u>65 minutes</u> to ensure you are going fast enough to finish the actual Test in class!



- 7. Compared to a Barium ion, which of the following ions would have the same number of total electrons?
 - A) Pb⁴⁺
 - B) Sn²⁺
 - C) I⁻
 - D) Pb²⁺
 - E) Br-

8. Which graph below represents the decay of a 145g sample with a half life of 36 minutes?



9.	A change involves a change in one		
	or more physical properties, but no change in the fundamental components that make up the		
	substance.		
	A) potential		
	B) mixed		
	C) chemical		
	D) kinetic		
	E) physical		
_			
10.	An atom with 15 protons and 16 neutrons is an		
	atom of		
	A) S		
	B) Rh		
	C) Pd		
	D) Ga		
	E) P		
11	Which of these is a chemical property?		
	A) Helium is very nonreactive.		
	B) Water has a high specific heat.		
	C) Sodium is a soft, shiny metal.		
	D) Oxygen is a gas.		
	E) Ice melts at 0°C.		
12.	How many protons, electrons, and neutrons,		
	respectively, does ¹²⁷ I have?		
	A) 53, 74, 53		
	B) 53, 53, 127		
	C) 53, 53, 74		
	D) 53, 127, 74		
	E) 74, 53, 127		
12	Which of the following statements are two?		
15.	Models are always wrong unless they are		
	reveal by a theory		
	I Elements such as load, are made of tiny		
	n. Elements, such as lead, are made of they particles that mostly consist of open space		
	III The air you breathe is an example of a		
	heterogeneous mixture		
	IV Because NH2 always contains the same		
	relative numbers of atoms it will always contain		
	A 6 g of nitrogen for every 1.0 g of hydrogen		
	(Δ) I III		
	B) II only		
	C) II IV		
	D) I II IV		
	E) All of the above statements are true.		
14.	A walker travels a distance of 1.4 miles. How		
	many inches did the walker travel?		
	(1 mi = 5280. ft)		
	(1 ft = 12 in)		
	A) 8.9×10^4 in		
	B) 17. in		
	C) 7.4×10^3 in		
	D) 6.2×10^2 in		
	E) 8.6 in		

15	15 The chemical formula $\Delta l_2 \Omega_2$ indicates				
15.	A)	six atoms of each element			
	B)	five atoms of each element			
	C)	three atoms of aluminum and two atoms of			
		oxygen			
	D)	two atoms of aluminum and three atoms of			
		oxygen			
	E)	None of these is correct.			
16.	How	w many phosphorus atoms are represented by			
	one	formula unit of calcium phosphate,			
	Ca ₃ (PO ₄) ₃ ?			
	A)	9			
	B)	12			
	C)	6			
	D)	18			
	E)	3			
17.	17. An example of a pure substance is				
	A)	carbon dioxide			
	B)	pure water			
	C)	elements			
	D)	compounds			
	E)	all of these			
18.	Whi	ch of the following is an element?			
	A)	sugar			
	B)	helium			
	C)	air			
	D)	salt			
	E)	water			
19.	Wha	at element has the following electron			
	cont	iguration 1s ² 2s ² 2p ^o 3s ² 3p ^o 4s ² 3d ⁵			
	A)	Cu			
	B)	Mn			
	C)	Mo			
	D)	Cr			
	E)	v			
20.	How	w many hydrogen atoms are indicated by the			
	Torn	101a (1NH4)2U8H4U2?			
	A)	20			
	B)	24			
	C)	12			
	D)	8			

none of these E)

21. The iodine-131 nuclide has a half-life of 8.0 days. If you originally have a 651-g sample, after 2.0 months you will have (Ignore significant figures for this problem.)

- 125 g 3.6 g A)
- B)
- C) 56 g
- less than 1 g D)
- E) 48 g
- 22. The maximum number of electrons allowed in each of the d orbitals is
 - A) 18
 - B) 32
 - C) 4
 - D) 10
 - E) 2

23. Which of the below noble gas electron

- configurations is correct?
- A) [Kr] $4s^23d^{10}4p^5$ B) [Ar] $3s^22d^{10}3p^5$
- C) [Ar] $4s^24d^{10}4p^5$
- D) [Ne] $4s^23d^{10}4p^5$
- E) [Ar] $4s^23d^{10}4p^5$

24. Which of the following is a chemical change?

- A) A damp towel dries.
- B) Peanuts are crushed.
- C) A "tin" can rusts.
- D) Water condenses on a mirror.
- E) At least two of the above (a-d) exhibit a chemical change.

25. The symbol for the element bromine is

- A) Be
- B) Bn
- C) B
- D) Bro
- E) Br

26. An example of a mixture is

- A) purified water
- B) the air in this room
- C) hydrogen fluoride
- D) gold
- E) all of these

27. A homogeneous mixture is also called

A) a pure substance.

- B) an element.
- C) a heterogeneous mixture.
- D) a compound.
- E) a solution.
- An object has a mass of 40.1 g and occupies a volume of 6.61 mL. The density of this object is
 - A) 0.165 g/mL
 - B) 6.07 g/mL
 - C) too low to measure
 - D) 40.1 g/mL
 - E) 265 g/mL

29. Which of the following is a chemical change?

- A) sugar dissolving in water
- B) butter melting
- C) water boiling
- D) paper burning
- E) gasoline evaporating
- 30. A solution of Copper Sulfate is put into **blue flame** and a green color appears. The same solution of Copper was put into a **yellow flame** and there was no color change. Which of the following best explains this phenomena?
 - A) Insufficient amount of energy of the yellow flame
 - B) Error in solution
 - C) Sufficient amount of energy in the yellow flame
 - D) Insufficient amount of energy of the blue flame

- 31. Which of the following involves no chemical change?
 - A) boiling water
 - B) baking a cake
 - C) driving a car
 - D) burning paper
 - E) lighting a match
- 32. A ______ change involves a change in the fundamental components of the substance; a given substance changes into a different substance or substances.
 - A) kinetic
 - B) potential
 - C) chemical
 - D) mixed
 - E) physical
- 33. You take 20.0 mL of water from a graduated cylinder and add it to the beaker of water below. What is the new volume of water in the beaker?



- A) 35 mL
- B) 25.0 mL
- C) 35.0 mL
- D) 40. mL
- E) 40 mL
- 34. Which of the following processes require(s) chemical methods?
 - A) Separating a heterogeneous mixture into pure substances.
 - B) At least two of the above (a-d) require chemical methods.
 - C) Breaking a compound into its constituent elements.
 - D) Separating a homogeneous mixture into pure substances.
 - E) Distilling a saltwater mixture.
- 35. Which of the following processes is a chemical change?
 - A) Liquid nitrogen dumped onto the floor vaporizes at room temperature.
 - B) Dry ice sublimes when left on the demo table in lecture.
 - C) The light on a candle burns until a bell jar is placed over it for a period of time.
 - D) When a few drops of red food coloring are added to a beaker of hot water, the water immediately turns red.
 - E) None of the above processes are chemical changes.

ertain isotope X ⁺ contains 54 electrons and eutrons. What is the mass number for this nent? 55 133 53 131 132
symbol Cs stands for the element calcium cesium cadmium curium carbon
mple of a radioactive element decays to % of its original amount of radioactive ides in 15 years. What is the half-life of this pactive element?
92.5 years 36. years 2.8 years 9.2 years 7.5 years
symbol for the element zinc is Zc Zi Zin Z Zn
7 many of the following are pure pounds? sodium, sugar, oxygen, air, iron 4 2 5 1
Br-82 nucleus has a half-life of about 1.0 x ninutes. If you wanted 3.3 g of Br-82 and lelivery time was three days, about how h NaBr should you order (assuming all of
Br in the NaBr was Br-82)?

51.	Which of the following represents the correct
	noble gas configuration of the element Mercury?

- [Xe]6s²5d¹⁰ A)
- [Xe]6s²4f¹⁴4d¹⁰ B)
- $[Rn]6s^24f^{14}5d^{10}$ C)
- $[Xe]6s^24f^{14}5d^{10}$ D)

52	How many of the following did Dalton not			
	discuss in his atomic theory?			
	isotopes			
	ions			
	protons electrons neutrons A) 5 B) 1			
	protons electrons neutrons A) 5 B) 1			
	neutrons			
	A) 5			
	B) 1			
	C) 4			
	D) 2			
	E) 3			
53	. The symbol Ga stands for the element			
	A) gold			
	B) gadolinium			
	C) germanium			
	D) gallium			

E) none of these

Answer Key

- 20. C 1. A 2. E 21. B 3. C 22. E 4. D 23. E 24. C 5. B 6. D 25. E 7. C 26. B 8. D 27. E 9. E 28. B 10. E 29. D 11. A 30. A 12. C 31. A 13. C 32. C 14. A 33. A 15. D 34. C 35. C 16. E
- 17. E 18. B 19. B

Total Time Used:	
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/65min

Score: /55 Qs

Study Plan:

36. E

37. A 38. D

> % Correct %

Types of Qs or Topics Missed:

54. The state of matter for an object that has neither definite shape nor definite volume is

- A) mixed
- B) gaseous
- C) elemental
- D) solid
- E) liquid
- 55. The element curium (Z = 242, A = 96) can be produced by positive-ion bombardment when an alpha particle collides with which of the following nuclei? Recall that a neutron is also a product of this bombardment.

39. B

40. E

41. D 42. E

43. C

44. A

45. B

46. B

47. E

48. E

49. E

50. C

51. D

52. A

53. D

54. B

55. B

- ²⁴¹₉₅Am A)
- $^{239}_{94}$ Pu B)
- ²³⁹₉₂U C)
- D)
- $^{241}_{94}$ Pu
- ²⁴⁹₉₈Cf E)