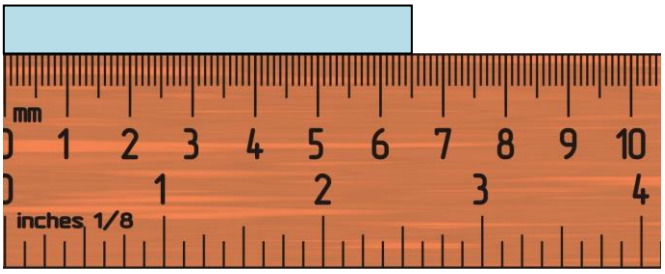
Chemical Systems EOC for Ferguson-Florissant School District

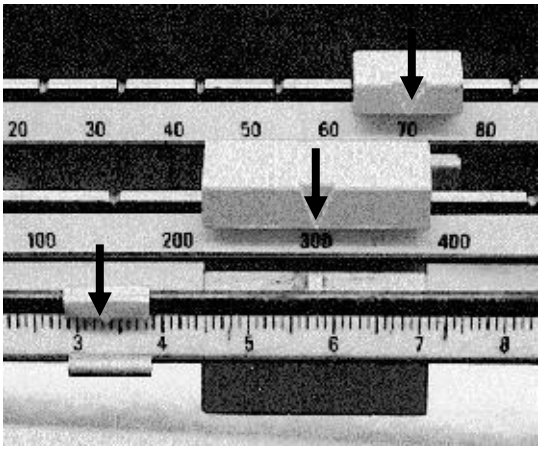
1. Use the ruler below to measure the length of the box in millimeters. [1 point; VII.1.B.b]

   A. 6.5mm
   B. **65mm**
   C. 6mm
   D. 60mm



2. Use the picture of the triple-beam balance to the right to determine the mass of the object in grams. [1 point; VII.1.B.b]

   A. **373.3g**
   B. 373.3mg
   C. 300g
   D. 300mg



3. Use the beaker to the right to determine the volume of the liquid. [1 point; VII.1.B.b]

   A. 0mL
   B. **200mL**
   C. 150L
   D. 200L

4. Which is the appropriate unit to use to measure the distance between McCluer North and McCluer South Berkley? [1 point; VII.1.B.d]

A. Kilometer
B. Meter
C. Centimeter
D. Millimeter

5. A marble has a mass of 20g and displaces 10mL of water. What is the density of the marble? [1 point- I.1.A.a]

A. 2g/mL
B. 30g/mL
C. 2g

6. Label "beach sand" as either a mixture or a pure substance. [1 point- I.1.A.b]

A. Mixture
B. Pure Substance

7. Label "Kool-aid" as an element, compound, homogeneous mixture, or heterogeneous mixture [1 point- I.1.A.b]

A. Element
B. Compound
C. Homogeneous Mixture
D. Heterogeneous Mixture

8. Label "Sugar/Glucose($C_6H_{12}O_6$)" as an element, compound, homogeneous mixture, or heterogeneous mixture [1 point- I.1.A.b]

A. Element
B. Compound
C. Homogeneous Mixture
D. Heterogeneous Mixture

9. Which of the following is not a physical change? [1 point- I.1.G.a]

A. Grinding
B. Cutting
C. Boiling
D. Burning

10. List the phases of water in order, from the phase with the slowest molecular movement to the phase with the fastest molecular movement. [1 point- I.1.D.a]

A. Gas-Liquid-Solid
B. Liquid-Solid-Gas
C. Solid-Liquid-Gas
D. Gas-Solid-Liquid

11. Particles of a solid _____. [I.1.D.b -1 point]

A. **vibrate next to one another.**
B. are able to slide around each other.
C. fill up the space of the its container.
D. have positive and negative charges.

12. Subatomic particle with a positive charge and is located in nucleus. [I.1.E.a- 1 point]

A. Proton
B. Neutron
C. Electron
D. Valence Electron

13. Subatomic particle with a neutral charge and is located in nucleus. [I.1.E.a- 1 point]

A. Proton
B. Neutron
C. Electron
D. Valence Electron

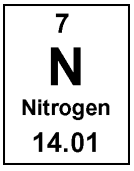
14. Subatomic particle with a negative charge and is located outside the nucleus. [I.1.E.a- 1 point]

A. Proton
B. Neutron
C. Electron
D. Valence Electron

15. Which subatomic particle is the lightest? [I.1.E.a- 1 point]

A. Proton
B. Neutron
C. Electron
D. Valence Electron

16. The periodic table notation for nitrogen (N) is shown here. An atom of nitrogen has how many electrons? [1 point- I.1.E.b]



A. 7
B. 7 or 8
C. 14 or 15
D. Cannot be determined with the information given.

17. Elements in group 1 on the periodic table would LEAST likely bond with elements from which group? [1 point- I.1.F.a]

A. Group 2
B. Group 16
C. Group 17
D. None of the above

18. Which is <u>not</u> a characteristic of a METAL? [I.1.F.b- 1 point]
A. Malleable
B. Ductile
C. Good Conductor
D. Most are liquid at room temperature

19. Which is <u>not</u> a characteristic of a NONMETAL? [I.1.F.b- 1 point]
A. Poor Conductors
B. Most are gas at room temperature
C. Malleable
D. NOT Ductile

20. An ion with a positive charge is called a ___. [I.1.F.c- 1 point]
A. cation
B. anion
C. proton
D. neutron

21. Which statement best explains why atoms form chemical bonds with other atoms? [1 point- I.1.H.c]

A. Most atoms are less stable when they combine with other atoms.
B. When atoms collide with other atoms, they bond automatically.
C. Atoms are always attracted to other atoms.
D. Most atoms are unstable unless they are combined with other atoms.

22. Mark the answer that has the correct chemical name for: [I.1.H.c- 1 point]

CO

A. Carbon oxygen
B. Carbon monoxide
C. Carbon dioxide
D. Monocarbon monoxide

23. Mark the answer that has the correct chemical formula for: [I.1.H.c- 1 point]

Potassium sulfide

A. K S
B. K_2S
C. KS_2
D. KSO_4

24. Answer the following questions about the chemical reaction for the combustion of methane gas: [1 point- I.1.I.a]

$CH_4 + O_2 \rightarrow CO_2 + H_2O$

Identify the reactants:

A. CO_2 and H_20
B. CH_4 and O_2
C. O_2 and H_2O
D. CH_4 and CO

25. List the reaction type for the following reaction: [I.1.H.c- 1 point]

$2\ KClO_3(s) \rightarrow 2KCl(s) + 3\ O_2(g)$

A. Combination
B. Decomposition
C. Single Replacement
D. Combustion

26. Which of the following is NOT an effect of acid rain? [1 point- V.1.B.a]

A. Acid rain can disrupt the life cycles of fish and other aquatic animals.
B. Acid rain preserves forests by encouraging rapid tree growth.
C. Acid rain dissolves important nutrients in soils.
D. Acid rain dissolves limestone and marble buildings and monuments.

27. The ozone layer can be damaged by: [1 point- V.1.C.b]

A. Chlorofluorocarbons (CFC's).
B. Radiation
C. Oxygen
D. Meteors

28. What is the process the sun use to convert its own mass into energy? [1 point- V.1.C.a]

A. **Nuclear Fusion**
B. Momentum
C. Radiation
D. Thermal Energy

29. Which of the following factors determines an area's climate? [1 point- V.1.D.b]

A. Latitude
B. Elevation
C. Distance from large bodies of water
D. All of the above

For question 30 use the relative humidity table below.

Dry Bulb Temperature (°C)	Difference Between Wet and Dry Bulb Temperatures (°C)			
	1	2	3	4
15	90	80	71	61
16	90	81	71	63
17	90	81	72	64
18	91	82	73	65
19	91	82	74	65

30. What is the relative humidity for a dry bulb temperature of 15°C and a difference of 2°C? [V.2.F.a- 1 point]

A. 61%
B. **80%**
C. 82%
D. 71%

31. In a warm front warm air slides _____cold air. [1 point- V.2.F.b]

A. over
B. under
C. in between

32. Earth's wind is the result of: [1 point- V.2.G.a]

A. Differences in altitude
B. Earth's tilt.
C. Ocean Currents.
D. Uneven heating on Earth.

33. What part of the earth (which layer) do we live on? [V.2.B.d- 1 point]

A. **Crust**
B. Mantle
C. inner core
D. outer core

34. What are the 2 types of crusts? **Mark all answers that apply**. [V.2.B.d- 1 point]

A. **Continental**
B. **Oceanic**
C. Crust
D. Core

35. _____ was the first to propose the Continental Drift Theory. [V.2.B.e, V.2.B.f- 1 point]

A. Dr. Harry Hess
B. **Alfred Wegener**
C. Erwin Schrödinger
D. Albert Einstein

36. _____ was able to prove Wegener's theory after discovering the mid-ocean ridge using sonar technology. [V.2.B.e, V.2.B.f- 1 point]

A. **Dr. Harry Hess**
B. Alfred Wegener
C. Erwin Schrödinger
D. Albert Einstein

37. What are the 3 types of plate boundaries? **Mark all answers that apply.** [V.2.B.b, V.2.B.e, V.2.B.f- 1 point]

A. **divergent**
B. **convergent**
C. **transform**
D. theory

38. What type of boundary is formed when 2 plates collide? [V.2.B.b, V.2.B.e, V.2.B.f- 1 point]

A. **Convergent boundaries**
B. Divergent boundaries
C. Transform boundaries
D. None of the Above