Stoich Benchmark Practice Test ---Name _____Per_____ Seat #_____

1.	4.2 moles of copper contains
a.	4.2 atoms
b.	2.53×10^{24} atoms
c.	$8.45 \times 10_{23}$ atoms
d.	2.53×10^{24} g
e.	63.55g

2.	What is the mass of 125 atoms of carbon in grams?
a.	12.01
b.	2.49×10^{-21} grams
c.	1.06×10^{24} grams
d.	2.08×10^{-22} grams
e.	1501.25 grams

3.	A 2.1 mole sample of K_2O reacts with H_2O $K_2O + H_2O \rightarrow 2KOH$ How many moles of KOH are formed assuming 100% yield?
a.	4.2 mole
b.	1.05 mole
c.	8.4 mole
d.	2.1 mole
e.	18.0 mole

4.	Refer to the following equation $N_2O_3 + H_2O \rightarrow 2HNO_2$ How many moles of water will produce 6.3 moles of HNO_2
a.	6.3 mole
b.	3.2 mole
c.	12.6 mole
d.	18.02 mole
e.	45.02 mole

5.	How many molecules of H_3BO_3 will be formed if 6.37 g of water are reacted in this unbalanced reaction. $B_2O_3 + H_2O \rightarrow H_3BO_3$
a.	1.62×10^{24} molecules
b.	1.42×10^{23} molecules
c.	5.23×10^{23} molecules
d.	2.34×10^2 molecules
e.	1.42×10^3 molecules

6.	Refer to the following unbalanced reaction. $CaS_2 + O_2 \rightarrow CaS_2O_3$ What mass of oxygen in required to produce 31.5g of CaS_2O_3?
a.	2.99g
b.	1.99g
c.	9.93g
d.	5.05g
e.	31.5g

7.	How many moles of CH_4 in 64g of CH_4?
a.	16.05mole
b.	3.99mole
c.	4.12mole
d.	1.00mole
e.	8.03mole

8.	How many oxygen atoms are in 3.2 moles of O_2?
a.	5.34×10^4 atoms
b.	1.93×10^2 atoms
c.	1.06×10^{24} atoms
d.	1.93×10^{24} atoms
e.	3.85×10^{24} atoms

9.	The balanced reaction $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ 4.5 moles of oxygen gas will
a.	produce 2.3 moles of CH_4
b.	React with 2.3 moles of CH_4
c.	Produce 2.3 moles of H_2O
d.	React with 4.5 moles of CH_4
e.	Produce 9.0 moles of CO_2

10.	How many moles of oxygen are reacted to produce 20.7 g of iron(III) oxide (molar mass = 159.7 g/mol) in the unbalanced synthesis reaction below. $Fe + O_2 \rightarrow Fe_2O_3$
a.	15.9 mole
b.	0.19 mole
c.	0.54 mole
d.	0.42 mole
e.	1.2 mole

11.	For the unbalanced reaction $PCl_3 + H_2O \rightarrow H_3PO_3 + HCl$ How many grams of HCl can be produced from 27.7 g of PCl_3 and excess water
a.	7.35g
b.	11.03g
c.	22.06g
d.	32.05g
e.	27.7g

12.	How many atoms in 35.4g of oxygen?
a.	2.21×10^{23}atoms
b.	1.06×10^{24} atoms
c.	6.02×10^{23} atoms
d.	1.33×10^{24} atoms
e.	3.54×10^{12} atoms

13.	What is the molar mass of Al_2O_3?
a.	48.0g
b.	102.0g
c.	53.9g
d.	43.0g
e.	204.2g

14.	If 57.2g of water is produced in the reaction of C_3H_8 with O_2 to form CO_2 and H_2O, How many grams of O_2 are reacted?
a.	42.5g
b.	81.2g
c.	101.6g
d.	127.0g
e.	250.5g

15.	For the unbalanced reaction $H_2S + Cl_2 \rightarrow S_8 + HCl$ How many grams of HCl can be produced from 36.4 g of H_2S and excess chlorine gas
a.	80.45g
b.	38.99g
c.	116.79g
d.	38.93g
e.	77.86g

16.	How many atoms of chlorine are in 62.3g of chlorine?
a.	1.06×10^{24} atoms
b.	1.76×10^{24} atoms
c.	6.23×10^{24} atoms
d.	6.12×10^{24} atoms
e.	1.00×10^{24} atoms

17.	If 36.1g of CO_2 is produced in the reaction of Glucose($C_6H_{12}O_6$) with O_2 to for CO_2 and H_2O, How many grams of H_2O are produced in this reaction
a.	44.34g
b.	11.09g
c.	88.69g
d.	14.78g
e.	3.70g

18.	The Molar mass of NaCl is
a.	70.6g
b.	58.4g
c.	45.6g
d.	22.9g
e.	35.4g

19.	What is the molar mass of copper(II) sulfate?
a.	64.0g
b.	63.6g
c.	111.6g
d.	159.6g
e.	95.3g

20.	The balanced equation $N_2 + 3H_2 \rightarrow 2NH_3$ reacts 3.4 moles of N_2
a.	reacting with 3.4 moles of H_2
b.	producing 6.8 moles of NH_3
c.	reacting with 6.8 moles of H_2
d.	producing 10.2 moles of NH_3
e.	reacting with 3.4 moles of NH_3

21.	How many moles of oxygen and produced in the decomposition of 45.3g of potassium chlorate (molar mass = 122.54g/mol) in the unbalanced equation below. $KClO_3 \rightarrow KCl + O_2$
a.	12.25 mole
b.	0.45 mole
c.	1.00 mole
d.	0.55 mole
e.	2.55 mole

22.	How many molecules of water will be produced when 5.21g of methane are reacted in the following unbalanced reaction $CH_4 + O_2 \rightarrow CO_2 + H_2O$
a.	3.90×10^2 molecules
b.	1.45×10^{23} molecules
c.	2.34×10^{23} molecules
d.	4.90×10^3 molecules
e.	3.90×10^{23} molecules

23.	Refer to the following unbalanced reaction $C_2H_6 + O_2 \rightarrow CO_2 + H_2O$ What mass of oxygen is required to react completely with 3.5g of C_2H_6?
a.	7.5g
b.	13.03g
c.	3.72g
d.	24.02g
e.	32.00g

24.	How many atoms are in 5.4 moles of NO_2?
a.	3.25×10^{24} atoms
b.	9.75×10^{24} atoms
c.	5.40×10^{23} atoms
d.	6.00×10^4 atoms
e.	1.46×10^2 atoms

25.	Convert 25.3g of NH_3 to moles of NH_3.
a.	2.83mole
b.	2.53mole
c.	1.48mole
d.	1.00mole
e.	0.5moles

26.	Refer to the following equation $Al(OH)_3 + NaOH \rightarrow NaAlO_2 + 2H_2O$ How many moles of water will be produced in 25 moles of sodium hydroxide are completely reacted?
a.	2 mole
b.	7.0 mole
c.	12.5 mole
d.	25 mole
e.	50 mole

27.	1.5 moles of NH_4HCO_3 react with NaCl in the equation: $NaCl + NH_4HCO_3 \rightarrow NaHCO_3 + NH_4Cl$ How many moles of NH_4Cl are formed assuming 100% yield?
a.	3.0 mole
b.	1.5mole
c.	4.2mole
d.	0.75 mole
e.	2.5 mole

28.	Calculate the molar mass of ammonium chloride?
a.	70.4g
b.	28.0g
c.	45.5g
d.	83.2g
e.	53.5g

29.	What is the mass of 1234 atoms of nitrogen?
a.	1.73×10^4 g
b.	4.32×10^{-24} g
c.	1.40×10^{-20} g
d.	1060 g
e.	2.87×10-20 g

30.	8.2 moles of fluorine contains
a.	0.43g
b.	6.02×10^{23} g
c.	453 atoms
d.	155.8g
e.	1.56×10^{24} atoms