First Year Secondary First Term 2019/ 2020

CHEMISTRY

MODEL QUESTIONS

Choose the correct answer for each question.

1.	How many atoms are there in one mole of CH_3OH?
	A. 6 atoms B. 6.0×10^{23} atoms C. 12.0×10^{23} atoms D. 3.6×10^{24} atoms

2.	$NH_3 + O_2 \longrightarrow NO_2 + H_2O$ Balance the equation given above. Then, find the number of moles of oxygen gas O_2 involved in the reaction.
	A. 1 mole B. 3 moles C. 4 moles D. 7 moles

3.	When iron pyrite (FeS_2) is heated in air, the process is known as "roasting". It forms sulfur dioxide and iron (III) oxide as follows: $FeS_2 + O_2 \longrightarrow SO_2 + Fe_2O_3$ **Balance** the given equation, **and then,** choose the correct choice of the number of moles for the reactants and products.
	A. 4, 2, 8, 7 respectively B. 2, 4, 7, 8 respectively C. 2, 11, 7, 8 respectively D. 4, 11, 8, 2 respectively

4.	Doctors recommend taking vitamin (C) in winter days, How many moles of Vitamin C, ($C_6H_8O_6$), are there in 528 g of Vitamin C? given that: (C =12 , H = 1 , O = 16)
	A. 2 moles B.2,75 moles C.4 moles D.5 moles

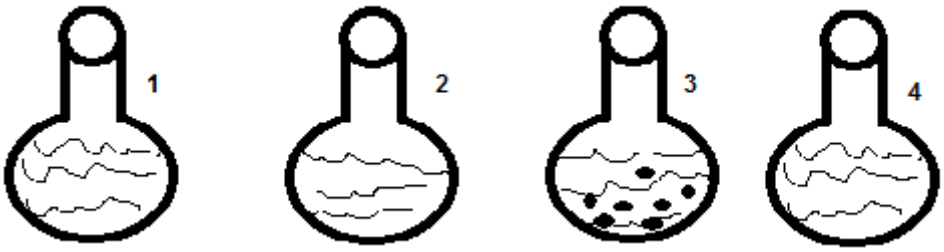
5.	Which one of the following will turn red litmus solution into blue?
	A. Vinegar B. Baking soda solution C. Orange juice D. Soft drinks

6.	Calcium is one of the most important minerals the body needs in general, and teeth in particular, because it gives the texture and the external shape of the teeth, to bear the pressure on them. Acids are the main cause of loss of the outer enamel layer of the teeth. Repeated exposure to acids causes continuous wear of the enamel over time until the tooth loses its protective layer completely and becomes vulnerable to damage. According to this, calcium phosphate ($CaHPO_4$) which is present in tooth enamel is:
	A. Basic B. Amphoteric C. Acidic D. Neutral

7.	Which acid of the following does not form an acidic salt?
	A. Phosphoric acid B. Carbonic acid C. Hydrochloric acid D. Sulphuric acid

8. You have got four conical flasks, each of them contains 500 ml of water and an amount of sugar as follow:

flask 1	flask 2	flask 3	flask 4
150g	250g	450 g	0.5 g



Which flask contains a saturated solution?

A. Flask 1
B. Flask 2
C. Flask 3
D. Flask 4

9. Calculate the mass of hydrogen formed when 25 grams of aluminum reacts with an excess amount of hydrochloric acid.

$$2Al + 6HCl \longrightarrow Al_2Cl_6 + 3H_2$$

(Al=27,H=1,Cl=35.5)

A. 0.41 g
B. 1.2 g
C. 1.8 g
D. 2.8 g

10. If 5.0 g of each reactant were used for the following process:

$$2KMnO_4 + 5Hg_2Cl_2 + 16HCl \longrightarrow 10HgCl_2 + 2MnCl_2 + 2KCl + 8H_2O$$

The limiting reactant would be:

A. $KMnO_4$
B. HCl
C. H_2O
D. Hg_2Cl_2

11.	In the equation: $HF + H_2O \rightarrow H_3O^+ + F^-$
	A. H_2O is a base and HF is its conjugate acid. B. H_2O is an acid and HF is the conjugate base. C. HF is an acid and F^- is its conjugate base. D. HF is a base and H_3O^+ is its conjugate acid.

12.	An ionic compound contains 29.08% sodium, 40.56% sulfur and 30.36% oxygen by mass. What is the formula of the sulfur – containing anion in the compound?
	A. $\mathbf{S_2O_3^{2-}}$. B. $\mathbf{S_2O_4^{2-}}$. C. $\mathbf{S_2O_5^{2-}}$. D. $\mathbf{S_2O_6^{2-}}$.

13.	You have below **five** neutralization reactions between the acid-base pairs in dilute aqueous solutions: (1) $CH_3COOH + NaOH \rightarrow$ (2) $HNO_3 + Mg(OH)_2 \rightarrow$ (3) $H_3PO_4 + Ba(OH)_2 \rightarrow$ (4) $HCl + KOH \rightarrow$ (5) $H_2CO_3 + Li\,OH \rightarrow$ In which of these reactions, the **net ionic** equation is: $H^+ + OH^- \rightarrow H_2O$?
	A. Reaction 2 only B. Reactions 1, 4 and 5 C. Reactions 2 and 3 D. Reaction 4 only

14.	Which of the following equations represents the **net ionic** equation for the reaction of nitric acid with aluminum hydroxide?
	A. $3H^+ + Al(OH)_{3(s)} \rightarrow Al^{3+} + 3H_2O$ B. $3HNO_3 + Al(OH)_{3(s)} \rightarrow Al(NO_3)_3 + 3H_2O$ C. $HNO_3 + OH^- \rightarrow NO_3^- + H_2O$ D. $H^+ + OH^- \rightarrow H_2O$