MOLE CALCULATION QUESTIONS 1

Science Exams Sorted



Name:				
Mark: (50)	%	Grade:		

2021

1. What mass of oxygen reacts with 12g of magnesium?

$2Mg + O_2 \rightarrow 2MgO$	
	•••••
	•••••
	•••••
	Mass:g (2)
2. What mass of calcium hydroxide is made from 14kg of calcium oxid	de?
$CaO + H_2O \rightarrow Ca(OH)_2$	
	Mass:g (2)
3. What mass of aluminium is needed to react with 640g of iron oxide	· ·
$Fe_2O_3 + 2AI \rightarrow 2Fe + AI_2O_3$	
1 C2O3 1 ZAI	
	B.6
	(2)
4. What mass of titanium chloride reacts with 460g of sodium?	
$TiCl_4 + 4Na \rightarrow Ti + 4NaCl$	
	Mass:g

5.	Calculate the mass of aluminium that can be formed from 1020g of aluminium oxide.
	$2AI_2O_3 \rightarrow 4AI + 3O_2$
•••	
•••	
•••	
•••	Mass:g (2)
6	Calculate the mass of oxygen needed to react 10.0g of calcium to form calcium oxide.
0.	$2Ca + O_2 \rightarrow 2CaO$
	2Cd + O2 → 2CdO
	g
	(2)
7.	What mass of propane could burn in 48.0g of oxygen?
	$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$
•••	
•••	Mass:g (2)
8.	What mass of ammonia can be made from 20.0g of hydrogen?
	$3H_2 + N_2 \rightarrow 2NH_3$
•••	
•••	
•••	
•••	
• • •	Mass:g (3)

9. Wr	nat mass of sodium hydroxide is needed to neutralise 24.5kg of sulfuric acid?
	$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$
	(3)
	culate the mass of calcium oxide that can be obtained by heating 25kg of Calcium bonate.
	$CaCO_3 \rightarrow CaO + CO_2$
•••••	Mass:g (3)
Note:	After this point you may <u>need to balance the equations before calculating masses</u> .
<u> </u>	inter this point you may incourte salarite the equations serve calculating masses.
	nat mass of carbon dioxide is formed when 7.41g of copper (II) carbonate decomposes heating?
	$CuCO_3 \rightarrow CuO + CO_2$
	g
•••••	(3)
12. Wh	nat mass of carbon monoxide is needed to react with 2.08kg of iron oxide?
	$Fe_2O_3 + CO \rightarrow Fe + CO_2$
• • • • • • • • •	•••••••••••••••••••••••••••••••••••••

13. What mass of chlorine reacts with 20.0g of iron to form iron(III) chloride?
$Fe + 3Cl_2 \rightarrow FeCl_3$
g (3)
14. Hydrazine (N_2H_4) is used as a rocket fuel. It can be made by reacting ammonia with hydrogen peroxide. What mass of ammonia is needed to make 148g of hydrazine?
$NH_3 + H_2O_2 \rightarrow N_2H_4 + H_2O$
g (3)
15. Titanium is extracted from titanium chloride as shown. Calculate the mass of sodium needed to react with 126g of titanium chloride.
TiCl₄ + Na → Ti + NaCl
g (3)
16. Calculate the mass of oxygen needed to react 9.60g of magnesium to form magnesium oxide.
$Mg + O_2 \rightarrow MgO$
g (3)

17. What mass of ethanol could burn in 100g of oxygen?
$C_2H_5OH + O_2 \rightarrow CO_2 + H_2O$
g (3)
18. What mass of hydrogen is formed when 2.00g of magnesium reacts with sulfuric acid?
$Mg + H_2SO_4 \rightarrow MgSO_4 + H_2$
Mass:g (3)
19. What mass of aluminium reacts with 50.0g of chlorine to form aluminium chloride?
$AI + 3CI_2 \rightarrow AICI_3$
B.fores: ~
Mass:g (3)
(5)