

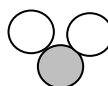
Solutions to Mrs. Pang June Exam Review

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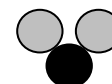
- |       |         |
|-------|---------|
| 1. D  | 32. C   |
| 2. C  | 33. B   |
| 3. D  | 34. A   |
| 4. B  | 35. B   |
| 5. A  | 36. B   |
| 6. B  | 37. A   |
| 7. B  | 38. B   |
| 8. C  | 39. D   |
| 9. B  | 40. D   |
| 10. B | 41. D   |
| 11. D | 42. 1,4 |
| 12. C | 43. B   |
| 13. A | 44. D   |
| 14. A | 45. D   |
| 15. C | 46. D   |
| 16. C | 47. C   |
| 17. B | 48. D   |
| 18. D | 49. B   |
| 19. A | 50. C   |

20. C  
21. A  
22. D  
23. C  
24. A  
25. D  
26. B  
27. D  
28. B  
29. B  
30. B  
31. C

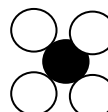
51. Water (H<sub>2</sub>O)      Hydrogen Gas (H<sub>2</sub>)

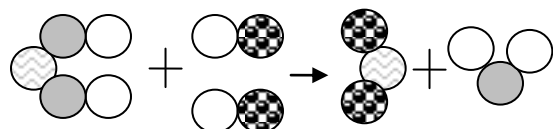
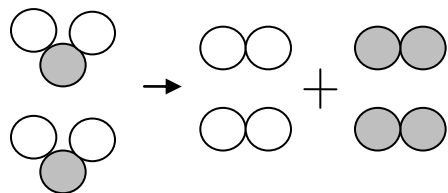


Oxygen Gas (O<sub>2</sub>)      Carbon dioxide (CO<sub>2</sub>)



Methane gas (CH<sub>4</sub>)      Carbon monoxide (CO)



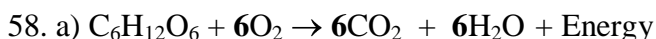
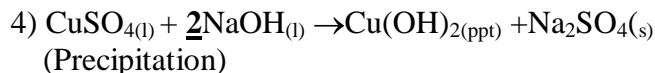
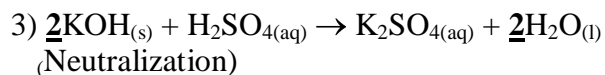
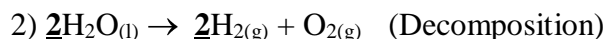
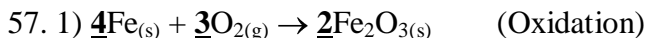


53. They have the same number of valence electrons and react the same way.

54. a) Inert Gases, column #8  
 b) Halogens, column #7  
 c) Alkali metals, column #1  
 d) Halogens, column #7

55. a) chemical  
 b) chemical  
 c) chemical  
 d) physical  
 e) chemical  
 f) chemical  
 g) chemical  
 h) physical  
 i) chemical  
 j) physical  
 k) chemical  
 l) physical

56. a) N: 1 H: 5 O: 1  
 b) Ca: 1 H: 2 C: 2 O: 6  
 c) C: 2 H: 4 O: 2  
 d) N: 2 H: 8 C: 2 O: 4

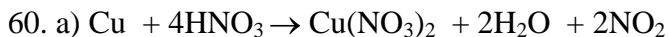


b) Products:  $6\text{CO}_2$  and  $6\text{H}_2\text{O}$  so ratio is 6 : 6

59. a) Displacement

b) Synthesis

c) Analysis or decomposition



$$191 \text{ g} + 756 \text{ g} = 563 \text{ g} + 108 \text{ g} + ?$$

$$947 \text{ g} = 671 \text{ g} + ?$$

$$947 \text{ g} - 671 \text{ g} = ?$$

$$276 \text{ g} = ?$$

b) reactants:  $1\text{Cu}$  and  $4\text{HNO}_3$  so ratio is 1 : 4

61. a) acid                      b) salt and water

62. To neutralize an acid you must add a base.

You add the base until it changes colour. The instant it changes colour you must stop, because the colour change indicates that the neutralization has occurred. Now using pH paper, verify that the pH is 7. If it is then the neutralization was done properly.

63. Electrolytes are salt, acids or bases that have been dissolved in water.

64.  $\text{Ca}^{2+} = 20 - 2 = 18$  electrons  
 $\text{C}^{-4} = 6 + 4 = 10$  electrons  
 $\text{O}^{-2} = 8 + 2 = 10$  electrons  
 $\text{K}^{+1} = 19 - 1 = 18$  electrons

65. a) Acid  $\text{HBr} \rightarrow \text{H}^{+1} + \text{Br}^{-1}$

b) Neither

c) Acid  $\text{HCl} \rightarrow \text{H}^{+1} + \text{Cl}^{-1}$

d) Salt  $\text{CaCl}_2 \rightarrow \text{Ca}^{+2} + \text{Cl}^{-1}$

e) Base  $\text{NaOH} \rightarrow \text{Na}^{+1} + \text{OH}^{-1}$

66. a) 4000 ppm

b) 5000 ppm

c) 600 ppm

d) 7000 ppm

67. use the formula  $c = \frac{m}{v}$

1)  $\frac{1 \text{ g}}{100 \text{ mL}} = 0.01 \text{ g/mL}$

2)  $\frac{6 \text{ g}}{1 \text{ L} \times 1000} = \frac{6 \text{ g}}{1000 \text{ mL}} = 0.006 \text{ g/mL}$

3) (ignore the 2.0g)  
 $4000 \text{ ppm} = \frac{4000 \text{ mg} \div 1000}{\text{L} \times 1000}$   
 $= \frac{4 \text{ g}}{1000 \text{ mL}}$   
 $= 0.004 \text{ g/mL}$

4)  $\frac{5 \text{ g}}{200 \text{ ml}} = 0.025 \text{ g/mL}$

68. Moves from positive to negative.

69. length, thickness, temperature, material

70.  $I_T = \frac{V_T}{R_T} = \frac{9 \text{ V}}{2\Omega + 4\Omega + 7\Omega + 5\Omega} = 0.5 \text{ A}$

$$R_T = 6\Omega^{-1} + 18\Omega^{-1} + 9\Omega^{-1} : \\ = 0.333^{-1} = 3\Omega$$

71.

$$I_T = \frac{V_T}{R_T} = \frac{36 \text{ V}}{3\Omega} = 12 \text{ A}$$

72. a)  $A_1 = I_T = \frac{V_T}{R_T} = \frac{200 \text{ V}}{100\Omega} = 2 \text{ A}$

b)  $A_2 = A_1 = 2 \text{ A}$

c)  $V_1 = I_1 R_1 = 2 \text{ A} \times 5\Omega = 10 \text{ V}$

d)  $V_2 = I_2 R_2 = 2 \text{ A} \times (5 + 20)\Omega = 50 \text{ V}$

e)  $V_3 = I_3 R_3 = 2 \text{ A} \times 50\Omega = 100 \text{ V}$

73.  $P = VI = V \left(\frac{V}{R}\right)$  since  $I = \frac{V}{R}$   
 $= 6.0 \times \left(\frac{6}{10}\right)$   
 $= 3.6 \text{ W}$

74.  $P = \frac{E}{\Delta t} = \frac{90\,000 \text{ J}}{60 \text{ s}} = 1500 \text{ W}$

75.  $E = P\Delta t = 1000 \text{ W} \times 4 \text{ h} = 4000 \text{ Wh}$

76. a) radiant  
 b) chemical  
 c) nuclear  
 d) hydraulic  
 e) chemical  
 f) wind

77. a)  $\frac{\% E}{1} = \frac{U.E \times 100}{C.E}$

$$\frac{15\%}{1} = \frac{U.E \times 100}{2000 \text{ kJ}}$$

$$U.E = 15 \times 2000 \div 1 \div 100 = 300 \text{ J}$$

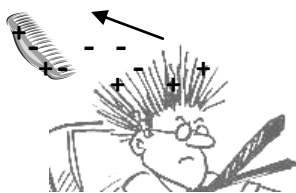
b)  $U.E. \times 3 = 300 \text{ J} \times 3 = 900 \text{ J}$

78. The rod takes electrons from the silk and therefore becomes negatively charged.

79. They attract each other.

*Explanation:* Sphere A and C are the same charge, since they repel (step 2). So if B is attracted to A (step 1), it will also be attracted to C.

80.



The electrons from the hair move to the comb, making the hair positively charge and the comb negatively charged.

81. Sphere 2 and 3 are negative

82. Lithosphere

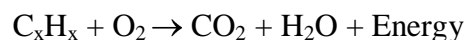
83. a) It is associated with fossil fuels because when burned, they release CO<sub>2</sub>, which is a greenhouse gas that creates global warming and leads to the melting of the polar ice caps. Fossil fuels come from the lithosphere

b) It is associated with hydroelectric dams because the title of the article says, "Impact of Dams." It comes from the hydrosphere.

84. 1) Igneous, granite used for countertops  
 2) Sedimentary, cement used for sidewalks  
 3) Metamorphic, marble used for tiles

85. water, nutrients, and correct pH

86. oxidation



87. The wind and the difference in temperature causes water to move from the equator to the North Pole.

88. The wind and the difference in temperature. Cold water sinks and warm water rises.