Pass the Regents: Regents Review
Multiple Choice Answers

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
1. 4	1. 3	1. 1	1. 4	1. 1
2. 2	2. 2	2. 4	2. 4	2. 3
3. 4	3. 3	3. 3	3. 4	3. 1
4. 4	4. 4	4. 2	4. 4	4. 3
5. 3	5. 3	5. 2	5. 4	5. 1
6. 3	6. 3	6. 2	6. 2	6. 3
7. 4	7. 1 or 2	7. 3	7. 4	7. 4
8. 1	8. 3	8. 3	8. 3	8. 1
9. 1	9. 2	9. 4	9. 1	9. 4
10. 3	10. 4		10. 2	10. 2
11. 4			11. 4	11. 3
12. 2			12. 4	
13. 3			13. 4	
14. 1			14. 4	
15. 3			15. 2	
16. 2			16. 2	
17. 3			17. 4	
18. 3			18. 2	
19. 4				
20. 4				
21. 1				

Topic 6	Topic 7	Topic 8	Topic 9	Topic 10
1. 4	1. 3	1. 1	1. 3	1. 2
2. 1	2. 2	2. 4	2. 1	2. 4
3. 4	3. 2	3. 3	3. 1	3. 3
4. 3	4. 4	4. 2	4. 1	4. 2
5. 3	5. 4	5. 2	5. 2	5. 4
6. 4	6. 3	6. 1	6. 4	6. 2
7. 2	7. 2	7. 1	7. 1	7. 1
8. 3	8. 1	8. 3	8. 1	8. 2
	9. 1	9. 2	9. 1	9. 1
	10. 3	10. 3	10. 4	10. 3
	11. 2	11. 3	11. 3	11. 4
	12. 2		12. 2	12. 3
	13. 3		13. 2	13. 1
	14. 3		14. 4	14. 4
	15. 1			

(Questions 9 – 15 go with Topic 6)

Topic 11

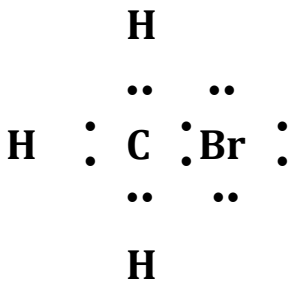
1. 1
2. 2
3. 4
4. 3
5. 3
6. 1
7. 2
8. 2
9. 2
10. 1
11. 1
12. 4
13. 3
14. 4
15. 4
16. 3
17. 2

Topic 12

1. 3
2. 1
3. 1
4. 1
5. 2
6. 3
7. 2
8. 2
9. 1
10. 1
11. 2

Combined Part B2 and C Answers

1.



2. Group 18 elements have a full octet, (8) valence electrons in their outer shell. This gives them a noble gas configuration, which makes them already stable.

3. A K atom is neutral with 19 protons, 19 electrons and 20 neutrons where as a K ion (+1) has 19 protons, 18 electrons and 20 neutrons. The ion lost 1 electron making it (+1). With fewer electrons there is a stronger attraction to the nucleus.

4. Molarity on Table T is calculated by dividing moles over liters. So 1.25moles/2.5 liters is **.5 M.**

5. More solute dissolved in solution lowers the freezing point of a solution. That is a Colligative Property. So solution 1 is at Molarity of .5M and Solution 2 is at Molarity of .3

.5M has a higher concentration so it will produce a lower freezing point.

6. Ethanol ends in –ol making it an organic **alcohol**.

7. On Table H Standard pressure is the dotted line across the chart. The boiling point is about **79 °C.**

8. 340 grams of CO_2 converted to moles is a mass → moles question. You need to divide 340 grams by the Molar mass of CO_2 which is 44 grams. 340/44 = **7.7 moles of CO_2**

9. There is no question 9

10. H – 3 contains 1 proton, 1 electron and 2 neutrons. This is because the mass of 3 is equal to the protons + neutrons. In H -1 there is only 1 proton, 1 electron and 0 neutrons.

11. Using Table N you find that H -3 has a half life of 12.31 years. You then take the total time and divide by the ½ life. So 24.62/12.31 = 2 half lives which equates to ¼ .

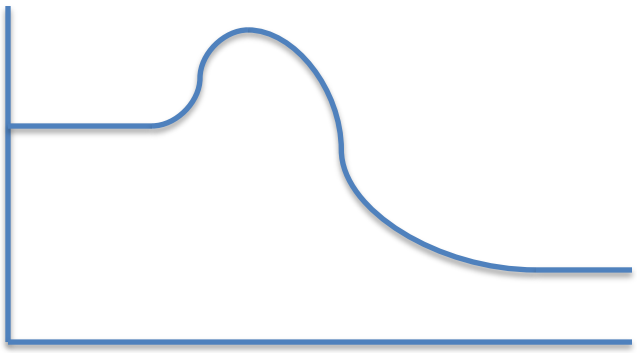
12. The balance equation is __3__Mg (s) + __1__N_2 (g) → __1__Mg_3N_2 (s)

13. A Magnesium ion is Mg^{+2} which means it lost 2 electrons. Its ground state electron configuration would change from 2 – 8 – 8 – 2 to the answer of 2 – 8 – 8 the configuration of the element Ar.

14. When 2 moles of SO_3 are produced 394KJ are released so when 1 mole is produced the energy would be half that number which is 197KJ.

15. The formula for Vanadium (V) Oxide is: V_2O_5 (after the Swap-N-Drop)

16. The reaction is exothermic which means the Products must be lower than the Reactants. Giving a (-) ΔH. The graph should look something like this:



17. Titration formula on Table T is: $M_A V_A = M_B V_B$

M_A = 0.026
V_A = 50 mL
M_B = 38.5 mL
V_B = ?

(.026)(50) = (x)(38.5)

.034M KOH

18. ALL REACTIONS SHOULD BE BALANCED:

Acid + Base → Water + Salt

HCl + KOH → HOH + KCl

19. Chemical Name for baking soda which formula is: $NaHCO_3$ = Sodium Hydrogen Carbonate

20. Percent mass (Table T) of C in $NaHCO_3$ = 12/84 x 100 = 14%

21. Because Ammonia (NH_3) is a base and bases have a pH above 7: Table M shows that Bromcresol green will turn Blue.

22. At Equilibrium the rate of the forward reaction and the rate of the reverse reaction are equal. If concentrations were being analyzed as well they would be constant.

23.

$$\overset{0}{Cl_2} \rightarrow \overset{-1}{2Cl^{-1}}$$

The oxidation number is going down so reduction is occurring. The balanced reduction reaction would be:

$$2\,e^- + Cl_2 \rightarrow 2Cl^{-1}$$

24. If the $[OH^-]$ decreases: the reaction shifts to the left and the reverse reaction is favored: increasing the $[ClO^-]$