

Science 9-Chemistry

Review of Chapters 4 & 5



10

Name _____

Due Date _____

Show Me Hand In *Correct and Hand In Again By* _____

1. An **exothermic** reaction is one which

2. An **endothermic** reaction is one which

3. Give three examples of exothermic reactions

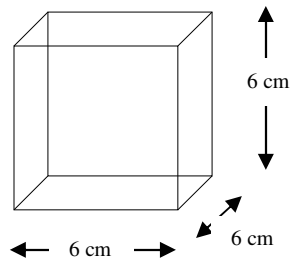
4. Give three examples of endothermic reactions

5. Given the chemical reaction: $\text{Zn} + \text{HCl} \rightarrow \text{H}_2 + \text{ZnCl}_2$
solid zinc + hydrochloric acid \rightarrow hydrogen + zinc chloride

Suggest **four** ways to increase the rate of this reaction:

- i)
- ii)
- iii)
- iv)

6. A cube has a length of 6 cm on each side.



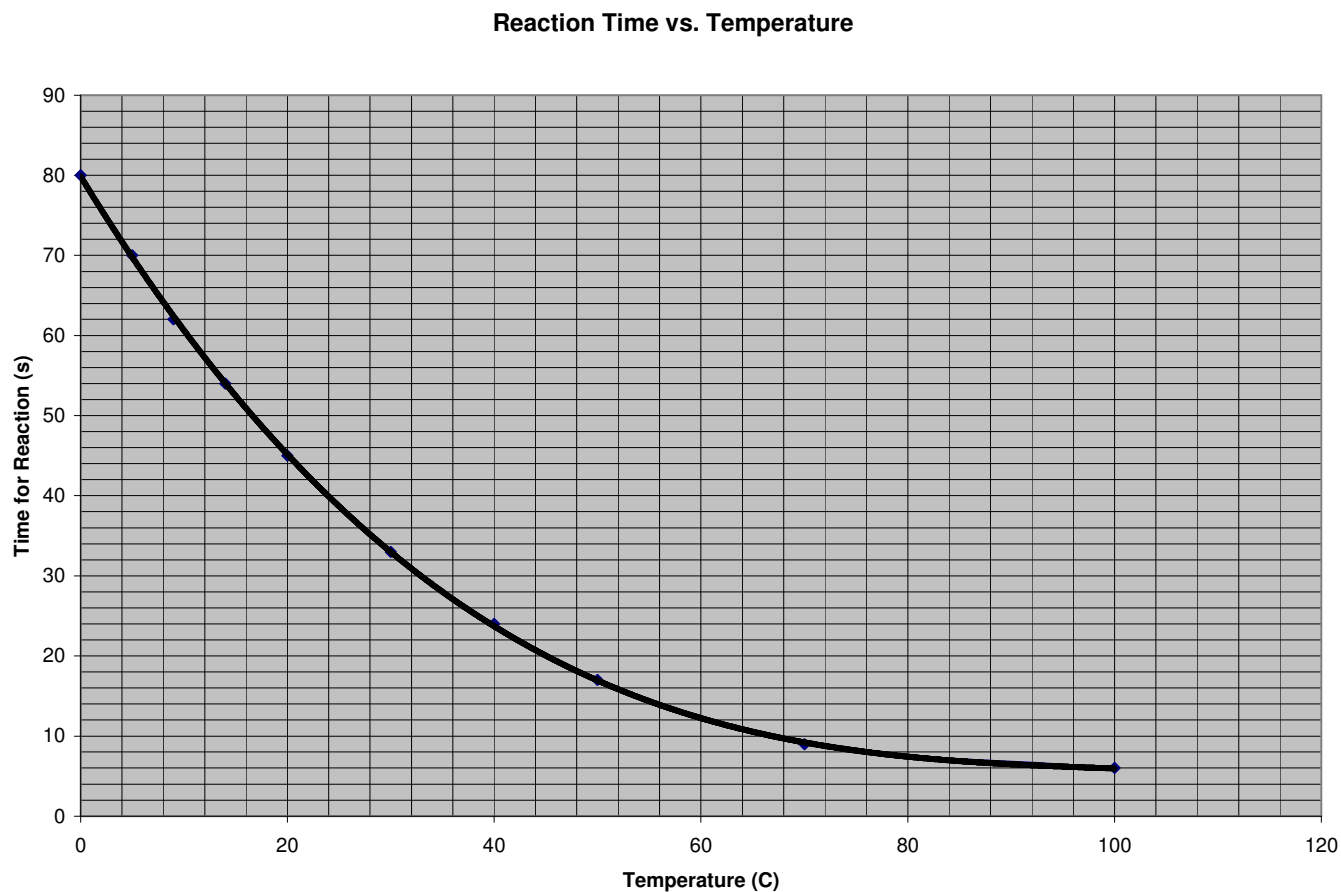
Calculate the total surface area of the cube.

Answer _____ cm^2

7. In a solution, the part present in the smaller amount is called the _____
8. In a solution, the part present in the larger amount is called the _____
9. The amount of solute dissolved in a certain volume of solution is called the _____ of the solution.
10. 200.0 mL of water are added to 200 mL of 6M HCl.
The volume has been multiplied by ____
The concentration would be multiplied by ____
The final concentration after dilution is ____M
11. You have 30.0 mL of 4.0 M HCl and you add 90.0 mL of water to it.
The final volume is now _____mL
The volume has been multiplied by ____
The concentration would be multiplied by ____
The final concentration after dilution is ____M

12. a) Describe the effect of black MnO_2 on hydrogen peroxide solution.
- b) The MnO_2 is not a reactant but it speeds up the reaction. Therefore MnO_2 is called a _____ for the reaction.
- c) Another catalyst for this reaction can be found in what organ? _____
- d) If this organ is cooked, does it still work well as a catalyst? _____
13. Catalysts in living organisms are called _____
14. Two things that can deactivate enzymes are extreme _____ and _____
15. What is corrosion?
16. Metal roofs can turn green due to compounds of _____ when it reacts with air.
17. A mixture of two or more metals is called an _____.
18. Two ways to slow down corrosion are

19. Given the following graph:



- a) What would the reaction time be at a temperature of 60 °C? _____ s
- b) What would the reaction time be at a temperature of 32 °C? _____ s
- c) What would the reaction time be at a temperature of 16 °C? _____ s
- d) What would the reaction time be at a temperature of 8 °C? _____ s
- e) What would the reaction time be at a temperature of 6 °C? _____ s

20. Given the following data from a lab in which a peanut is burned, answer the questions after it:

Observations: Data Table

1	Volume of Water	50 mL
2	Mass of Water	g
3	Final Temperature of Water	32 °C
4	Initial Temperature of Water	24 °C
5	Change in Temperature (Δt)	°C
6	Mass of Peanut Before Burning	0.8 g
7	Mass of Peanut Remaining	0.2 g
8	Mass of Peanut that Burned	g

- a) Calculate the mass of the water in the beaker.....g
(1 mL of water has a mass of 1 gram)
- b) Calculate the temperature change of the water (Δt)°C
- c) Calculate the mass of the peanut that burnedg
- d) Given the formula:

$$\text{Heat Energy Given Off (J)} = \text{Mass of H}_2\text{O Heated (g)} \times 4.2 \text{ J/g} \cdot \text{°C} \times \Delta t (\text{°C})$$

Calculate the total heat given off by the burning peanut in this experiment.

Answer _____J

- e) Calculate the heat given off per gram of peanut burned.
The formula is:

$$\text{Energy Given Off Per Gram of Peanut} = \frac{\text{Energy Given Off by Burning Peanut (J)}}{\text{Mass of Peanut that Burned (g)}}$$

Answer _____J/g