1. **How does Kinetic molecular theory describes the pressure of molecules?**
   Answer. When the heat is supplied to the molecules, they gain K.E. They exert more force. Therefore, the pressure of molecules increase.
2. **What is Brownian motion?**
   Answer. The motion of big molecules because of motion of small molecules is called Brownian Motion.
3. **If you see a question in exam where examiner asks about the Brownian motion or the motion of big molecules. The question is of 4 marks, what would you write?**
   Answer. i) Small molecules are moving randomly
   ii) Small molecules are moving fast
   iii) Small molecules collide with big molecules
   iv) Small molecules transfer their energy/momentum to big molecules
   v) The big molecules change their speed and direction or they vibrate

4. **What is Evaporation?**
   Answer. The process in which high energy molecules leave the surface of the liquid.
5. **What does Evaporation do?**
   Answer. Evaporation causes cooling
   Note: Average Kinetic Energy is Temperature
6. **Why does Evaporation cause cooling?**
   Answer. i) When High energy molecules leave the surface, the average Kinetic Energy of the liquid decreases.
   ii) The molecules with less kinetic energy are left behind
   ii) Therefore the temperature of the liquid decreases

7. **What are the factors affecting Evaporation?**
   Answer. i) Temperature of the liquid
   ii) Surface area of the liquid
   iii) Wind blowing over the liquid
8. **How the Temperature of the Gas and Pressure of the Gas are related?**
   Answer. When temperature of Gas increases, the Pressure of Gas increase

9. **How are the Pressure of a Gas and Volume of the Gas related?**
   Answer. Pressure increase, Volume decreases OR Volume increases, Pressure decreases

10. **What is the relation between Pressure and Volume of Gas?**
    Answer. PV=constant
    The product of Pressure and Volume remains the same if the temperature does not change

11. **What formula you would use if the pressure changes and volume also change. How would you find the unknown volume or pressure?**
    Answer. $P_1V_1 = P_2V_2$
    P1 is initial pressure, V1 is initial volume
    P2 is final pressure, V2 is final volume

12. What is the formula of Specific heat capacity?
    Answer. $Specific\ Heat\ Capacity = \frac{Change\ in\ Energy}{mass \times Change\ in\ Temperature}$

$$C = \frac{\Delta E}{m \Delta T}$$

$$\Delta T = T_2 - T_1$$

$$\Delta E = E_2 - E_1$$

13. How can you find the change in Energy using specific capacity?
    Answer. $\Delta E = mC\Delta T$

14. If examiner asks you to find specific heat capacity. But the change in energy is not given. However, the power is given and the time is given. How would you solve this problem?
    Answer. Use E=P×t

    Then use the formula $C = \frac{\Delta E}{m \Delta T}$

15. **How can we measure the specific heat capacity?**
    Answer.

The following apparatus will be needed:

- A block of the substance (preferably 1kg in mass) or in the case of a fluid, a beaker containing a known mass of the fluid
- A thermometer
- An appropriate heater (e.g. an immersion heater)
- A power source
- A joule meter or a voltmeter, ammeter and stop-clock (I will assume we have the latter)

- Start by assembling the apparatus and measure the initial temperature of the substance
- Turn on the power supply and start the stop-clock
- Whilst the power supply is on take several periodic measurements of the voltage and current, and calculate an average of these values
- After 5 minutes (300 seconds) switch off the power supply, stop the stop-clock and leave the apparatus for a few more minutes
- Monitor the thermometer and make a note of the highest temperature reached
- Calculate the rise in temperature
- The heat supplied to the substance can be calculated using the equation:

energy = current × voltage × time

(Note: the time must be in seconds)

These values, along with the mass of the substance, can now be substituted into the top equation to find the specific heat capacity of the substance

The biggest problem with the above experiment is that not all of the heat supplied by the heater will go into the substance – some will go into the surroundings and the substance will also lose heat whilst it is being heated

This means that the value for the heat added will be too great which means that the calculated specific heat capacity will also be too great

16. **Why the experimental specific heat capacity is always greater than the actual value?**
    Answer. Because when we are measuring the specific heat capacity, some heat energy is lost to surroundings. That's why the experimental value of specific heat capacity is greater than the actual value.
17. **Write the names of three methods of heat transfer?**
    Answer. i. Conduction
    ii. Convection
    iii. Radiation

18. **What is conduction?**
    Answer. It is a method of heat transfer in which the particles vibrate and transfer the energy. Particles never leave the place rather they only vibrate. Conduction happens in solids and liquids. Feeling heat by the sense of touch is also due to conduction.
19. **What is convection?**
    Answer. It is a method of heat transfer in which particles actually move from low region to high region because of low density of air particles. Convection always happens from bottom to top. Convection happens in liquids and gases.
    Note: Cold air sinks and hot air rises upwards
20. **What is radiation?**
    Answer. It is a method of heat transfer in which the heat transfers through electromagnetic radiation(infrared). This method does not require particles and can travel through vacuum.

21. **How can we avoid Conduction?**
    Answer. By making the walls with insulator

22. **How can we avoid Convection?**
    Answer. By creaking a vacuum

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23. **How can we avoid Radiation?**
    Answer. By making the walls with shiny silver colour.

    Note: Dark colors absorb heat fast and radiate heat fast
    Light and shiny colors absorb heat slowly and radiate heat slowly.

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