



**Class:** EM - CLASS 8

**Date:** 31-01-2025

**TickMark.Ai**  
Mumbai

**Subject:** Science

**Paper:** Unit 2 (Solution)



**Time:** 1 hrs

**Marks:** 20

**Q1)**

(1) 356.7 Celsius

(2) sound

(3) biological

**Q2)**

(1) natural indicator

(2) 1) - b, 2) - c

(3) False

Some vibrations can be felt as well as seen.

**Q3)**

**(1) Areal expansion:**

- The areal expansion of a solid is increase in the area of a solid sheet due to increase in its temperature.
- Change in area due to change in temperature is measured using coefficient of areal expansion.
- Only solids exhibit areal expansion.

**Volumetric expansion:**

- It is the expansion of solid/liquid/gas on all sides due to increase in the temperature.
- Change in volume due to change in measured using volumetric expansion coefficient in solids and liquids while, using constant pressure expansion coefficient in gases.
- Solids, liquids and gases all exhibit volumetric expansion.

- (2)**
- A muscular partition is present at the base of thoracic cage. This partition is called as diaphragm. It is present between the thoracic cavity and abdominal cavity.
  - Simultaneous rising up of ribs and lowering of diaphragm causes the decrease in pressure on lungs.
  - Due to this, air moves into the lungs through nose. When ribs return to their original position and diaphragm rises up, pressure on the lungs increases.
  - Due to this, air moves out from it through nose. Continuous upward and downward movement of diaphragm is necessary to bring about the breathing.

- (3)**
- Acids are sour in taste.
  - Acid molecules contain hydrogen ion as a main constituent.
  - Acid reacts with metal to form hydrogen gas.
  - Acid reacts with carbonates and liberates carbon dioxide gas.
  - Blue litmus turns red in acid.

**(4)**

| Compound          | Type of chemical bonds |
|-------------------|------------------------|
| Cl <sub>2</sub>   | Covalent               |
| MgCl <sub>2</sub> | Ionic                  |
| HCl               | Covalent               |

|     |       |
|-----|-------|
| CaO | Ionic |
|-----|-------|

(5) If sound waves are generated in air, then the state of compression and rarefaction created in air moves away from the source.

**Q4)**

(1) The specific heat of an object is the amount of heat required to increase the temperature of unit mass of that substance through one degree.

(2) The units of in SI is Joule/kg degree C and in CKS is cal/ gm degree C.

(3) This amount (Q) depends on the mass and specific heat of the object as well as on the increase in temperature.  $Q = m \times C (T_1 - T_2)$

**(2) Blood transfusion:**

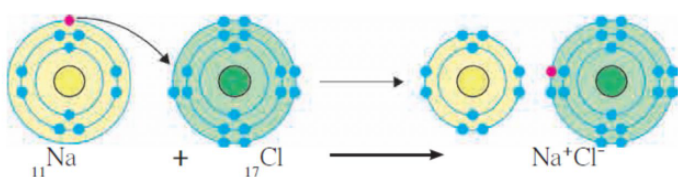
- Blood transfusion is carried out to compensate the blood shortage in body. This is called as blood transfusion.
- If a person meets an accident, bleeding occurs through wounds.
- Many times, blood transfusion is necessary during the surgical operation.
- Similarly, blood is transfused in case of patients of anaemia, thalassaemia, cancer too.
- We can get the blood for transfusion from blood banks.

**Blood banks:**

- Blood is collected in blood banks by specific method from the healthy persons and supplied to the needful persons.
- If the collected blood is not to be used immediately, it can be stored for some days in refrigerator.

(3) i. The chemical bond formed due to an electrostatic force of attraction between the oppositely charged cation and anion is called an ionic bond or an electrovalent bond.  
ii. The compound formed by means of one or more ionic bonds is called ionic compound.

Figure shows formation of Ionic bond of NaCl



- Formation of an ionic compound sodium chloride from the elements sodium and chlorine is shown with the help of diagrammatic representation of electronic configuration in the above figure.
- One ionic bond is formed due to the electrical charge +1 or -1 on an ion. The valency of an ion is equal to the magnitude of positive or negative charge on it.
- An ion forms the same number of ionic bonds as its valency.

All the Best