CBSE Board
Class VII Science
Term 2
Sample Paper - 1
Solution

Time: 3 hrs Total Marks: 100

SECTION - A

Ans1. Correct Option: [A]
Solution: Veins carry carbon dioxide rich blood from all the parts of the body back to the heart.

Ans2. Correct Option: [D]
Solution: Walnut is not a juicy fruit rather it is hard.

Ans3. Correct Option: [A]
Solution: When sludge is digested, methane gas is produced which can be used as a fuel.

Ans4. Correct Option: [A]
Solution: Food web is a network of large number of food chains existing in an ecosystem which shows the linkages among the various species.

Ans5. Correct Option: [C]
Solution: Transpiration keeps the plants cool.

Ans6. Correct Option: [D]
Solution: On Rukmavati river construction of 18 check dams are planned by N.G.O. and the villagers.

Ans7. Correct Option: [A]
Solution:

In chemical change, new products are formed.

$$Ca(OH)_2 + 2\,HCl \longrightarrow CaCl_2 + 2\,H_2O$$

Ans8. Correct Option: [A]
Solution: A change in which new substances are formed is called a chemical change.

Ans9. Correct Option: [B]
Solution: Fermenting of cheese is a chemical change.
Ans10. Correct Option: [C]
Solution: Stainless steel is an alloy of iron with chromium and nickel.

Ans11. Correct Option: [D]
Solution: Surgical instruments do not rust at all since they are made of iron mixed with nickel. This forms the stainless steel alloy.

Ans12. Correct Option: [D]
Solution: In a physical change, the chemical properties of substances do not change.

Ans13. Correct Option: [B]
Solution: Curd is made from soured milk which is a chemical change.

Ans14. Correct Option: [D]
Solution: It has four pairs of long and short parallel lines, therefore it has four cells.

Ans15. Correct Option: [B]
Solution: The coil of wire in an electric heater used for cooking is called element.

Ans16. Correct Option: [B]
Solution: When the direction of current flowing through a coil is reversed, the direction of deflection in the needle compass kept near it also gets reversed.

Ans17. Correct Option: [B]
Solution: The image is formed at the same distance as object. The image is laterally inverted. The image is virtual and erect.

Ans18. Correct Option: [D]
Solution: Reflection

Ans19. Correct Option: [D]
Solution: The wavelength range of visible light is from 4000 Å to 8000 Å.

Ans20. Correct Option: [C]
Solution: Different colours of light are refracted at different angles. This difference in the angles of refraction of different colours during refraction results in a colourful spectrum.

SECTION-B

Ans21. Sewage contains many substances in it like suspended solids, organic and inorganic impurities, nutrients, saprotrophic and disease causing bacteria and other microbes. Hence it is said to be a complex mixture.

Ans22.
A is the ureter which carries urine from kidney to urinary bladder.
B is the urinary bladder which stores urine temporarily before it is removed out from the body.

Ans23. Plants release oxygen through the process of photosynthesis which helps the animals for respiration. They also maintain the balance of oxygen and carbon dioxide in the atmosphere. That is why the forests are called green lungs.

Ans24. The top level of the underground water is called the water table.
Factors affecting water table:

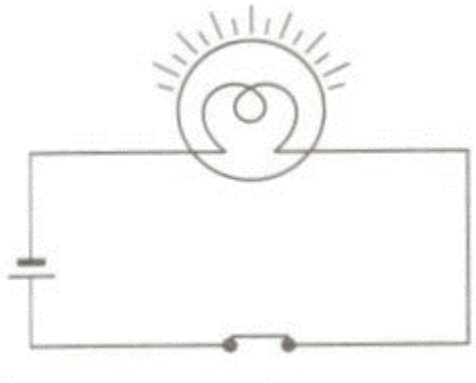
i. Average rainfall in that area.
ii. Pumping out of groundwater.

Ans25. When sugar is continuously heated in a dish, then it starts evaporating and becomes foggy due to water vapour. A black powdery substance is left behind, which is charcoal. This process is called charring of sugar. It is a chemical change as it cannot be reversed.

Ans26. In the method of galvanisation, surface of iron is covered with layer of more active metal like zinc. In this way, iron is prevented to come in contact with air and moisture which are required for rusting. Zinc metal does not undergo rusting and hence prevents the rusting of iron.

Ans27. The melting of wax is a physical change but burning of wax is a chemical change. So, the same substance wax can undergo both physical and chemical change. On melting, only change in the state of wax occurs but on burning wax, it produces carbon dioxide gas, water vapour, soot, heat and light. Hence, it is a chemical change.

Ans28.



Ans29.

(a) Convex lens.
(b) Concave lens.

Ans30. Two advantages of CFLs are:

(i) CFLs do not have filaments and do not work on heating effect of current. So, they do not waste electricity by producing heat.
(ii) CFLs can be fixed in ordinary bulb holders which are used for traditional, filament-type electric bulbs.

SECTION-C

Ans31.

(a)

(i) Seed dispersal refers to spread of seeds away from parent plant to a new growing location in order to prevent overcrowding.
(ii) When the fruits burst with sudden jerks, the seeds are dispersed and are scattered far from the parent plant.

(b)

(i) Almond and walnut
(ii) Seed coat

Ans32. Sometimes a person's kidneys may stop working due to infection or injury. This is called kidney failure due to which waste products start accumulating in the blood.

For the survival of such people, it is essential that their blood is filtered periodically through an artificial kidney. This process is called dialysis.

Ans33.

(a) Plants need water to get nutrients from the soil to prepare their food.

If water is not available to plants, plants will wilt and die and the green character of the planet shall be lost. This may mean the end of all life, since without plants; there will be many problems like no food, oxygen and not enough rain.

(b) The above figure shows drip irrigation in a field.

Ans34.

(a) Food is the source of energy and every cell of an organism gets energy by the breakdown of glucose. The cells use this energy to carry out vital activities of life. Therefore, food must be made available to every cell of an organism.

(b)

(i) Xylem transports water and nutrients in the plants.

(ii) Phloem transports food to all parts of the plant.

Ans35.

Physical Change	Chemical Change
(i) Steam condenses to form water.	(i) Log of wood burns to form ash.
(ii) Water is absorbed by a paper towel.	(ii) A bicycle chain rusts.
(iii) Dissolving sugar in water.	(iii) A piece of a mango rots on the ground.
(iv) Stretching metals to form wires.	(iv) Eggs turn into an omelet.

Ans36.

i. Formation of clouds is a physical change because it is a phase transformation of water from liquid to gas during water cycle and then, gas to liquid. Hence, only the physical properties of water undergo change in the formation of clouds.

ii. Melting of butter is a chemical change. Butter is an emulsion of fat and water. When it is heated, the emulsion breaks up and fat gets separated from water to form two layers. This fat layer separated is usually called ghee. The properties of ghee and butter are different and we cannot get back butter from ghee.

Ans37. Rusting of iron can be prevented by the following methods:

1. Galvanization: In the method of galvanization, surface of iron is covered with layer of more active metal like zinc. In this way, iron is prevented to come in contact of air and moisture which are required for rusting and zinc metal does not undergo rusting and hence, prevents the rusting of iron.
2. Chrome-plating: Chromium metal is resistant to the action of air and moisture. Hence, when a layer of chromium is deposited on an iron object, the iron object is protected from rusting.
3. Alloying: When iron is alloyed with carbon, chromium and nickel, then stainless steel is obtained. Stainless steel does not rust at all.
4. Painting: When a coat of paint is applied to the surface of an iron object, then air and moisture cannot come in contact with the iron object and hence the object is protected from rusting.

Ans38.

(a) We can make a battery from two or more cells by joining them together such that the positive terminal of one cell is always kept in contact with the negative terminal of the other cell.
(b) Applications of heating effect of current are:
   (i) It is utilised in the working of electrical heating appliances such as electric iron and geyser.
   (ii) It is utilised in electric bulbs for producing light.

Ans39.

a) If an object is placed at a distance of 10 cm in front of a plane mirror, it would be 20 cm away from its image since the image formed is at the same distance from the mirror as the object is in front of it.
b) Each colour of white light travels at a different speed in glass. This results in different colours of light being refracted at different angles.

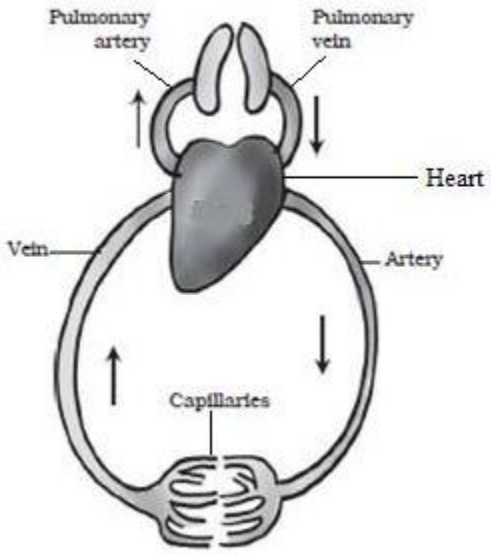
Ans40.

a) The needle in a magnetic compass is a tiny magnet which points in the north-south direction.
b) Some electrical appliances have elements in them. When they are switched on after connecting to the electric supply their elements becomes red hot and give out heat.

SECTION-D

Ans41.

(a)



(b) Haemoglobin, the red pigment of blood, binds with oxygen and transports it to all the parts of the body and ultimately to all the cells. It is present in the red blood cells of blood

Ans42.

(a)

(i) Filament and another
(ii) Cross-pollination
(iii) Fertilization

(b) In the presence of moisture, the seed swells up and the shell bursts open. Its radicle goes into the soil to form the root. The plumule grows upwards and forms the shoot of the plant.

Ans43.

i. K is baking soda. Ant stings contain formic acid and hence to neutralize its effect, a base like baking soda is applied on the stung area of the skin. It is also used in kitchen for cooking purposes.
ii. L is vinegar. It has a pungent smell and is used as a preservative in foods.
iii. Vinegar contains acetic acid. So, the acid M is acetic acid.
iv. N is a chemical change since it involves the formation of new products.
v. The gas O is carbon dioxide. Bubbles of carbon dioxide start coming out of the reaction mixture.

Ans44.

(a) Convex mirrors are used as side mirrors in scooters because convex mirrors can form images of objects spread over a large area. This helps the drivers to see traffic behind them.

(b) Concave mirrors are used:

(i) as reflectors in torches, vehicles head lights, search lights etc.

(ii) as shaving mirrors.

(iii) by dentist to see the enlarged images of the teeth.