Goa Board
Class VI Science
Term 2
Sample Paper – 3 Solution

SECTION A

1. **(d)** Vermicomposting
Vermicomposting is a process of preparing compost with the help of red worms as they loosen the soil and increase their fertility.

2. **(a)** Drought
The given image shows the condition of drought.

3. **(b)** Paper
Paper can be decomposed while composting by red worms.

4. **(c)** Cloud
Clouds are formed when many tiny droplets of water combine together.

5. **(b)** To change its direction
Flat fins and tail in fishes help it to change its direction in water.

6. **(a)** Blowholes
Whales do not have gills though they live in water, they do have special structures called blowholes through which they respire. These are located on the upper part of their head.

7. **(d)** Both handpicking and seiving
Both hand picking and sieving can be used to separate a mixture of chalk powder and iron nails.

8. **(b)** Filtration
Filtration method is used to separate insoluble solid particles in a solid-liquid mixture. The solid-liquid mixture is passed through a filter paper placed on a strainer or a funnel, the liquid passes through the filter paper leaving behind the solid particles.

9. **(c)** Evaporation
When sea water is allowed to stand in shallow pits, water gets heated by sunlight and slowly turns into water vapour through evaporation. In a few days, the water evaporates completely leaving behind the solid salts.

10. (c) Expansion in size
When iron rod is heated, it undergoes expansion in size.

11. (c) Melting wax
Changes which can be reversed to form the original substance are called reversible changes. Melted wax can be cooled to obtain solid wax. This is an example of a reversible change.

12. (b) Decreases
At higher altitudes, air gets cooler.

13. (c) Windy areas
The amount of dust particles in the air is more in windy areas as compared to other areas.

14. (c)

15. (b) They are good conductors
Copper, aluminum and other metals are good conductors of electricity; so, they are used for making connecting wires.

16. (c) Powerstation
A power station provides us with electricity.

17. (d) Both statements are correct
They both can be magnets or any one of them can be a magnet and the other can be magnetic material.

18. (c) Each part will have only one pole.
Each part will behave like a magnet, will have same the magnetic strength and will have two poles.

19. (c) Magnets should be kept in pairs with their unlike poles on the same side separatedby a piece of wood.
To prevent the magnets from getting weak, magnets should be kept in pairs with their unlike poles on the same side. They must be separated by a piece of wood while two pieces of soft iron bars should be placed across their ends.

20. (d) All the above.
You can make your own magnet by all the above processes.

SECTION B

21. We get water from taps in our homes. This water is drawn from a water body like a lake, a river or a well. It is then supplied through a network of pipes to our homes.

22.

(a) Adaptation
(b) Abiotic components

23.

(a) The packet after eating the biscuits.
(b) The banana skin.
(c) Pencil shavings.
(d) Plastic of the broken toy.

24. Features of mountain plants or trees:

i. The trees are cone-shaped and have sloping branches.
ii. They have needle-like leaves.

25. Winnowing process is shown in the given picture. This method is based on the difference in weights of the solid particles.
The mixture is allowed to fall from a height such that the heavier particles fall down closer, while the lighter particles are carried further by the wind and are collected at a distance.
Example: Separation of wheat and husk particles by farmers.

26. Potter uses wet clay to make pots of different sizes and shapes using potter's wheel. This is a reversible change because wet clay can be converted back into original clay.
The clay pots are then dried and baked to make them strong. This is an irreversible change since the baked clay pot cannot be changed back into original clay.

27. Lump of cotton wool has gaps of cotton fibres which are filled with air. When water replaces the air from these gaps, the cotton lump becomes heavy and shrinks due to removal of air gaps.

28. It is done to prevent the reaction between the hot filament of the glowing bulb with the oxygen in the air; otherwise, it would burn itself out.

29. A shepherd named Magnes, who lived in ancient Greece, discovered magnets. Magnets were discovered at a place called Magnesia.

30. Copper and aluminium are used for making wires because they are good conductors of electricity and hence, allow electric current to pass through them.

SECTION C

31.

(a) Seeds are living. For example - push your hand deep inside a sack of wheat. There is some heat being produced inside the sack of wheat because the seeds respire and give out heat. This shows that seeds are living.

(b)

i.

1. Some plants store waste products within their parts in a way that they do not harm the plant as a whole.
2. Some plants remove waste products as secretions.

ii. Biotic and abiotic factors.

32. The adaptive features for aquatic adaptation of animals are:

i. Body of aquatic animals is compressed laterally to reduce friction. This allows swift passage in the water while swimming.
ii. Fins in fish and flippers in whale help in swimming.
iii. Frogs and duck have webbed feet for swimming.
iv. Swim bladder present in certain fishes is filled with air and maintains buoyancy.

33.

(a) The safai karamcharis collect the garbage from the bins placed in our surroundings. They carry the garbage in trucks and take it to a low lying open area, called landfill.

(b) Some materials of garbage rot and get converted into compost, which acts as manure for plants. This compost, when mixed with soil, provides nutrients to plants.

34.

(a)

i. The water in the seas has many salts dissolved in it i.e. the water is saline. So, it is not fit for drinking.
ii. Water that we get from taps is drawn from a lake or a river or a well, from where it is supplied through a network of pipes to our homes.
iii. During daytime, all the air surrounding us gets heated. This warm air provides heat for evaporation of water in the shade.

(b) Salt pans are shallow pits within which sea water is left. Gradually, water evaporates, leaving the salt behind.

35. Keep this mixture in a beaker and leave the beaker aside for some time. The sand settles down at the bottom and it can be separated by decantation or filtration. The decanted liquid contains salt and water. Transfer this liquid to a kettle and close its lid. Heat the kettle for some time. Steam comes out from the spout of the kettle. Take a metal plate with some ice on it. Hold the plate just above the spout of the kettle. When the steam comes in contact with the metal plate cooled with ice, it condenses and forms liquid water.

After all the water has evaporated, salt is left behind in the kettle. By this way, we can separate a mixture of salt, sand and water using the processes of decantation, filtration, evaporation and condensation.

A mixture of kerosene and petrol cannot be separated by decantation because they are miscible liquids and decantation process cannot be used for separating miscible liquids.

36.

(a) The increase in size of an object on heating is called expansion whereas the decrease in size of an object on cooling is called contraction.

(b) The iron blade of soil-digging tools has a ring in which the wooden handle is fixed. Normally, the ring is slightly smaller in size than the wooden handle. To fix the handle, the ring is heated and it becomes slightly larger in size that is, the ring expands. Therefore, the handle easily fits into the ring. When the ring cools down, it contracts and fits tightly on to the handle.

37.

(a) Air is mainly a mixture of nitrogen and oxygen gases with small amounts of carbon dioxide, water vapour, other gases like argon and some dust particles.

Nitrogen - 78%

Oxygen - 21%

Carbon dioxide, Water vapour, other gases and dust particles - 1%

(b) The composition of air changes slightly from place to place and season to season. For example: The air in coastal areas usually has more water vapour than inland areas. The air over industrial areas usually has a higher amount of carbon dioxide than the air over open spaces.

(c) Uses of the major components of air:

i. Nitrogen - It is needed by plants to make proteins. These proteins are used by plants for their growth.

ii. Oxygen - It is necessary for burning or combustion.

38.

(a) An electric cell produces electricity from chemicals stored inside in it. When the chemicals in the electric cell are used up, it stops producing electricity.

(b) Electrical appliances such as table fans, electric lamps, washing machines, juicers and mixers, TV etc. have inbuilt switches.

39.

(a) We will require any object made of iron or steel (such as a paper clip). The steel bar to which this object gets attracted will be a magnet.

(b) The compass is kept at a place where we want to know the directions. Its needle indicates the north-south direction when it comes to rest. The compass is then rotated until the north and south marked on the dial are at the two ends of the needle.

40.

(a) The circuit shown here is an open circuit.
The bulb will not glow in such an arrangement because the two terminals of the wire are not connected to each and thus, it will not allow the electricity to flow through it.

(b) The metal disc is the negative terminal.

SECTION D

41.

(a) The technique shown here is 'rooftop rainwater harvesting".
In this system, the rainwater is collected from the rooftop to a storage tank, through pipes. This water may contain soil from the roof and need filtration before it is used. Instead of collecting rainwater in the tank, the pipes can go directly into a pit in the ground. This then seeps into the soil to recharge or refill the ground water.

(b) The demand for water is increasing day-by-day due to increasing population. This leads to shortage of water in many parts of the world. Also, the amount of usable water on the earth is limited. Hence, we should use water carefully.

42. Tear the paper to be recycled into small pieces and submerge these paper pieces for a day in water. Make a thick paste of paper by pounding it. Spread the wet paste uniformly on the wire mesh fixed to frame and drain off water. Remove the layer of paste carefully from the frame; spread it on a sheet of newspaper in the sun. Keep the corners of the newspaper sheet pressed to prevent it from curling up. If needed, add materials like food colour or flower petals in the paste to get recycled paper with beautiful patterns on it.

43.

(a) Gas M is Carbon dioxide.

(b) The percentage of Carbon dioxide gas in air is 0.03%.

(c) Carbon dioxide is added to the atmosphere by:

i. Respiration of animals and plants

ii. Burning of fuels

(a) Carbon dioxide is used by plants for making food by photosynthesis and this food is used by both, plants and human beings.

44.

(a) An electromagnet is fitted to the long arm of a crane. This long arm of the crane is lowered over a heap of waste material. When the electromagnet is switched on, the iron junk from the garbage sticks to the electromagnet. Then, the arm is lifted up and moved to another place where the iron junk is dropped by switching off the electromagnet.

(b) While storing bar magnets, they should be kept in pairs with their unlike poles on the same side. They must be separated by a piece of wood while two pieces of soft iron should be placed across their ends.