CBSE Board
Class VII Science
Sample Paper – 1
Term II

Time: 2 ½ hrs **Total Marks: 80**

General Instructions:

1. The question paper consists of 34 questions and is divided into four sections, A, B, C and D.
2. All questions are compulsory.
3. Section A comprises question numbers 1 to 15. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
4. Section B comprises question numbers 16 to 22. These are SAQs carrying two marks each.
5. Section C comprises question numbers 23 to 31. These are SAQs carrying four marks each.
6. Section D comprises question numbers 32 to 34. These are SAQs carrying five marks each.

SECTION A

1. The vessels which carry carbon dioxide rich blood from all the parts of the body back to the heart are called [1]

(a) Veins
(b) Arteries
(c) Capillaries
(d) Valves

2. Why does the temperature increase as the day advances? (1)

(a) Due to slanting sun rays
(b) Due to perpendicular sun rays
(c) Due to inclined sun rays
(d) Due to global warming

3. What do we call the network of several food chains connecting each other? [1]

(a) Food web
(b) Food chain
(c) Food cycle
(d) Trophic level

4. We tend to feel hungrier after (1)

(a) Standing
(b) Exercise
(c) Resting
(d) Sleeping

5. In Gujarat, construction of 18 check dams is being planned by an N.G.O. and the villagers on which of the following rivers? [1]

(a) Saraswati River
(b) Ganga River
(c) Yamuna River
(d) Rukmavati River

6. Neutralisation of calcium hydroxide with hydrochloric acid is an example of [1]

(a) Chemical change
(b) Physical change
(c) Both chemical and physical change
(d) No change

7. Stainless steel is an alloy of iron with [1]

(a) Zinc
(b) Aluminium
(c) Chromium and nickel
(d) Chromium and copper

8. Surgical instruments do not rust at all since they are made of [1]

(a) Iron mixed with Zinc
(b) Iron mixed with lead
(c) Iron mixed with copper
(d) Iron mixed with nickel

9. Pick a good conductor of heat from the following. (1)

(a) Aluminium
(b) Plastic
(c) Wood
(d) Rubber

10. The air near the source of heat (1)

(a) Rises away from the source
(b) Moves closer to the source
(c) Remains in the same place
(d) Moves randomly

11. When the direction of current flowing through a coil is reversed, the direction of deflection in the needle compass kept near it _____. [1]

(a) remains unaffected
(b) gets reversed
(c) points north-south
(d) points east-west

12. Which of the following statements is true about a plane mirror? [1]

1. The image is larger in size than the object.
2. The image is formed at the same distance as object.
3. The image is laterally inverted.
4. The image is virtual and erect.

(a) 1, 2, 3
(b) 2, 3, 4
(c) 1, 3, 4
(d) 1, 2, 3, 4

13. The phenomenon of bouncing back of light falling on a smooth polished surface is known as _____. [1]

(a) Refraction
(b) Absorption
(c) Polarization
(d) Reflection

14. What is the wavelength range of visible light? [1]

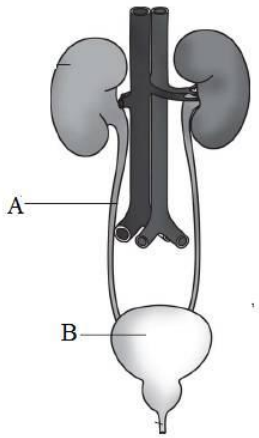
(a) 1000 - 5000 Å
(b) 2000 - 6000 Å
(c) 3000-7000 Å
(d) 4000-8000 Å

15. Formation of spectrum by a glass prism takes place because [1]

(a) light of different colors has different intensities.
(b) light of different colors has different frequencies.
(c) light of different colors refracts with different angles of refraction.
(d) light of different colors has different energies.

SECTION B

16. What is the importance of the parts labeled 'A' and 'B' in the below figure? [2]



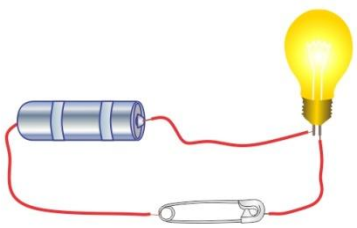
17. Why forests are called green lungs? [2]

18. What do you understand by water table? Name the factors that affect the water table. [2]

19. Explain how galvanization of an iron object prevents it from rusting? [2]

20. The same substance can undergo a physical change or a chemical change depending upon the conditions. Explain with an example. [2]

21. Draw a circuit diagram for the following electric circuit: [2]



22. Give two advantages of CFLs. [2]

SECTION C

23. [4]

(a)

i. What do you understand by seed dispersal?

ii. What happens to the seeds when fruits burst with sudden jerks?

(b) Name the following:

i. Two hard fruits.

ii. The protective structure enclosing the embryo.

24.

(i) Explain how an insect gets trapped in the pitcher plant? [4]

(ii) How do fungi germinate?

25. [4]

(a) Why it is essential that food must be made available to every cell of the plant?

(b) Write the function of:

i. Xylem

ii. Phloem

26. Consider the following salts: [4]

Sodium sulphate, Sodium carbonate, Ammonium sulphate

The aqueous solution of which of these salts will:

(a) Turn blue litmus to red?

(b) Turn phenolphthalein to pink?

(c) Turn China rose indicator to green?

(d) Have no effect on any indicator?

Give reasons for your answers.

27. Explain the following with reasons: [4]

(a) Formation of clouds is a physical change.

(b) Melting of butter to make ghee is a chemical change.

28. Explain any four methods of preventing rusting of iron. [4]

29. [4]

(i) What is difference between conduction and convection?

(ii) It is hotter at the same distance over the top of a fire than it is on the side of it. Why?

30. [4]

(a) If an object is placed at a distance of 10 cm in front of a plane mirror, how far would it be from its image?

(b) Why do different colours of light refract at different angles in the formation of a spectrum?

31. [4]

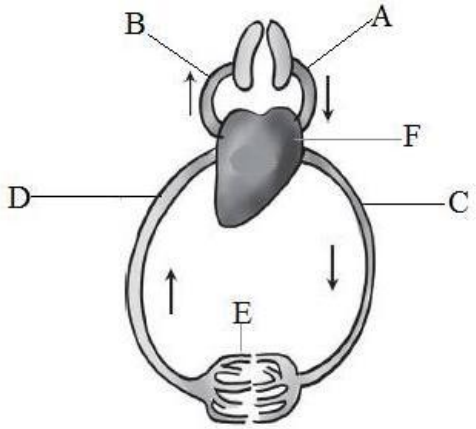
(a) What is the function of needle in a magnetic compass?

(b) Some electrical appliances have elements in them. How do you notice that they have become hot?

SECTION D

32.

(a) Label the parts shown as A-F in the below schematic diagram of circulation. [5]



(b) What is the function of the red pigment of blood? Where is this pigment present in blood?

33. When an ant stings a person, the solution of substance K is rubbed on the stung area of the skin to get relief from pain. The substance K is also used in kitchen for cooking purposes. Another substance L is sour in taste and contains an organic acid M. It is pungent smelling and is used as a preservative in foods. When a solution of K is mixed with L, then a change N takes place to produce bubbles of gas O. [5]

(a) Identify K.

(b) What is substance L?

(c) Name the acid M.

(d) What type of change is N?

(e) Name the gas O.

34. Give reasons for the following. [5]

(a) Which mirrors are used as side mirrors in scooters? Give reason.

(b) Mention any three uses of concave mirrors.

CBSE Board
Class VII Science
Sample Paper – 1 Solution
Term II

SECTION A

1. (a)
Veins carry carbon dioxide rich blood from all the parts of the body back to the heart.

2. (b)
The temperature increases as the day advances due to perpendicular Sun rays.

3. (a)
Food web is a network of a large number of food chains existing in an ecosystem which shows the linkage among various species.

4. (b)
During any physical activity or exercise, oxygen gets used up faster and a temporary deficiency of oxygen occurs on our muscle cells. Hence, we tend to feel hungry to meet the increased energy demands.

5. (d)
On Rukmavati river, the construction of 18 check dams is being planned by an N.G.O. and the villagers.

6. (a)
A change in which one or more new substances are formed is called a chemical change.
The reaction will be:
$Ca(OH)_2 + 2HCl \rightarrow CaCl_2 + 2H_2O$

7. (c)
Stainless steel is an alloy of iron with chromium and nickel.

8. (d)
Surgical instruments do not rust at all since they are made of iron mixed with nickel. This forms the stainless steel alloy. It is a non-corrosive metal.

9. (a)
Aluminium is a good conductor of heat. Others are bad conductors of heat.

10. (a)
The air near the source of heat rises away from the source.

11. (b)

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.

12. (b)

The image is formed at the same distance as object. The image is laterally inverted. The image is virtual and erect.

13. (d)

The phenomenon of bouncing back of light falling on a smooth polished surface is known as reflection.

14. (d)

The wavelength range of visible light is from 4000 Å to 8000 Å.

15. (c)

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

16. A is the ureter which carries urine from the kidney to the urinary bladder.

B is the urinary bladder which stores urine temporarily before it is removed out from the body.

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

18. The top level of underground water is called the water table.

Factors affecting the water table:

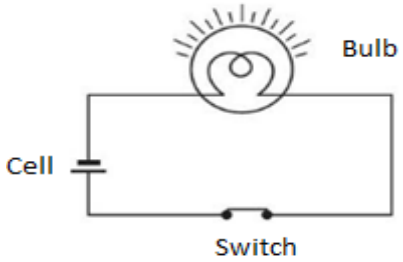
i. Average rainfall in that area.
ii. Pumping out of groundwater.

19. In the method of galvanization, surface of iron is coated with the layer of a more active metal such as zinc.

Zinc metal prevents the surface of iron from coming in contact with air and moisture and protects it from rusting.

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

21.



22. 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

23.

(a)

i. Seed dispersal refers to a spread of seeds away from the 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.

24.

(i) Inside the pitcher of the pitcher plant, there is hair which is directed downwards. When an insect lands on the pitcher, the lid closes automatically. The trapped insect gets entangled in the hair of the pitcher and thus cannot escape. After some time, the insect dies in the pitcher.

(ii) The tiny fungal spores are generally present in the air. When they land on a wet and warm surface, they germinate and grow.

25.

(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.

26.

(a) Ammonium sulphate solution will turn blue litmus to red because it is acidic in nature.

(b) Sodium carbonate solution will turn phenolphthalein to pink because it is basic in nature.

(c) Sodium carbonate solution will turn China rose indicator to green because it is basic in nature.

(d) Sodium sulphate solution will have no effect on any indicator because it is neutral in nature.

27.

(a) Formation of clouds is a physical change because it is a phase of 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.

(b) 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 butter back from ghee.

28. Rusting of iron can be prevented using the following methods:

i. **Galvanization**: In this method, the surface of iron is coated with a layer of a more active metal such as zinc.
Zinc metal prevents the surface of iron from coming in contact with air and moisture and protects it from rusting.

ii. **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.

iii. **Alloying**: When iron is alloyed with carbon, chromium and nickel, stainless steel is obtained. Stainless steel does not rust at all.

iv. **Painting**: When a coat of paint is applied to the surface of an iron object, it prevents it from coming in contact with air and moisture and protects it from rusting.

29.

(i) In conduction, matter is not transported with heat; while in convection, matter is transported with the heat.

(ii) Convection takes more heat upwards. Towards the top, the air gets heated by convection. Therefore, the hand above the flame feels hot. On the sides, however, there is no convection and air does not feel as hot as at the top.

30.

(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.

31.

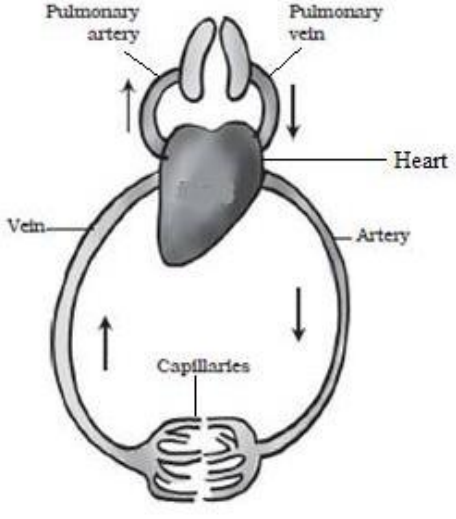
(a) The needle in a magnetic compass is a tiny magnet which points in the north-south direction.

(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

32.

(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

33.

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.

34.

(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.