

CBSE Board
Class VII Science
Term 2
Sample Paper - 3
Solution

Time: 3 hrs

Total Marks: 100

SECTION-A

Ans1. Correct Option: [A]

Solution: The drumstick plant i.e. Moringa produces winged seeds which can be easily carried by wind.

Ans2. Correct Option: [A]

Solution: During sedimentation, chemicals such as alum are added to the water. This allows the particles floating in the water to stick together and form lump and thereby settle to the bottom of the tank.

Ans3. Correct Option: [D]

Solution: Urinary bladder stores the urine before it is eliminated out of the body.

Ans4. Correct Option: [B]

Solution: Platelets form the blood clot.

Ans5. Correct Option: [A]

Solution: Carbon dioxide increases the earth's temperature and leads to global warming.

Ans6. Correct Option: [B]

Solution: When rain falls some of the water seeps through the soil. This process is called Infiltration.

Ans7. Correct Option: [C]

Solution: Physical changes are reversible temporary changes in which no new substance is formed. Very little energy is absorbed or given out.

Ans8. Correct Option: [C]

Solution: Coal burns to produce carbon dioxide, water, ashes and energy. A change in which new substances are formed is called a chemical change.

Ans9. Correct Option: [D]

Solution: Physical changes are generally reversible changes in the physical properties of substances. No new substances are formed in these changes.

Ans10. Correct Option: [A]

Solution: The appearance of rust is like a reddish brown flaky substance.

Ans11. Correct Option: [A]

Solution: Heating changes the chemical properties of corn and thus it is a chemical change.

Ans12. Correct Option: [B]

Solution: Rusting of iron is an example of chemical change.

Ans13. Correct Option: [B]

Solution: During a physical change, no new substance is formed. The process of boiling does not involve formation of any new substance.

Ans14. Correct Option: [A]

Solution: The symbol shows an electric cell.

Ans15. Correct Option: [B]

Solution: An electric bulb works on the principle of heating effect of electric current

Ans16. Correct Option: [B]

Solution: When the switch is moved to ON position, the current flows through the circuit and hence a magnetic field is produced near it due to which the needle shows deflection and retains this deflection as long as current passes through the coil. Once the current is switched off it comes back to its original position.

Ans17. Correct Option: [C]

Solution: Hans Christian Oersted was the first person to notice the deflection of compass needle every time the current was passed through the wire kept near it.

Ans18. Correct Option: [A]

Solution: $1+2+3 = 6$

Ans19. Correct Option: [C]

Solution: A straight line passing through the geometric centre of the spherical mirror and the focus is called the principal axis of the mirror.

Ans20. Correct Option: [C]

Solution: They have wider range of view than a plane mirror

SECTION-B

Ans21. 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.

Ans22. A network of big and small pipes passing through the ground called sewers for bringing clean water and taking away waste water forms the sewerage.

It carries sewage from the point of being produced to the point of disposal, i.e. treatment plant.

Ans23.

- (i) Canopy
- (ii) Decomposers
- (iii) Humus
- (iv) Food chain

Ans24. Plants get benefit by seed dispersal in the following ways:

- (i) It prevents competition between the plant and its own seedlings for sunlight, water and minerals.
- (ii) It also enables the plants to invade new habitats for wider distribution.

Ans25. Formation of clouds is a physical change as it is phase transformation of water from liquid to gas during water cycle and then, gas to liquid. Hence, the physical property of water undergoes change in the formation of clouds.

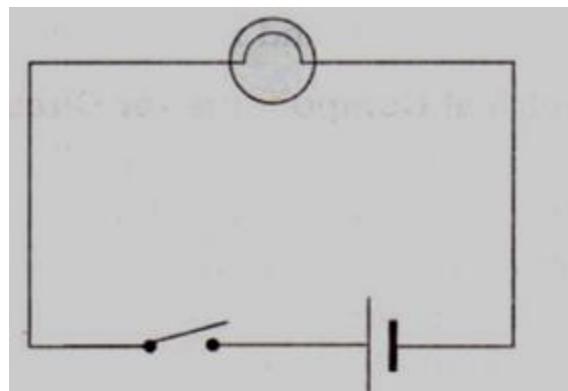
Ans26. Digestion is a process where food nutrients such as carbohydrates, proteins, fats and other materials are broken down into simpler substances with release of energy. New substances are formed thus digestion is a chemical change.

Ans27. Crystallisation is the process of obtaining large crystals of pure substances from their solution.

Crystallisation is a technique used to purify solid compounds.

Ans28. An object which does not allow light to pass through it is called an opaque object. E.g., book, wooden table etc.

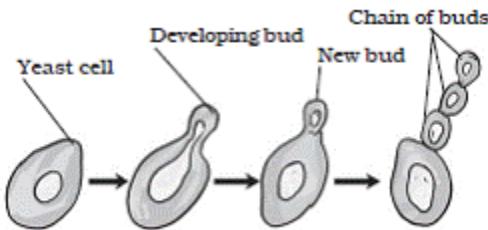
Ans29. The circuit diagram is shown below:



Ans30. It shows that the image formed is erect and is of same size as the object.

SECTION-C

Ans31. Yeast is a single celled organism which when provided with nutrients and the right temperature, gives out a small bulb-like projection called bud. The bud gradually grows and gets detached from the parent cell and forms a new yeast cell. The new yeast cell grows, matures and produces more yeast cells. This process continues to form a large number of yeast cells in a short time.



Ans32.

Artery	Vein	Capillary
i. Thick-walled. ii. Carry oxygen-rich blood from the heart to other parts of the body.	i. Thin-walled. ii. Carry carbon dioxide-rich blood from different organs to the heart.	i. Thin-walled. ii. Capillaries are involved in the exchange of food material, respiratory gases, and body wastes.

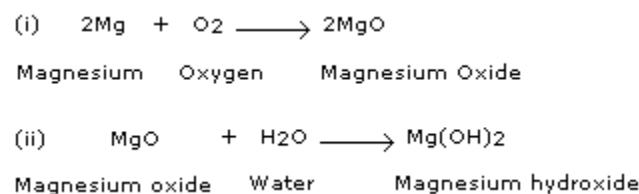
Ans33.

- (a) Flowers are generally very colourful and fragrant so as to attract insects. Insects are very important in bringing about pollination. Insects visit flowers and carry away pollens on their bodies. When they visit another flower of the same kind, some of the pollens lands on the stigma of that flower and brings about pollination.
- (b) A zygote is formed by the fusion of male and female gamete. It develops into an embryo.

Ans34.

- (a) On a hot summer day, we sweat a lot. Sweat contains water and salts. The water of sweat evaporates, leaving behind the salts which appear as white patches on our clothes.
- (b) Birds and lizards excrete a semi-solid, white coloured compound, the uric acid.

Ans35. Both these changes are chemical changes and can be represented by following equation:



Test magnesium oxide solution with blue litmus paper and red litmus paper respectively. Take a strip of blue litmus paper and put a drop of magnesium oxide solution on it. The blue colour of the litmus paper will not change to red hence, magnesium oxide solution is not acidic in nature. Now, take a strip of red litmus paper and put a drop of magnesium oxide solution on it. The red colour of the litmus paper will change to blue showing that magnesium oxide solution is basic in nature.

Ans36.

- (a) The rusting of iron is faster in coastal areas because the air at those places contains more water vapour i.e. the air has a high moisture content.
- (b) Experiment to show that rusting of iron requires both air and water.

We take three test tubes and put clean iron nail in each of them.

1. In the first test tube containing iron nail, we put some anhydrous calcium chloride and closed its mouth with a tight cork. The anhydrous calcium chloride is added to absorb water or moisture from the damp air present in the test tube and make it dry. In this way, the iron nail in the first test tube is kept in dry air. This test tube is kept aside for about half an hour. After one week, we observe that there is no rust on the surface of iron nail. This shows that rusting of iron does not take place in air alone.
2. In the second test tube containing iron nail, we put boiled distilled water. Boiled distilled water does not contain any dissolved air or oxygen in it. A layer of oil is put over boiled water in the test tube to prevent the outside air from mixing with boiled water. In this way, the iron nail in the second test tube is kept in air free, boiled water. The mouth of this test tube is closed with a cork and it is kept aside for about a week. After one week, we observe that no rust is there on the surface of iron nail. This shows that rusting of iron does not take place in water alone.
3. In the third test tube containing an iron nail, we put unboiled water so that about two-thirds of the nail is immersed in water and the rest is above the water, exposed to damp air. In this way, the iron nail has been placed in air and water together. The mouth of this test tube is closed with a cork and it is kept aside for about a week. After one week, we observe that red brown rust is seen on the surface of iron nail kept in the presence of both air and water.

Ans37.

Physical changes	Chemical changes
1. In a physical change, only physical properties such as physical state, colour, volume etc. of the reacting substance undergo change. Chemical properties remain unchanged.	1. In a chemical change, the chemical composition and chemical properties of the reacting substances undergo change.
2. No new substance is formed.	2. One or more new substances are formed.
3. These are temporary changes that can be easily reversed.	3. These are permanent changes and cannot be reversed back.
4. The original form of the substance can be obtained easily by simple physical methods.	4. The original substances cannot be obtained by simple physical methods.

Ans38.

- (i) Take chess board.
- (ii) Fix a plane mirror vertically at one of its edge.
- (iii) Place any object like pencil sharpner at the boundary of third square counting from the mirror.
- (iv) Note the position of the image. Now shift the object to the boundary of the fourth square. Again note the position of the image.
- (v) In both the cases we will find that the image is at the same distance behind the mirror as the object is in front of it.

Ans39.

- (i) Take a long piece of insulated wire and an iron nail.
- (ii) Wind the wire tightly around the nail.
- (iii) Connect the free ends of the wire to the terminals of a cell through a switch.
- (iv) Place some pins on or near the end of the nail and switch on the current. The pins cling to the tip of the nail.
- (v) The coil behaves like a magnet till the current flows through it.

Ans40.

- (a)
- (i) Concave mirror
 - (ii) Convex mirror
- (b) White light consists of seven colours. These colours are: red, orange, yellow, green, blue, indigo and violet.

SECTION-D**Ans41.**

- (a)
- A - Germinating pollen grain
 - B - Pollen tube
 - C - Zygote formation
 - D - Ovum
- (b) A pistil consists of stigma, style and ovary.
- (c) After pollination, the pollen grains germinate on the stigma. A thin pollen tube grows down from the pollen grain which penetrates the stigma, passes through the style and then enters the ovule. It carries two male gametes which fuses with the female gamete.

Ans42.

- (a)
- i. Stethoscope - It amplifies the sound of the heart, hence doctors can feel the heartbeats of the patient and get clues about the heart condition.
 - ii. Atrium - It receives blood from various parts of the body.
 - iii. Ventricle - It supplies blood to different parts of the body.
- (b) The region marked 'E' is the partition between the chambers, called septum. It helps to avoid mixing up of blood rich in oxygen with the blood rich in carbon dioxide.

Ans43.

- (i)
- Melting of ice: During this change, the water changes from its solid form to liquid form. It can be solidified again. The water remains water in both cases hence this is a reversible change.
 - Lightening of an electric bulb: During this change, electricity is passed through the filament which becomes white hot and glows, but when switch is off, the filament returns to its original shape and condition, hence it is totally reversible.
- (ii) The ozone layer protects us from the harmful UV radiations coming from the sun. Ozone absorbs these radiations and breaks them down to form oxygen. Yes, the breaking down of ozone into oxygen is a chemical change since ozone and oxygen have different chemical properties. New products are formed in the reaction.
- (iii) The burning of magnesium ribbon is a chemical change because a new substance, magnesium oxide, is formed during the reaction.

Ans44.

- When an electric current is passed through a high resistance wire (like nichrome wire), the resistance wire becomes hot and produces heat. This is called the heating effect of current.
- This is because of the fact that the fine tungsten filament has a very high resistance whereas copper connecting wires have very low resistance.
- A key or a switch can be placed anywhere in an electric circuit.