पु॰ना International School

Shree Swaminarayan Gurukul, Zundal

Class -VII

Science

Assignment (SA 1)

Year- 2020-21

MULTIPLE CHOICE QUESTIONS

1. Given below from (i) to (iv) are some food items.

(i) Boiled and mashed potato

(ii) Glucose solution

(iii) A slice of bread

(iv) Mustard oil

2. Which of the above will give blue-black colour when tested with iodine?

(a) (i) and (ii)

(b) (i) and (iii)

(c) (ii) and (iii)

(d) (iii) and (iv)

Ans. (b) The iodine will turn from red/yellow colour to a blue-black colour in case of boiled and mashed potato as well as slices of bread due to presence of starch in them.

3. Which of the following pair of teeth differ in structure but are similar in function?

(a) canines and incisors.

(b) molars and premolars.

(c) incisors and molars.

(d) premolars and canines.

Ans. (b) Molars and premolars are the pair of teeth that differ in structure but are similar in function i.e. tearing and crushing the food.

4. Read carefully the terms given below. Which of the following set is the correct combination of organs that do not carry out any digestive functions?

(a) Oesophagus, Large Intestine, Rectum

(b) Buccal cavity, Oesophagus, Rectum

(c) Buccal cavity, Oesophagus, Large Intestine

(d) Small Intestine, Large Intestine, Rectum

Ans. (a) The food that is swallowed passes through the oesophagus and is pushed down by the contraction of muscles in the wall of the oesophagus. The large intestine absorbs water and some salts from the remaining undigested food which then passes to the rectum and remains there as semi-solid faeces.

5. The swallowed food moves downwards in the alimentary canal because of

(a) force provided by the muscular tongue.

(b) the flow of water taken with the food.

(c) gravitational pull.

(d) the contraction of muscles in the wall of food pipe.

Ans. (d) The food that is swallowed passes through the oesophagus and is pushed down by the contraction of muscles in the wall of the oesophagus.

6. The acid present in the stomach

(a) kills the harmful bacteria that may enter along with the food.

(b) protects the stomach lining from harmful substances.

(c) digests starch into simpler sugars.

(d) makes the medium alkaline.

Ans. (a) The acid present in the stomach kills most of the bacteria entering along with the food and makes the medium in the stomach acidic and helps the digestive juices to act.

7. The finger-like outgrowths of Amoeba helps to ingest food. However, the finger-like outgrowths of human intestine helps to

(a) digest the fatty food substances.

(b) make the food soluble.

(c) absorb the digested food.

(d) absorb the undigested food.

Ans. (c) The finger-like outgrowths present in the inner walls of the small intestine are called villi that increase the surface area for better absorption of the digested food.

8. The rearing of silkworms for obtaining silk is called

(a) cocoon

(b) silk

(c) sericulture

(d) silviculture

Ans. (c) The rearing of silkworms for obtaining silk is called sericulture.

9. Which of the following is not a type of silk?

(a) Mulberry silk

(b) Tassar silk

(c) Mooga silk

(d) Moth silk

Ans. (d) Moth silk is not a type of silk.

10. Paheli wanted to buy a gift made of animal fibre obtained without killing the animal. Which of the following would be the right gift for her to buy?

(a) Woollen shawl

(b) Silk scarf

(c) Animal fur cap

(d) Leather jacket

Ans. (a) Woollen shawl would be the best gift as wool is obtained from the fleece of sheep which is removed along with a thin layer of skin from its body without causing any harm to the sheep. This process is called shearing.

11. Silk fibre is obtained from

(a) fleece of sheep

(b) cotton ball

(c) cocoon

(d) shiny jute stalk

Ans. (c) Conversion of caterpillar to pupa involves a weaving of net around itself. It swings from side to side in the form of the figure of 8 and secretes a fibre made of a protein which gets hardened on exposure to air and becomes silk fibre that completely covers the caterpillar. This covering is known as cocoon. Silk fibre is obtained from this cocoon.

12. Wool fibre cannot be obtained from which of the following?

(a) Goat

(b) Llama

(c) Alpaca

(d) Moth

Ans. (d) Silk is obtained from moth, wool is not.

13. A marble tile would feel cold as compared to a wooden tile on a winter morning, because the marble tile

(a) is a better conductor of heat than the wooden tile.

(b) is polished while wooden tile is not polished.

(c) reflects more heat than wooden tile.

(d) is a poor conductor of heat than the wooden tile.

Ans. (a) is a better conductor of heat than the wooden tile.

14. A beggar wrapped himself with a few layers of newspaper on a cold winter night. This helped him to keep himself warm because

(a) friction between the layers of newspaper produces heat.

(b) air trapped between the layers of newspaper is a bad conductor of heat.

(c) newspaper is a conductor of heat.

(d) newspaper is at a higher temperature than the temperature of the surrounding.

Ans. (b) air trapped between the layers of newspaper is a bad conductor of heat.

15. Paheli and Boojho measured their body temperature. Paheli found her's to be 98.6 °F and Boojho recorded 37°C. Which of the following statement is true?

(a) Paheli has a higher body temperature than Boojho.

(b) Paheli has a lower body temperature than Boojho.

(c) Both have normal body temperature.

(d) Both are suffering from fever.

Ans. (c) Both have normal body temperature.

16. Boojho has three thermometers as shown in Figure 4.1. He wants to measure the temperature of his body and that of boiling water. Which thermometer (s) should he choose?

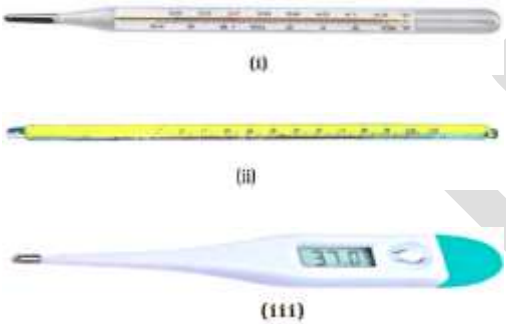


Fig. 4.1

(a) Thermometer (i) or (iii) for measuring body temperature and (ii) for measuring the temperature of boiling water.

(b) Thermometer (i) for measuring temperature of both.

(c) Thermometer (ii) for measuring temperature of both.

(d) Thermometer (iii) for measuring temperature of both.

Ans. (a) Thermometer (i) or (iii) for measuring body temperature and (ii) for measuring the temperature of boiling water.

Explanation: Thermometer (i) is a clinical thermometer and (iii) is a digital thermometer and both are used for measuring body temperature where as (ii) one is laboratory thermometer used for measuring the temperature of boiling water.

17. Four arrangements to measure temperature of ice in beaker with laboratory thermometer are shown in Figure 4.2 (a, b, c and d). Which one of them shows the correct arrangement for accurate measurement of temperature?

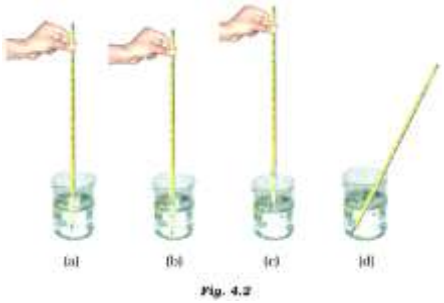


Fig. 4.2

Ans. (a)

18. The correct way of making a solution of acid in water is to

(a) add water to acid.

(b) add acid to water.

(c) mix acid and water simultaneously.

(d) add water to acid in a shallow container.

Ans. (b) The process of adding acid and water is highly exothermic reaction. Acid must be added to water with constant stirring. This is due to the fact that if instead of adding acid to water one adds water to acid then the resulting reaction is highly exothermic producing tremendous heat that may even cause burns.

19. Products of a neutralisation reaction are always

(a) an acid and a base.

(b) an acid and a salt.

(c) a salt and water.

(d) a salt and a base.

Ans. (c) Acids and bases react with each other to nullify the effect of each other leading to the production of salt and water.This is known as a neutralisation reaction.

20. Turmeric is a natural indicator. On adding its paste to acid and base separately, which colours would be observed

(a) Yellow in both acid and base.

(b) Yellow in acid and red in base.

(c) Pink in acid and yellow in base.

(d) Red in acid and blue in base.

Ans. (b) Turmeric is a natural indicator. On adding its paste to acid and base separately it gives yellow in acid and red in base.

21. Phenolphthalein is a synthetic indicator and its colours in acidic and basic solutions, respectively are

(a) red and blue.

(b) blue and red.

(c) pink and colourless.

(d) colourless and pink

Ans. (d) Phenolphthalein is a synthetic indicator and its colour in acidic and basic solutions is colourless and pink respectively.

22. When the soil is too basic, plants do not grow well in it. To improve its quality what must be added to the soil?

(a) Organic matter

(b) Quick lime

(c) Slaked lime

(d) Calamine solution

Ans. (a) Plants do not grow well when the soil is either too acidic or too basic. If the soil

is basic, organic matter is added to it. Organic matter releases acid which neutralises the basic nature of the soil.

23. ‘Litmus’, a natural dye is an extract of which of the following?

(a) China rose (Gudhal)

(b) Beetroot

(c) Lichen

(d) Blue berries (Jamun)

Ans. (c) 'Litmus’, a natural dye is an extract of lichens.

24. Which of the following is a physical change?

(a) Rusting of iron

(b) Combustion of magnesium ribbon

(c) Burning of candle

(d) Melting of wax

Ans: (d) Melting of wax

25. Which of the following is a chemical change?

(a) Twinkling of stars

(b) Cooking of vegetables

(c) Cutting of fruits

(d) Boiling of water

Ans: (b) Cooking of vegetables

26. A chemical change may involve :

(a) change in colour only

(b) change in temperature only

(c) evolution of gas only

(d) any or all of the above

Ans: (d) any or all of the above

26. Which of the following is/are true when milk changes into curd?

(i) Its state is changed from liquid to semi-solid.

(ii) It changes colour.

(iii) It changes taste.

(iv) The change cannot be reversed.

Choose the correct option from below:

(a) (i) and (ii) are correct

(b) (ii) and (iii) are correct

(c) (i), (iii) and (iv) are correct

(d) (i) to (iv) are correct

Ans: (c) (i), (iii) and (iv) are correct

27. A man painted his main gate made up of iron to:

(i) prevent it from rusting.

(ii) protect it from sun.

(iii) make it look beautiful.

(iv) make it dust-free.

Which of the above statement(s) is/are correct?

(a) (i) and (ii)

(b) (ii) and (iii)

(c) only (ii)

(d) (i) and (iii)

Ans: (d) (i) and (iii)

28. A solution changes the colour of turmeric indicator from yellow to red. The solution is

(a) basic

(b) acidic

(c) neutral

(d) either neutral or acidic

Ans. (a) Turmeric is a natural indicator. On adding its paste to acid and base separately it gives yellow in acid and red in base. Since the colour changes to red, this shows the basicity of the solution.

29. Which of the following set of substances contain acids?

(a) Grapes, lime water

(b) Vinegar, soap

(c) Curd, milk of magnesia

(d) Curd, vinegar

Ans. (d) Curd contains lactic acid and vinegar contains acetic acid.

30. The microorganisms present in the soil requires moisture (water) and nutrients for growth and survival. Choose from the options given below, the habitat (place) where soil has plenty of water and nutrients.

(a) Desert

(b) Forest

(c) Open field

(d) Cricket ground

Ans: (b) Forest

31. Availability of water and minerals in the soil for maximum absorption by roots is in the:

(a) B-horizon

(b) C-horizon

(c) A-horizon

(d) surface of soil

Ans: (c) A-horizon

32. Soil conservation measures are mainly aimed at protecting which of the following?

(a) Plants

(b) Top soil

(c) Sub soil

(d) Soil organisms

Ans: (b) Top soil

33. Read the following statements with reference to soil:-

(i) Weathering is a very fast process of soil formation.

(ii) Percolation of water is faster in sandy soils.

(iii) Loamy soil contains only sand and clay.

(iv) Top soil contains the maximum amount of humus.

Choose the correct statements from the above.

(a) (ii) and (iv)

(b) (i) and (iii)

(c) (ii) and (iii)

(d) (i) and (ii)

Ans: (a) (ii) and (iv)

(34)A wooden spoon is dipped in a cup of ice cream. Its other end

(a) becomes cold by the process of conduction.

(b) becomes cold by the process of convection.

(c) becomes cold by the process of radiation.

(d) does not become cold.

Ans (d) does not become cold.

(35)Stainless steel pans are usually provided with copper bottoms. The reason for this could be that

(a) Copper bottom makes the pan more durable.

(b) Such pans appear colourful.

(c) Copper is better conductor of heat than the stainless steel.

(d) copper is a better conductor of heat than the stainless steel.

Ans(c) Copper is better conductor of heat than the stainless steel.

❖ Fill in the blanks.

(1) The main steps of digestion in humans are **ingestion**, **digestion**, **absorption**, **assimilation** and **egestion**.

(2) The largest gland in the human body is **liver**.

(3) The stomach releases hydrochloric acid and **digestive** juices which act on food.

(4) The inner wall of the small intestine has many finger-like outgrowths called **villi**.

(5) Amoeba digests its food in the **food vacuole**.

(6) The hotness of an object is determined by its **temperature**.

(7) Temperature of boiling water cannot be measured by a **clinical** thermometer.

(8) Temperature is measured in degree **Celsius**.

(9) No medium is required for transfer of heat by the process of **radiation**.

(10) A cold steel spoon is dipped in a cup of hot milk. It transfers heat to its other end by the process of **conduction**.

(11) Clothes of **dark** colours absorb heat better than clothes of light colours.

(12) When carbon dioxide is passed through lime water, it turns milky due to formation of **calcium carbonate**.

(13)The chemical name of baking soda is **sodium hydrogen carbonate**.

(14) Two methods by which rusting of iron can be prevented are **painting** and **galvanization**.

(15) Changes in which only **physical** properties of a substance change are called physical changes.

(16) Changes in which new substances are formed are called **chemical** changes.

❖ Indicate whether the following statements are True (T) or False (F).

(1) Cutting a log of wood into pieces is a chemical change. (T/**F**)

(2) Formation of manure from leaves is a physical change. (T/**F**)

(3) Iron pipes coated with zinc do not get rusted easily. (**T**/F)

(4) Iron and rust are same substance. (T/**F**)

(5) Condensation of steam is not a chemical change. (**T**/F)

(6) Digestion of starch starts in the stomach. (T/**F**)

(7) The tongue helps in mixing food with saliva. (**T**/F)

(8) The gall bladder temporarily stores bile. (**T**/F)

(9) The ruminants bring back swallowed grass into their mouth and chew it for some time. (**T**/F)

(10) Nitric acid turns red litmus blue. (T/**F**)

(11) Sodium hydroxide turns blue litmus red. (T/**F**)

(12) Sodium hydroxide and hydrochloric acid neutralise each other and forms salt and water. (**T**/F)

(13) Indicator is a substance which shows different colours in acidic and basic solutions. (**T**/F)

(14) Tooth decay is caused by the presence of a base. (T/**F**)

(15)The water holding capacity is highest inclayey soil.(**T**/F)

❖ Very short Answer Questions

1. Name the parts of the alimentary canal where

(i) water gets absorbed from undigested food.

(ii) digested food gets absorbed.

(iii) taste of the food is perceived.

(iv) bile juice is produced.

Ans. (i) Large intestine

(ii) Small intestine

(iii) Tongue

(iv) Liver

2. You were blindfolded and asked to identify the drinks provided in two different glasses. You could identify drink A as lime juice and B as bitter gourd juice. How could you do it inspite of being blindfo.

lded?

Ans. With the help of different types of taste buds present in the tongue which have different capablities to taste.

3. 'A' got her gall bladder removed surgically as she was diagnosed with stones in her gall bladder. After the surgery, she faced problems in digestion of certain food items when consumed in bulk. Can you tell which kind of food items would they be and why?

Ans. The food item would be fat because bile juice stored in the gall bladder helps in the digestion of fat. Removal of gall bladder leads to difficulty in digestion of fatty substances.

4. How do the hair of certain animals help in keeping their bodies warm?

Ans. The thick coat of hair traps a lot of air, which is a poor conductor of heat and hence don't allow the exchange of heat from animal's body to the enviornment, keeping it warm.

5. Shopkeepers selling ice blocks usually cover them with jute sacks. Explain why.

Ans. They must use some insulating material like, sack, saw dust, newspaper, etc. to cover the ice.It is done to prevent melting of ice.

6. A laboratory thermometer A is kept 7 cm away on the side of the flame while a similar thermometer B is kept 7 cm above the flame of a candle as shown in Figure 4.5.

Fig. 4.5

Which of the thermometers, A or B, will show a greater rise in temperature? Give reason for your answer.

Ans. Thermometer B will show a greater rise in temperature because hot air rises up by the process of convention and the air on the sides of the candle is colder in comparison to the air above it.

7. To keep her soup warm Paheli wrapped the container in which it was kept with a woollen cloth. Can she apply the same method to keep a glass of cold drink cool? Give reason for your answer.

Ans. Yes, she can, because the air trapped in the layers of wool is a poor conductor of heat which prevents the heat from surroundings to get absorbed by the glass of cold drink . This keeps the glass of cold drink cool.

8. In a mercury thermometer, the level of mercury rises when its bulb comes in contact with a hot object. What is the reason for this rise in the level of mercury?

Ans. Mercury expands when heated. Hence, it rises in the capillary tube.

9. Look at the given reaction.

Hydrochloric acid + Sodium hydroxide (base) → Sodium chloride (salt) + Water

Sodium chloride formed in this reaction remains in solution form. Can we get solid sodium chloride from this solution? Suggest a method (if any).

Ans. Yes, crystals of sodium chloride can be obtained from its solution through the process of crystallization. The solution can be evaporated and we can easily derive the crystals of salt.

10. Melting of wax is a change where a solid changes to liquid state. Give one more such change which you observe in your surroundings.

Ans: Melting of ice is a change where ice (solid) changes to water (liquid).

(Similar examples of such type may be given)

11. What kind of change is shown by tearing of paper?

Ans: Tearing of paper is a physical change that cannot be reversed.

12. Soil has particles of different sizes. Arrange the words given below in the increasing order of their particle size:

Rock, Clay, Sand, Gravel, Silt

Ans: The increasing order of particle size in a soil is as follows:-

Clay < Silt < Sand < Gravel < Rock

Clay has the smallest size of particles (That is why, clay feels smooth). Silt has particles larger than that in clay. Sand particles can be seen easily. The size of particles is the largest in rocks.

13. The components of loamy soil are _____, _____ and _____.

Ans: The components of loamy soil are sand, silt and clay.

14. How can a farmer convert an acidic soil to a neutral soil?

Ans: A farmer can convert an acidic soil into a neutral soil by "**liming the soil**". He can add a small quantity of quick lime or slaked lime solution to the soil. This will neutralise the acidic soil.

15.Explain how soil is formed.

Ans. The soil is formed by the process of weathering in which the rocks break down by the action of wind, water and climate. It is a very slow process and big rocks get converted into soil.

❖ Short Answer Questions:-

1. Various steps involved to obtain wool from fleece are given here.

(i) Picking out the burrs

(ii) Dyeing in various colours

(iii) Shearing

(iv) Scouring

(v) Sorting

Write the above steps in the correct sequence in which they are carried out.

Ans. (iii) Shearing;

(iv) Scouring;

(v) Sorting;

(i) Picking out the burrs

(ii) Dyeing in various colours

2. Some words related with silk are jumbled up. Write them in their correct form.

(a) TURECULRISE

(b) WILSMORK

(c) BELMURRY

(d) RINGLEE

Ans. (a) sericulture

(b) silkworm

(c) mulberry

(d) reeling

3. Figure 3.1 shows three rings of circles with letters in them. Some of these letters in each ring can form the name of one wool yielding animal. Find the names of these animals.

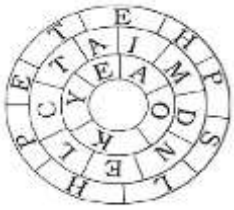


Fig. 3.1

Ans. Yak, Camel, Sheep

4. Write a caption for each of the figures given as Figure 3.2 (a–d).

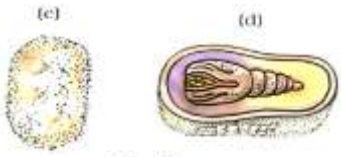


Fig. 3.2

Ans. (a) Eggs of silk moth on mulberry leaves

(b) Silkworm

(c) Cocoon

(d) Cocoon with developing moth

5. A circular metal loop is heated at point O as shown in Figure 4.6.

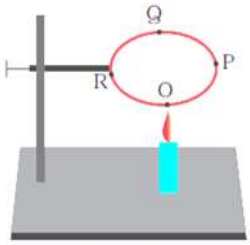


Fig. 4.6

(i) In which direction would heat flow in the loop?

(ii) In which order the pins at points P, Q and R fixed with the help of wax fall if points O, P, Q and R are equidistant from each other?

Ans. (i) The heat will flow in both the directions i.e. from O to P and O to R.

(ii) At first the pins at R and P will fall simultaneously as they both are equidistant from point O.Then after, the pin at point Q will fall.

6. In the arrangements, A and B shown in Figure 4.7, pins P and Q are fixed to a metal loop and an iron rod with the help of wax. In which case are both the pins likely to fall at different times? Explain.

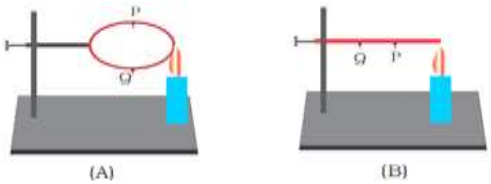


Fig. 4.7

Ans. In case 'B' the pin P will fall before the pin Q because the heat will reach pin P first. Whereas in case 'A', heat will flow in both the directions and both of the pins P and Q will fall simultaneously as both of them are equidistant from the point of heat supply.

7. For setting curd, a small amount of curd is added to warm milk. The microbes present in the curd help in setting if the temperature of the mixture remains approximately between 35°C to 40°C. At places, where room temperature remains much below the range, setting of curds becomes difficult. Suggest a way to set curd in such a situation.

Ans. (i) In order to maintain the desired temperature of the mixture, the container can be wrapped either by woolen material or any other insulating material. Alternately, the mixture can be kept in a heat resistant container.

(ii) The container can be kept in the sun or near the gas stove while cooking.

8. You may have noticed that a few sharp jerks are given to clinical thermometer before using it. Why is it done so?

Ans. The jerk to the thermometer will allow the mercury in or above the kink to flow into the bulb so that the mercury level falls below 35°C.

9. Why is it advised not to hold the thermometer by its bulb while reading it?

Ans. If we hold a thermometer by its bulb, the mercury level will change to show the temperature of our hand and the desired reading will not be observed.

10. At a camp site, there are tents of two shades – one made with black fabric and the other with white fabric. Which one will you prefer for resting on a hot summer afternoon? Give reason for your choice. Would you like to prefer the same tent during winter?

Ans. (i) On a hot summer afternoon, the tent made up of white fabric will be preferred as white colour is a bad absorber and good reflector of heat which will keep the tent cool.

(ii) No, the black fabric tent will be preferred during winter because black colour is a good absorber of heat and will keep the tent warm.

11. While constructing a house in a coastal area, in which direction should the windows preferably face and why?

Ans. The windows of houses in coastal areas should preferably face towards the sea as the blowing sea breeze will keep the house cool during the day time.

12. Observe the picture given as Figure 4.8. Water is being boiled in a pan of wide base.

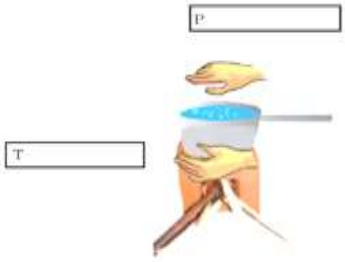


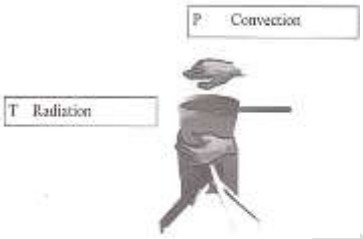
Fig. 4.8

(i) Which position P or T will feel warmer?

(ii) Fill up the boxes P and T to indicate the mode of flow of heat to the hand.

Ans. (i) Position P will feel warmer. P will show a greater rise in temperature because hot air rises up or air on the top of the Pan is getting heated by convection.

(ii)



13. Look at Figure 4.9.

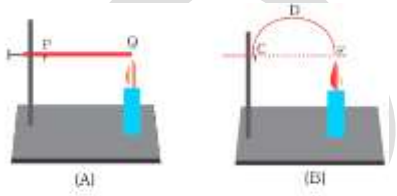


Fig. 4.9

The length of wire PQ in case of A is equal to the diameter of the semicircle formed by the wire CDE, in case B. One pin is attached to each wire with the help of wax as shown in Figure 4.9. Which pin will fall first? Explain.

Ans. The pin on the wire in case A will fall first as heat will reach to it before it reaches the pin in case B.

14. While playing in a park, a child was stung by a wasp. Some elders suggested applying paste of baking soda and others lemon juice as remedy. Which remedy do you think is appropriate and why?

Ans. Wasp sting inject a liquid in the skin which is acidic in nature. Hence, baking soda is the appropriate remedy, as it is basic in nature and neutralises the acid. Whereas lemon juice being acidic itself is not advisable.

15. Form a sentence using the following words – baking soda, ant bite, moist, effect, neutralised, rubbing.

Ans. The effect of an ant bite can be neutralised by rubbing moist baking soda.

16. Classify the following processes into physical or chemical changes:

(i) Beating of aluminium metal to make aluminium foil.

(ii) Digestion of food.

(iii) Cutting of a log of wood into pieces.

(iv) Burning of crackers.

Ans: The classification of the processes is as follows:-

(i) Beating of aluminium metal to make aluminium foil - **Physical change**

Explanation: Aluminium metal changes to aluminium foil. No new substance is formed during this change.

(ii) Digestion of food - **Chemical change**

Explanation: Digestion of food is a bio-chemical process.

(iii) Cutting of a log of wood into pieces - **Physical change**

Explanation: The form of the wood is changed from a log to pieces. No new substance is formed.

(iv) Burning of crackers - **Chemical change**

Explanation: New substances are formed when crackers are burned.

17. Write word equations for two chemical reactions with the help of materials given in the box.

Air, copper sulphate, iron, vinegar, iron oxide, carbon dioxide, iron sulphate, copper, lime water, water

Ans: (1) Iron + Air + Water → Iron oxide

(2) Copper sulphate + Iron → Iron sulphate + Copper

18. Explain the following:

(a) Lime water turns milky on passing carbon dioxide gas into it.

(b) Bubbles are produced when acetic acid is added to a solution of sodium hydrogen carbonate.

Ans: (a) Lime water turns milky on passing carbon dioxide gas through it due to a chemical reaction between lime water and carbon dioxide. The chemical reaction results in the formation of insoluble calcium carbonate (white coloured precipitate).

(b) When acetic acid is added to a solution of sodium hydrogen carbonate, carbon dioxide is evolved. This is due to a chemical reaction between acetic acid and sodium hydrogen carbonate.

19. Which of the following situations is advantageous for the absorption of water and minerals? Why?

Situation 'A': Growth and branching of roots in the C-horizon.

Situation 'B': Growth and branching of roots in A and B horizons.

Ans: Situation 'B' is advantageous for plants for the absorption of water and minerals because A-horizon (topsoil) and B-horizon (subsoil) are rich in water and minerals. A-horizon is rich in humus. Humus makes the soil fertile. Rain water collects in the B-horizon.

20. How can a farmer convert an acidic soil to a neutral soil?

Ans: A farmer can convert an acidic soil into a neutral soil by "**liming the soil**". He can add a small quantity of quick lime or slaked lime solution to the soil. This will neutralise the acidic soil.

21. Is it a good practice to remove grass and small plants that are growing in an open, unused field? Give reason to support your answer.

Ans: No, it is not a good practice to remove grass and small plants that are growing in an open, unused field. Plants cover the soil surface and their roots bind the soil particles and hold them in place. They prevent soil erosion during strong winds and rains, and thereby protect the top soil.

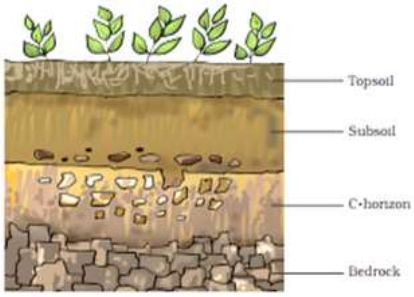
22. A man digging a pit found that he could dig with ease initially but digging became difficult as he went deeper. He could not dig beyond a depth of five feet. Provide a suitable scientific explanation.

Ans: The soil surface has loose top soil which is easier to dig. At deeper layers, hard and partially weathered rocks or bedrocks are present which makes digging difficult.

23. Locate the following zones given as boxed items in Figure 9.1 which shows a diagram of soil profile:

Top soil, Subsoil, C-horizon, Bedrock

Ans: Different zones in the soil profile are as follows:-



24. Rajasthan is a desert state in India. Once while travelling to Rajasthan by train, Boojho observed several streams and rivulets of rain water during the journey but to his surprise he did not see streams of water in the desert region even during rains. Help Boojho find a suitable explanation for this.

Ans: Deserts are vast stretches of sand where the falling rain water immediately percolates downwards in the spaces between sand particles. Due to this, Boojho did not see streams of water in the desert region even during rains.

25.How is clayey soil useful for crops?

Ans. Clayey soil is very useful for crops because:

(i) It has very good water retaining capacity.

(ii) This soil is rich in humus and is very fertile.

(iii) It contains useful organic minerals. These properties of loamy soil is very suitable for growing crops.

❖ Long Answer Questions:-

1. Label the below given Figure 2.1 as directed below in (i) to (iv) and give the name of each type of teeth.

Fig. 2.1

(i) The cutting and biting teeth as 'A'

(ii) The piercing and tearing teeth as 'B'

(iii) The grinding and chewing teeth as 'C'

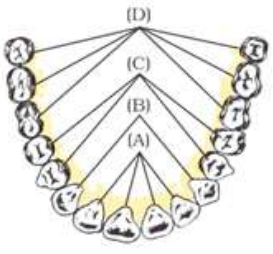
(iv) The grinding teeth present only in adult as 'D'

Ans. A. Incisors

B. Canines

C. Premolars

D. Molars



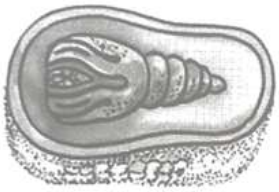
2. Describe the life history of silk moth with the help of figures of various stages.

Ans. The female silk moth lays eggs. Larvae hatches out from it and are known as silkworms. As they grow the silkworm gets ready to enter the next stage of life known as pupa. Conversion of caterpillar to pupa involves a weaving of net around itself. It swings from side to side in the form of the figure of eight (8) and secretes fibre made of a protein during these movement of the head which gets hardened on exposure to air and becomes silk fibre that completely covers the caterpillar. This covering in known as cocoon. Silk fibre is obtained from this cocoon. The further growth of the silk moth continues inside the cocoon.

Female silk moth laying eggs

Silkworm

Cocoon



Cocoon with developing moth

3. Explain two neutralisation reactions related to daily life situation.

Ans. The reaction between an acid and a base is known as Neutralisation Reaction. Salt and water are produced in this process with the evolution of heat.

$$Acid + Base \rightarrow \underset{(Heat\ evolved)}{Salt + Water}$$

Two daily life situations related to neutralisation reaction is:

(i) **Indigestion:** Our stomach contains HCI, it helps in digestion. But too much of acid in the stomach cause indigestion. It can be painful. To relieve indigestion, we take antacid, such as milk of magnesia which neutralises the effect of excessive acid as it contains a base- magnesium hydroxide.

(ii) **Ant Bite**: When an ant bites it injects formic acid into the skin. The effect can be neutralized by rubbing moist baking soda(sodium hydrogen carbonate) or calamine solution, which contains zinc carbonate.

4. Give two examples for each of the following cases:

(a) Physical changes which are reversible.

(b) Physical changes which are not reversible.

(c) Chemical changes.

Ans:

(a) Two examples of physical changes, which are reversible, are:-

i) Folding of paper **ii)** Melting of ice

(b) Two examples of physical changes, which are not reversible, are:-

i) Tearing of paper **ii)** Breaking of glass

(c) Two examples of chemical changes are:-

i) Reaction between vinegar and baking soda **ii)** Burning of a match-stick.

There can be many other examples in each case.

5. Give an example of a chemical reaction for each of the following situations:

(a) A change in colour is observed.

(b) A gas is evolved.

(c) Sound is produced.

Ans: Examples of a chemical reactions are as follows:-

(a) Reaction between copper sulphate solution and iron metal.

$$\underset{\text{blue}}{Copper\ sulphate} + Iron \rightarrow \underset{\text{green}}{Iron\ Sulphate} + \underset{\text{brown}}{Copper}$$

The colour of the solution will change from blue to green. Copper sulphate is blue in colour whereas iron sulphate is green in colour.

(b) Reaction between baking soda and vinegar. (Carbon dioxide will be evolved)

(c) Burning of crackers. (Sound will be produced)

6. Gardeners gently dig up the soil around the roots of garden herbs (plants) frequently. Give reasons.

Ans: Gardeners dig up the soil around the roots of garden herbs (plants) to facilitate:-

(a) Easy growth and expansion of the roots.

(b) Easier percolation of water through the soil.

(c) Aeration of soil so that air can move into the deeper layers of the soil.

(d) Removal of weeds.

7. In towns and cities, generally, the bore wells have to be dug very deep to get water as compared to bore wells dug in villages. Give suitable reasons.

Ans: The bore wells in towns and cities generally have to be dug deep to get water as compared to bore wells which are dug in villages. This is due to the following reasons:-

(a) Excessive use of water in towns and cities lowers the level of the ground water.

(b) Towns and cities have asphalt roads and vast areas of the soil are covered with concrete. As a result, the rain water cannot percolate down to recharge the ground water and the ground water level decreases. Villages have larger areas of open soil surface and fewer asphalt roads and concrete surfaces. Thus, larger soil surface area is available for rain water to percolate down into the soil easily and recharge the ground water. As a result, even shallow bore wells yield water.

8. Sketch the cross section of soil and label the various layers.

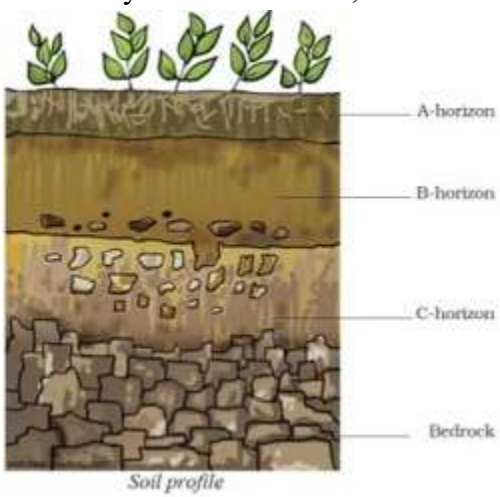
Answer: A vertical section through different layers of the soil is called the soil profile. Each layer differs in feel (texture), colour, depth and chemical composition. These layers are referred to as horizons.

The uppermost horizon is generally dark in colour as it is rich in humus and minerals. The humus makes the soil fertile and provides nutrients to growing plants. This layer is generally soft, porous and can retain more water. It is called the topsoil or the A-horizon.

The next layer has a lesser amount of humus but more of minerals. This layer is generally harder and more compact and is called the B-horizon or the middle layer.

The third layer is the C-horizon, which is made up of small lumps of rocks with cracks and crevices.

Below this layer is the bedrock, which is hard and difficult to dig with a spade



Soil profile