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

Time: 3 hrs Total Marks: 100

SECTION-A

Ans1. Correct Option: [A]
Solution: Grass eaten by ruminants is stored in rumen.

Ans2. Correct Option: [D]
Solution: Lichens is an association between algae and fungi wherein both these organisms are mutually benefitted from each other.

Ans3. Correct Option: [B]
Solution: The temperature increases as the day advances due to perpendicular sun rays.

Ans4. Correct Option: [B]
Solution: Barometer is used to measure air pressure.

Ans5. Correct Option: [A]
Solution: Biological weathering is the weathering caused due to plant and animal activities.

Ans6. Correct Option: [B]
Solution: We feel hungry after doing any physical activity or exercise.

Ans7. Correct Option: [C]
Solution: Angora wool is obtained from Angora goat

Ans8. Correct Option: [A]
Solution: The picture is showing female moth laying eggs. A female lays hundreds of eggs at a time.

Ans9. Correct Option: [C]
Solution: Bacteria, anthrax causes a fatal blood disease called sorter's disease.

Ans10. Correct Option: [D]
Solution: Ammonium hydroxide is used as a cleansing agent.

Ans11. Correct Option: [C]
Solution: Calamine being a basic substance can neutralize the effect of acid present in ant sting.

Ans12. Correct Option: [D]
Solution: Hydrochloric acid is present in stomach. Deoxyribonucleic acid is present in cells of our body. Fats in our body contain fatty acids.

Ans13. Correct Option: [C]
Solution: Baking soda is a basic substance and thus changes the colour of yellow turmeric paper to red.

Ans14. Correct Option: [A]
Solution: Aluminum is a good conductor of heat.

Ans15. Correct Option: [A]
Solution: It reduces heat transfer through conduction

Ans16. Correct Option: [C]
Solution: Conduction and convection

Ans17. Correct Option: [A]
Solution: The air near the source of heat rises up away from the source.

Ans18. Correct Option: [B]
Solution: The base/fundamental unit of time is a second.

Ans19. Correct Option: [C]
Solution: Average speed = Total distance travelled / total time

Ans20. Correct Option: [B]
Solution:

$$\text{Distance covered in first 15 min.} = 40 \times \left(\frac{1}{4}\right) \text{ km.} = 10 \text{ km.}$$

$$\text{Distance covered in second 15 min.} = 60 \times \left(\frac{1}{4}\right) \text{ km.} = 15 \text{ km.}$$

$$\text{Total distance} = 10+15 = 25 \text{ km.}$$

SECTION-B

Ans21. Fertilisers and manures contain plant nutrients such as nitrogen, phosphorous and potassium, etc. So, when fertilisers and manures are added to the soil in the fields, then the soil gets enriched with nutrients like nitrogen, phosphorous and potassium, etc.

Ans22. In winters when temperature falls after sunset, water vapour condenses near the ground .The droplets hanging in the air form fog so, nights are foggy in winters.

Ans23. Earthworms ingest soil, digest the organic matter present in it and excrete soil full of plant nutrients known as worm cast which makes soil fertile. They make burrows into the soil and thus they aerate the soil.

Ans24. In the absence of oxygen, glucose breaks down into alcohol and carbon dioxide, with the release of energy.

Ans25.

(i) Scouring of sheared skin with hair is done to remove grease, dust and dirt from the hair.

(ii) It is done by thoroughly washing the sheared skin and hair in soap solution to remove all the dirt. It can be done by both hands and machines.

Ans26. Magnesium hydroxide is the base present in milk of magnesia. It is used to neutralise the excess acid present in stomach and is hence used as an antacid.

Ans27. Antacids are a group of mild bases which have no toxic effects on body and are used to cure indigestion. Being basic in nature, antacids react with excess acid in the stomach and neutralise it.

Ans28. Heat is the form of energy which can cause hotness to a body while temperature is the degree of hotness or coldness of a body.

Ans29.

Distance covered in first 10 min. = 40 x (10/60) km. = 20/3 km.
Distance covered in second 15 min. = 60 x (15/60) km. = 15 km.
Total distance = (20/3) + 15 = 65/3 = 21.66 km.

Ans30.

Speed (at B) = Distance/Time = 40/1 = 40 km/hr
Therefore, distance covered in 6 hours is given by,
Distance = Speed x Time = 40 x 6 = 240 km

SECTION-C

Ans31.

(i) Inside the pitcher there are hair which are directed downwards. When an insect lands in the pitcher, the lid encloses and the trapped insect gets entangled into the hair.

(ii) The fungal spores are generally present in air. When they land on wet and warm things they germinate and grow.

Ans32.

(i) Camel has following adaptations:

1. It has long legs which keep it away from the hot sand
2. It drinks large amount of water in one go.
3. It excretes very less amount of urine.

(ii) Rats and snakes avoid high temperature of day as they remain in burrows during day and become active at night. They also aestivate.

Ans33.

(i) B- horizon has highest mineral content because when rainwater seeps through the topsoil, it dissolves minerals and deposits them in this layer.

(ii) Soil is necessary for plant growth because

a. It provides mechanical support to plants.
b. It provides water and nutrients to the plants.

Ans34.

(i) Our muscle cells respire anaerobically only for a short time, when there is temporary deficiency of oxygen. During heavy exercise for many hours or heavy weight lifting, the demand for energy is high. But the supply of oxygen to produce the energy is limited. Then anaerobic respiration takes places in the muscle cells to fulfill the demand of energy.

(ii) The cramps occur when muscle cells respire anaerobically. The partial breakdown of glucose produces lactic acid. The accumulation of lactic acid causes muscle cramps.

Ans35.

a. Wool is a proteineous fibre and hence burns with a bad smell.
b. Wool fibre is highly porous. The air in the pores acts as an insulator and does not allow the body heat to go out and is hence used for making winter clothing.
c. The quality of wool is judged on the basis of thickness, length, shine, strength and color of the fibre and hence depends on the breed of sheep.
d. Shearing does not cause any pain to the sheep because the uppermost thin layer of their skin is dead.

Ans36.

(a) The rearing of silk moth for obtaining silk is called sericulture.

(b) The covering of silk fibres inside which the caterpillar covers itself is called cocoon.

(c) Cocoons of silk moth are used to obtain the silk fibres. These cocoons are kept under the sun or boiled or exposed to steam. The silk fibres separate out. This process of separating the silk fibres from the cocoons is called reeling.

Ans37.

Acids	Bases
1. They are sour in taste.	1. They are bitter in taste.
2. They give corrosive touch.	2. They give soapy touch.
3. They turn blue litmus to red.	3. They turn red litmus to blue.
4. They have no effect on the color of phenolphthalein.	4. They turn the pink color of phenolphthalein to colorless.

Ans38.

(i) There will be no flow of heat either from iron ball to water or from water to iron ball since both water and iron ball are at same temperatures so heat transfer will not take place.

(ii) Heat flows from higher temperature to lower temperature. So heat will go from hotter end to colder end.

Ans39.

(a) A laboratory thermometer is a thermometer used to measure temperatures in range -10^{o}C to 110^{o}C.

(b) Pyrometer is used to measure very high temperatures.

(c) Stainless steel pans are usually provided with copper bottoms because copper is a better conductor of heat than stainless steel hence cooking of food becomes faster.

Ans40.

(i) Example 1 - Revolution of earth around the sun causes the change in season on a periodic basis.
Example 2 - Rotation of earth around its own axis causes days and nights periodically.

(ii) Time = Distance / Speed
= (25/60) + (20/50)
= (5/12) + (2/5)
= [(5 x 5) + (12 x 2)]/(12 x 5)
= [25 + 24]/60
= 49/60 h
= 49 min

SECTION-D

Ans41.

(i) Glucose and oxygen are the final products of photosynthesis. Glucose is utilized by the plant and extra glucose gets converted into starch which is stored in plants as reserved food material. Oxygen is released through stomata of leaves.

(ii) The desert plants have scale or spine like leaves to reduce the loss of water by transpiration. These plants have green stems which carry out photosynthesis.

Ans42.

(i) Air containing carbon dioxide enters the plant through these openings where it is used in photosynthesis and respiration. Oxygen produced by photosynthesis exits through these openings. Also, water vapour is released into the atmosphere through these pores by the process called transpiration.

(ii) Snakes respire through the normal contraction and relaxation of muscles present between the ribs. However, they lack a diaphragm.

Ans43. The reaction in which an acid reacts with a base to form salt and water is called neutralisation.

A neutralisation reaction can be represented as:

$$\text{Acid} + \text{Base} \longrightarrow \text{Salt} + \text{Water}$$

The salt formed during a neutralisation reaction depends on which acid and which base are reacted with each other. Some heat is always evolved (or produced) in a neutralisation reaction.

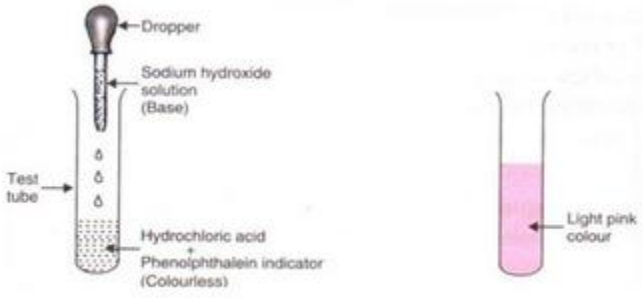
Sodium hydroxide is a base and hydrochloric acid is an acid. So, when sodium hydroxide is treated with hydrochloric acid, then a neutralisation reaction takes place to form sodium chloride (salt) and water. This can be written as:

$$\underset{(NaOH)}{\text{Sodium hydroxide}} + \underset{(HCl)}{\text{Hydrochloric acid}} \longrightarrow \underset{(NaCl)}{\text{Sodium chloride}} + \underset{(H_2O)}{\text{Water}}$$

We take 5 mL of dilute hydrochloric acid solution in a test-tube. The hydrochloric acid solution is colourless. Add 2 or 3 drops of phenolphthalein indicator to the acid in the test-tube. Shake the test-tube gently. Phenolphthalein indicator is colourless. There is no change in the colour of phenolphthalein indicator on adding it to hydrochloric acid solution.

Take sodium hydroxide solution (base) in a dropper. Add this sodium hydroxide solution to hydrochloric acid in the test-tube drop wise (stirring the test-tube gently after each addition). Continue to add sodium hydroxide solution drop by drop (while stirring) till a light pink colour just appears in the solution in the test- tube. We then stop adding more of sodium hydroxide solution.

At this stage, all the hydrochloric acid taken in the test-tube has been completely neutralised by sodium hydroxide base. Thus, a neutralisation reaction has taken place in the test-tube. The completion of neutralisation reaction is indicated by the fact that when all the acid has been neutralised, then a little excess of the base changes the colour of phenolphthalein indicator to pink. This makes the solution in the test-tube light pink.



Ans44.

(a) A simple pendulum consists of a small metal ball (called bob) suspended by a long thread from a rigid support, such that the bob is free to swing back and forth. The time period of a simple pendulum is the time taken by the pendulum bob to make one complete oscillation.

(b) False

(c) Time for 20 complete oscillations = 36 s
Time for 1 complete oscillation = 36/20 = 1.8 s
So, time period of the pendulum = 1.8 s