Goa Board
Class VII Science
Term 1
Sample Paper – 5 Solution

Time: 3 hrs   **Total Marks: 100**

SECTION A

1. **Ans.** Correct Option: [A]
   Solution: The peristaltic movements are performed by the oesophagus.

2. **Ans.** Correct Option: [A]
   Solution: The slimy green patches in ponds or in other stagnant water bodies are called algae.

3. **Ans.** Correct Option: [A]
   Solution: Mangroves

4. **Ans.** Correct Option: [B]
   Solution: When rising hot air meets a horizontal cool current

5. **Ans.** Correct Option: [B]
   Solution: By adding lime

6. **Ans.** Correct Option: [D]
   Solution: The inhaled air enters the lungs through the wind pipe.

7. **Ans.** Correct Option: [C]
   Solution: A female silk moth lays hundreds of eggs at a time.

8. **Ans.** Correct Option: [C]
   Solution: The small fluffy fibres of wool are known as burrs.

9. **Ans.** Correct Option: [B]
   Solution: The process of separation of woollen hair of different textures is known as sorting.

10. **Ans.** Correct Option: [B]
    Solution: Sulphuric acid is used in lead acid batteries.

11. Ans. Correct Option: [B]
Solution: Slaked lime or calcium hydroxide being basic in nature can neutralise the acidity of soil.

12. Ans. Correct Option: [B]
Solution: Sodium hydroxide being a base can neutralise nitric acid.

13. Ans. Correct Option: [C]
Solution: Sour milk has lactic acid, and phenolphthalein does not show pink colour with acids.

14. Ans. Correct Option: [A]
Solution: The range of a laboratory thermometer is generally from −10°C to 110°C.

15. Ans. Correct Option: [C]
Solution: The silvered glass walls in a vacuum flask prevent transfer of heat by radiation.

16. Ans. Correct Option: [B]
Solution: The SI unit of temperature is Kelvin.
273.15 K = 0°C

17. Ans. Correct Option: [B]
Solution: Time period = Time taken to complete one oscillation
Therefore, T = Total time taken/Total oscillations
$$= 10/5$$
$$= 2 \text{ seconds}$$

18. Ans. Correct Option: [B]
Solution: 1 day = 24 hours
$$= 24 \times 60 \text{ minutes}$$
$$= 24 \times 60 \times 60 \text{ seconds}$$
$$= 86400 \text{ seconds}$$

19. Ans. Correct Option: [C]
Solution: As the slope of the graph is decreasing continuously, the speed of the vehicle is decreasing.

20. Ans. Correct Option: [D]
Solution: A quartz clock shows the most accurate time. Most of the watches used nowadays are quartz clocks.

SECTION B

21. Ans. Cyclones have the following effects:
   (i) Due to cyclones, many marine organisms get killed, and it also destructs coral reefs.
   (ii) It brings sea water and thus makes the soil saline. This makes the soil unfit for cultivation.

22. Ans. Functions of hydrochloric acid:
   (i) It kills many bacteria which enter along with the food.
   (ii) It makes the medium in the inner stomach acidic and enables the digestive juices to act.

23. Ans. The two characteristics of healthy soil are
   (i) It is a mixture of different sized particles.
   (ii) It is rich in humus.

24. Ans. Yes. The breathing rate increases during exercise because the level of carbon dioxide in the blood becomes high. As a result, the rate of cellular respiration also increases.

25. Ans. The four stages of the silkworm life cycle are
   1. Egg
   2. Larva (caterpillar)
   3. Pupa
   4. Adult

26. Ans. Damages caused by acid rain:
   (i) It makes the water of lakes, rivers and ponds too acidic due to which aquatic animals get killed.
   (ii) It damages the metal structures such as bridges, buildings etc.

27. Ans. Antacid changes colour of turmeric paste to red.
   Because an antacid contains magnesium hydroxide as the base, it changes the colour of turmeric paste to red.

28. Ans. When we are without clothes, air carries away heat from our body due to convection. Thus, we feel cold.

29. Ans. When heat falls on some object, a part of it is reflected, a part is absorbed and a part may be transmitted. The temperature of the object increases due to the absorbed part of the heat.

30. Ans. Total distance travelled = 3 km

Total time taken = 3 minutes

Speed = Total distance covered/Total time taken

$= 3/3 = 1$ km/min 1 min $= 1/60$ hr. So, speed $= 1/(1/60) = 60$ km/hr

SECTION C

31. Ans.
   (i) The liver is the largest gland in the human body. It is situated in the upper part of the abdomen, on the right side.
   (ii) The pancreas is located just below the stomach. It secretes pancreatic juice which acts on carbohydrates, fats and proteins and changes them into simpler forms.

32. Ans.
   (i) The winter monsoon winds blow from the Indian landmass to the sea. Some of these winds pass over the Bay of Bengal and cause rainfall on the coastal areas of Tamil Nadu.
   (ii) Land breeze blows during the night because
      (a) Land loses heat quickly and cools down, so there is high air pressure on land.
      (b) Water retains heat for a longer time, so low air pressure develops over land.

33. Ans.
   (i) Because potato needs proper soil air and soil rich in plant nutrients, it can grow in less water.
   (ii) Yes. Planting trees helps in reducing soil erosion as the roots of the plants bind the soil particles together, and thus, they hold soil particles and prevent soil erosion.

34. Ans.
   (i) In plants, each part can independently take in oxygen from the air and give out carbon dioxide. In the cells, the oxygen is used to break down glucose into carbon dioxide and water.
   (ii) If a potted plant is overwatered for a long time, then the plant may die because too much water expels all the air from in between the soil particles and water is not available for aerobic respiration.

35. Ans. Wool is obtained from sheep by a long process which involves the following steps:

1. Shearing: The hair of sheep along with a thin layer of skin (called fleece) are removed from the body of sheep. This process is called shearing.
2. Scouring: The fleece of sheep contain dust, dried sweat and grease. So, the fleece is thoroughly cleaned by washing with soap and a lot of water in tanks. This process is called scouring. The scoured fleece is then dried.
3. Sorting: The fleece is sent to a factory where it is broken and separated into sections of different quality fibres. This process of separating the fleece of sheep into sections according to the quality of woollen fibres (such as fine, coarse, long, short etc) is called sorting. The white woollen fibres obtained by sorting can be dyed in different colours.
4. Combing: The process of combing straightens the entangled woollen fibres and also removes the small fluffy fibres which may be caught in them. It is done by using combs having metal teeth.
5. Spinning: The long woollen fibres are spun into thick yarn called 'wool'.

36. Ans.

(i) Our stomach produces hydrochloric acid. Its chemical formula is HCl.
(ii) This hydrochloric acid helps in digesting our food without harming the stomach.
(iii) Excess of acid in the stomach causes indigestion which produces pain and irritation.
(iv) In order to cure indigestion and get rid of pain, we can take bases called antacids. These are a group of mild bases which have no toxic effects on the body. Being basic in nature, they react with excess acid in the stomach and neutralise it.

37. Ans. The names and formulae of some of the bases and acids, and the salts formed from them are

Base	Acid	Salt
Sodium hydroxide (NaOH)	Sulphuric acid (H_2SO_4)	Sodium sulphate (Na_2SO_4)
Potassium hydroxide (KOH)	Nitric acid (HNO_3)	Potassium nitrate (KNO_3)
Ammonium hydroxide (NH_4OH)	Hydrochloric acid (HCl)	Ammonium chloride (NH_4Cl)
Sodium hydroxide (NaOH)	Carbonic acid (H_2CO_3)	Sodium carbonate (Na_2Co_3)

38. Ans.
   (i) When hot particles in a medium rise and cold particles move down to take their place, convection currents are formed.
   (ii) A hot utensil kept away from the flame cools down as it transfers heat to the surroundings by radiation.

39. Ans. One of the biggest pendulum clocks in the world is the Big Ben at the House of Parliament in London, UK. Its pendulum is 4 metres long, and it takes only 4 seconds to complete one to-and-fro oscillation or swing.

40. Ans.
   (i) An object moving in a straight line path with a constant speed along the same direction is said to be in uniform motion.
   Examples:
   (a) A bird flying one way only along a straight path at a constant speed.
   (b) A ball rolling on a smooth horizontal track.

   (ii) Speed at A = Distance/Time = 30/45 = 2/3 km/min.
   Speed at B = Distance/Time = 40/60 = 2/3 km/min.
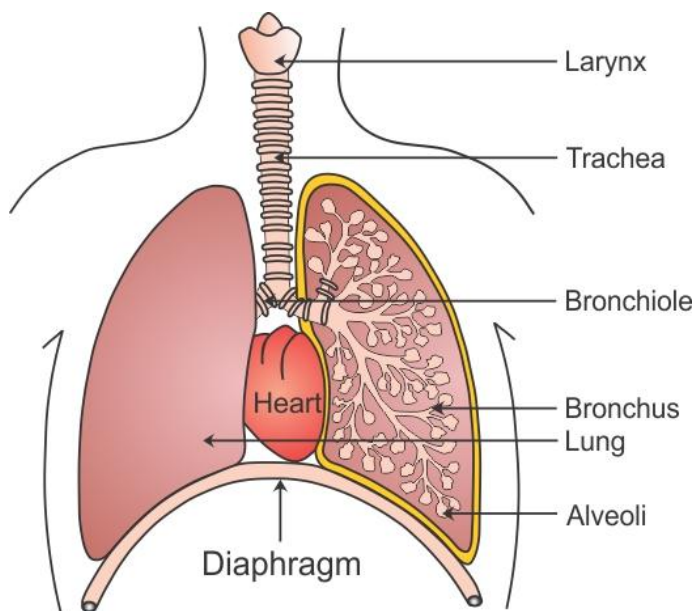   Thus, the speed is the same at both the points. Hence, the body is moving with a constant speed.

SECTION D

41. Ans.
   (i) Symbiosis is a relationship where two different species of plants live together as if they are parts of the same plant and help each other in obtaining food.
   (ii) Symbiosis occurs in plants called lichens.
   (iii) In lichens, the green-coloured alga (autotroph) and the non-green fungus (saprophyte) live together. The fungus holds the algal cells in its mat of web-like hyphae (thin filaments). The fungus absorbs water and mineral salts from the surroundings and supplies them to the alga. The alga being green prepares food by photosynthesis and shares it with the fungus. Thus, both alga and fungus gain mutually from one another by living together. This is an example of symbiosis.

42.Ans.

(i) The exchange of gases between air and blood takes place across the walls of the alveoli.

43.Ans.

(a) Silk moth

(b)
(i) Larva
(ii) Caterpillar
(iii) Pupa
(iv) Silkworm

44.Ans.

(i) The feathers keep birds warm in cold weather due to the air trapped in them. Air being a poor conductor of heat prevents the body heat of birds from escaping to the cold surroundings and hence keeps the birds warm.

(ii)