

Goa Board
Class VII Science
Term 1
Sample Paper – 4 Solution

Time: 3 hrs

Total Marks: 100

SECTION A

1. **Ans.** Correct Option: [A]
Solution: The first and biggest compartment of a cow's stomach is the rumen.
2. **Ans.** Correct Option: [D]
Solution: Oxygen is released during the process of photosynthesis.
3. **Ans.** Correct Option: [B]
Solution: Summer sleep is called aestivation.
4. **Ans.** Correct Option: [B]
Solution: Hail
5. **Ans.** Correct Option: [B]
Solution: Alluvial soil
6. **Ans.** Correct Option: [B]
Solution: Inhalation is a process of taking in oxygen.
7. **Ans.** Correct Option: [D]
Solution: The silk fibre is soft, lustrous, elastic and can be dyed in beautiful colours.
8. **Ans.** Correct Option: [D]
Solution: Muga, Tassar and Kosa are different varieties of silk.
9. **Ans.** Correct Option: [B]
Solution: The pashmina shawl is made of goat fur found in Jammu and Kashmir.
10. **Ans.** Correct Option: [A]
Solution: Tamarind contains tartaric acid.

11. Ans. Correct Option: [A]

Solution: Sodium carbonate cannot be used as an antacid.

12. Ans. Correct Option: [D]

Solution: The rain becomes acidic because carbon dioxide, sulphur dioxide and nitrogen dioxide (which are released into the air as pollutants) dissolve in rain drops to form carbonic acid, sulphuric acid and nitric acid, respectively.

13. Ans. Correct Option: [A]

Solution: Lemon juice is an acid, and acids do not change the colour of turmeric paper. Bases change the colour of turmeric paper.

14. Ans. Correct Option: [B]

Solution: Radiation travels at the speed of light.

15. Ans. Correct Option: [A]

Solution: A radiating source is usually hot.

16. Ans. Correct Option: [A]

Solution: (I) and (II), i.e. conduction and convection require a medium for heat transfer.

17. Ans. Correct Option: [C]

Solution: The to-and-fro motion of a simple pendulum is an example of a periodic or oscillatory motion.

18. Ans. Correct Option: [B]

Solution: The ages of stars and planets are often expressed in billions of years.

19. Ans. Correct Option: [A]

Solution: The meter which measures the distance moved by a vehicle is known as an odometer.

20. Ans. Correct Option: [A]

Solution: Initial speed = Final speed

SECTION B

- 21. Ans.** Digestion does not take place in the food pipe. It only helps to push the food downwards to the stomach by the movement of the walls of the food pipe.
- 22. Ans.** Due to unequal heating of the sea, warm air rises creating a low air pressure region. Cold air rushes in, which forces up more hot air and the current of air sets up. Due to the rotation of the Earth, cold air swirls around the low pressure area.
- 23. Ans.** Loamy soil is a mixture of sand, clay, silt and humus in the right proportions. It contains sufficient amount of humus and thus provides all the necessary nutrients for the growth of plants.
- 24. Ans.** After a physical activity, we take deep breaths and inhale more oxygen. As a result, more oxygen is supplied to our cells and the process of breakdown of food speeds up. Due to this, more energy is released and we tend to feel hungry.
- 25. Ans.** Twigs in trays are placed for rearing silk moth so that the cocoons find a stable base and get attached to twigs. The caterpillar or silkworm spins the cocoon, inside which the silk moth develops.
- 26. Ans.** Yak wool is common in Tibet and Ladakh.
Angora wool is obtained from angora goats found in hilly regions, such as Jammu and Kashmir.
- 27. Ans.** Industrial waste is either too acidic or too basic in nature. This high amount of acid or base must be neutralised before disposing the waste into water bodies.
Too acidic waste can be treated with quicklime or slaked lime, and too basic waste can be treated with either acid or acidic waste discharged from some other industry.
- 28. Ans.** Air and water are bad conductors of heat.
Iron and aluminium are good conductors of heat.
- 29. Ans.** Black being a good absorber is also a good emitter. Hence, a black pot emits heat radiations faster. A shiny pot, on the other hand, absorbs less and hence emits less heat energy.
- 30. Ans.** Total time taken = 1 hour = 60 minutes = 3600 seconds
Total number of oscillations = 100
Therefore, the time period of the pendulum = $3600/100 = 36$ seconds

SECTION C

31. Ans. Grass-eating animals quickly swallow the grass and store it in the rumen. Here, the food gets partially digested and returns to the mouth in small lumps. So, grass-eating animals keep chewing continuously even when they are not eating. This process is called rumination.

32. Ans.

- (i) Due to high temperature during the months of June to September, sea breeze blows from the sea to the land and carries a high amount of moisture and causes rainfall in India. So, these are known as summer monsoon winds.
- (ii) Sea breeze blows during the day because
 - (a) The land gets heated quickly, so low pressure develops over the land.
 - (b) Water takes time to heat, so high pressure develops over the water.

33. Ans.

- (i) The percolation rate is the rate at which water drains from the soil. If the percolation rate of soil is less, then it will become water logged. If the percolation rate of soil is high, then no water will be available to plants. Thus, it will affect the fertility of soil.
- (ii) Humus helps the soil to absorb surface water quickly and retain it. Thus, the soil remains wet and prevents soil erosion.

34. Ans.

- (i) Breathing involves the movement of the diaphragm and the rib cage. During inhalation, ribs move up and outwards and the diaphragm moves down. This movement increases the space in our chest cavity and air rushes into the lungs. The lungs get filled with air. During exhalation, ribs move down and inwards, while the diaphragm moves up to its former position. This reduces the size of the chest cavity and air is pushed out of the lungs.
- (ii) The process of breakdown of food in the cell with the release of energy is called cellular respiration. It takes place in the cells of all organisms.

35. Ans. Mulberry trees are cultivated in order to obtain silk. Silkworms are reared and their cocoons are collected to get silk fibres. The various steps involved are

- (i) Rearing of silkworms: A female silk moth lays hundreds of eggs at a time. The eggs are stored by the farmers at suitable temperature and humidity under hygienic conditions. When the eggs hatch, silkworms come out of the eggs. The silkworms are fed mulberry leaves. After 25–30 days, the silkworms stop eating and get ready to spin cocoons. The silkworms enclose themselves completely inside the silken cocoons in two or three days.
- (ii) Processing of cocoons to obtain silk fibres: The pile of cocoons is placed in hot water. Hot water makes the silk fibres of cocoons to separate out. The long fibres are obtained by unwinding the threads from cocoons. This process is called reeling.
- (iii) Converting silk fibres into silk cloth: Silk fibres obtained from cocoons are spun (twisted) to form silk threads called silk yarn. The silk yarn is then woven on looms into silk cloth by the weavers.

36. Ans.

- (i) Ammonium sulphate solution, because it is acidic in nature.
- (ii) Sodium carbonate solution, because it is basic in nature.
- (iii) Sodium carbonate solution, because it is basic in nature.
- (iv) Sodium sulphate solution, because it is neutral in nature.

37. Ans. Neutralisation reactions play an important role in soil treatment.

- The soil may be acidic or basic naturally. The plants do not grow well if the soil at a place is too acidic or too basic.
- The excessive use of chemical fertilisers in the fields also makes the soil too acidic. When the soil is too acidic, it is treated with bases such as quicklime (calcium oxide) or slaked lime (calcium hydroxide). The bases such as quicklime (or slaked lime) neutralise the excess acid present in the soil and reduce its acidic nature. Thus, a farmer should add quicklime (or slaked lime) in the fields if the soil is too acidic.
- Sometimes, however, the soil is too basic. If the soil is too basic, then decaying organic matter (called manure or compost) is added to it. The decaying organic matter releases acids which neutralise the excess bases present in the soil and reduce its basic nature. Thus, a farmer should add decaying organic matter (manure or compost) in his fields if the soil is too basic.

38. Ans. Cool air is denser, so it moves down. Warm air is lighter, so it rises; hence, convection currents are formed which help in circulating the cold air and in keeping the room cool.
If the air cooler is not kept higher up, then the cool air will remain at the surface layer and warm air will remain at the top; hence, no circulation of air will take place and the room will remain warm.

39. Ans.

(i) Bar graph and pie chart.

(ii) Speed = Distance/Time = $40/60 = 2/3$ km/min

Therefore, the time required to travel 100 km is given by

Time = Distance/Speed = $100/(2/3) = 100 \times 3/2 = 50 \times 3 = 150$ minutes

Therefore,

Time = 150 minutes = 2 hours 30 minutes

40. Ans.

(i) 1 microsecond = 10^{-6} second

1 nanosecond = 10^{-9} second

So, a microsecond is a bigger unit of time than a nanosecond.

(ii) Examples:

(a) A vehicle moving on a road which keeps on changing its speed.

(b) A ball rolled on a rough surface.

(c) A bird flying randomly into the sky.

SECTION D

41. Ans. There are four types of teeth in human beings. They are incisors, canines, premolars and molars.

(i) Incisors are the chisel-shaped teeth at the front of the mouth. Incisors are for biting and cutting the food.

(ii) Canines are the large, pointed teeth just behind the incisors. The canines are for piercing and tearing the food.

(iii) Premolars are the large teeth just behind the canines on each side. Premolars have large, flat surfaces. The premolars are for crushing the food.

(iv) Molars are large teeth which are present just behind the premolars towards the back of our mouth. The molars have a larger surface area than the premolars. The molars help in chewing and grinding food.

42. Ans.

- (i) Breathing is the process by which air rich in oxygen is taken inside the body of an organism and air rich in carbon dioxide is expelled from the body with the help of breathing organs.
- (ii) Differences between aerobic and anaerobic respiration:

Aerobic respiration	Anaerobic respiration
1. Aerobic respiration takes place in the presence of oxygen.	1. Anaerobic respiration takes place in the absence of oxygen.
2. Complete breakdown of food occurs in aerobic respiration.	2. Partial breakdown of food occurs in anaerobic respiration.
3. The end-products in aerobic respiration are carbon dioxide and water.	3. The end-products in anaerobic respiration may be alcohol and carbon dioxide (as in yeast) or lactic acid (as in muscles).
4. Aerobic respiration produces a considerable amount of energy.	4. Much less energy is produced in anaerobic respiration.

43. Ans.

- (i) Silk moth
- (ii) Worm B: Silkworm; Tree C: Mulberry tree
- (iii) Silk
- (iv) Reeling
- (v) Mulberry silk

44. Ans. The thermometer used for measuring the temperature of the human body is called a clinical thermometer. The range of a clinical thermometer is from 35°C to 42°C. A clinical thermometer cannot be used to measure high temperatures because it has been designed to measure only human body temperature which varies over a short range. If it is used to measure high temperatures, then it will get damaged.