

Class: 7
Subject: Science
Topic: OASK1507A103
No. of Questions: 22

Time: 3 Hrs.

M.M. 100

General Instructions

1. The question paper consists of 22 questions and is divided into four sections, A, B, C and D.
2. All questions are compulsory.
3. Section A comprises question numbers 1 to 10. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
4. Section B comprises question numbers 11 to 15. These are SAQs carrying two marks each.
5. Section C comprises question numbers 16 to 20. These are SAQs carrying four marks each.
6. Section D comprises question numbers 21 to 22. These are SAQs carrying five marks each.

SECTION – A

- Q1. Grass eaten by ruminants is stored in the
- (a) Rumen
 - (b) Liver
 - (c) Gall bladder
 - (d) Oesophagus

Sol. (a)
Grass eaten by ruminants is stored in the rumen. The rumen contains cellulose – digesting bacteria which digest the carbohydrate cellulose present in grass

- Q2. Which type of relationship is seen in algae and fungi in lichens?
- (a) Predator–prey
 - (b) Parasitic
 - (c) Saprophytic
 - (d) Symbiotic

Sol. (d)
Lichen is a symbiotic association between algae and fungi wherein both the organisms are mutually benefitted from each other. The alga provides food to the fungus, and the fungus, in turn, provides shelter to the alga

- Q3. Why does the temperature increase as the day advances?
(a) Due to slanting sun rays
(b) Due to perpendicular sun rays
(c) Due to inclined sun rays
(d) Due to global warming

Sol. (b)
The temperature increase as the day advances due to perpendicular sun rays.

- Q4. Which instrument is used to measure air pressure?
(a) Manometer
(b) Barometer
(c) Hydrometer
(d) Anemometer

Sol. (b)
A barometer is used to measure air pressure.

- Q5. What is biological weathering?
(a) Weathering caused by plant and animal activities
(b) Weathering caused only by plant activities
(c) Weathering caused by the action of air
(d) Weathering caused by the action of water

Sol. (a)
The process by which huge rocks are broken down into small particles by the action of heat, wind, rain and flowing water is called weathering. Biological weathering is caused by plant and animal activities.

- Q6. We tend to feel hungrier after
(a) Standing
(b) Exercise
(c) Resting
(d) Sleeping

Sol. (b)
During any physical activity or exercise, oxygen gets used up faster and a temporary deficiency of oxygen occurs on our muscles cells. Hence, we tend to feel hungrier to meet the increased energy demands.

- Q7. Angora wool is obtained from
- (a) Angora sheep
 - (b) Angora yak
 - (c) Angora goat
 - (d) Angora camel

Sol. (c)
Angora wool is obtained from Angora goats which are found in the hilly regions such as Jammu and Kashmir.

- Q8. Identify the correct stage of the silkworm life cycle as shown in the picture.



- (a) Female laying eggs
- (b) Pupa stage
- (c) Cocoon stage
- (d) Adult stage

Sol. (a)
The picture shows a female silk moth laying eggs. A female lays hundreds of eggs at a time.

- Q9. Which microorganism is responsible for the fatal blood disease called sorter's disease?
- (a) Virus, Anthrax
 - (b) Algae, Anthrax
 - (c) Bacteria, Anthrax
 - (d) Animal, Anthrax

Sol. (c)
Sorters are the people who separated the fleece of sheep into fibres of different quality. The bacterium anthrax causes fatal blood diseases called sorter's disease.

- Q10. Which of the following bases is used as a cleansing agent?
- (a) Magnesium hydroxide
 - (b) Calcium hydroxide
 - (c) Sodium hydroxide
 - (d) Ammonium hydroxide

Sol. (d)
Ammonium hydroxide is used as a cleansing agent.

SECTION – B

Q11. How are nutrients replenished in the soil?

Sol. Nutrients are replenished in the soil by two ways:

- (i) Addition of fertilizers and manures: Fertilizers and manures contain plants nutrients such as nitrogen, phosphorus, potassium etc. So, when fertilizers and manures are added to the soil in the field, the soil gets enriched with the necessary nutrients
- (ii) Growth of leguminous crops: The leguminous plants harbor nitrogen - fixing bacteria (Rhizobium) in their root nodules. These bacteria convert nitrogen into nitrogenous compounds which get mixed with the soil.

Q12. Why are nights foggy during winters?

Sol. During winters when temperature falls after sunset, water vapour condenses near the ground. The droplets hanging in the air form fog and hence, the nights are foggy in winters.

Q13. How do earthworms increase soil fertility?

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

Q14. How is energy released during anaerobic respiration?

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

Q15. (i) What is the purpose of scouring the sheared skin obtained from sheep?

(ii) How is it done?

Sol. (i) Scoring the sheared skin obtained from sheep helps to remove grease, dust and dirt from the fleece of sheep.
(ii) Scouring is done by thoroughly washing the sheared skin and hair in a soap solution and a lot of water to remove all the dirt. It can be done by hands or by machines.

SECTION - C

- Q16. (i) Explain how an insect gets trapped in the pitcher plant?
(ii) How do fungi germinate?

Sol. (i) Inside the pitcher of the pitcher plant, there is hair which is directed downwards. When an insect lands on the pitcher, the lid closes automatically. The trapped insect gets entangled in the hair of the pitcher and thus cannot escape. After some time, the insect dies in the pitcher.

(ii) The tiny fungal spores are generally present in the air. When they land on a wet and warm surface, they germinate and grow.

- Q17. (i) How is the camel adapted to survive in deserts?
(ii) How do rats and snakes survive in deserts?

Sol. (i) The following adaptation of camel help it to survive in deserts:
(a) It has long legs which prevents it from coming in contact with hot sand.
(b) It drinks excess amount of water in one go.
(c) It excretes less amount of urine

(ii) Rats and snakes avoid the high temperature of the day by residing in burrows during the day time and become active at night. They remain inactive and show lowered metabolic rate in response to high temperature and arid conditions (undergo aestivation).

- Q18. (i) Which soil horizon/section has the highest mineral content and why?
(ii) How is soil important for plant growth?

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

(ii) Soil is important for plant growth because
(a) It provides mechanical support to the plants
(b) It provides water and nutrients to the plants.

- Q19. (i) Why do muscle cells respire anaerobically?
(ii) Why do muscle cramps arise after heavy physical exercise?

Sol. (i) Our muscle cells respire anaerobically for a short period of time whenever there is a temporary deficiency of oxygen. When we do heavy physical exercise for several hours or do heavy weightlifting, the demand for energy increases. However, the supply of oxygen to produce the required energy is limited. So, anaerobic respiration takes place in the muscle cells to fulfill the increased energy demands of the body.

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

- Q20. Give reasons for the following:
- (i) Wool burns with a bad smell.
 - (ii) Wool is used for making winter clothing.
 - (iii) The quality of wool depends on the breed of sheep.
 - (iv) Shearing does not cause any pain to the sheep.

- Sol.
- (i) Wool is a pertinacious fibre and hence burns with a bad smell.
 - (ii) Wool fibre is extremely porous. The air in the pores acts as an insulator and does not allow the body heat to escape. Hence, wool is used for making winter clothing.
 - (iii) The quality of wool is judged on the basis of its thickness, length shine, strength and colour of the fibre, which in turn, depends on the breed of sheep.
 - (iv) In shearing the hair of sheep along with a thin layer of skin called fleece is removed from the body of sheep. Shearing does not causes any pain to the sheep because the uppermost thin layer of their skin is dead.

SECTION – D

- Q21. (i) What are the final products of photosynthesis? What happens to them?
(ii) Mention some of the special features of desert plants.

- Sol.
- (i) Glucose and oxygen are the final products of photosynthesis. Glucose is used by the plants for their growth and development. Excess of glucose is converted into starch which is stored in the plants as reserve food material. Oxygen is released into the atmosphere through the stomata of leaves.
 - (ii) The desert plants have scales or spine like leaves to reduce the loss of water by transpiration. These plants have green stems which carry out the process of photosynthesis.

- Q22. (i) What is the role played by the stomata in plants?
(ii) How do snakes respire?

- Sol.
- (i) Air containing carbon dioxide enters the plants through small opening called stomata. This air is used during photosynthesis and respiration. Oxygen produced during photosynthesis exits the plants through the stomata. Even the excess of water vapour is released into the atmosphere through these pores by the process of transpiration.
 - (ii) Snakes respire through the normal contraction and relaxation of the muscles present between the ribs. However, they lack a diaphragm.