

Kendriya Vidyalaya Class 8 Question Papers 2019

Science Solved Practice Paper

Hard Level • Descriptive Examination

No Multiple Choice Questions

Class
VIII

Subject
Science

Maximum Marks
80

Level
Hard

Section A – Very Short Answer Questions

10 × 1 = 10 Marks

Q1. Why is the ploughing of soil important before sowing seeds?

1 Mark

Solution:

Ploughing loosens and aerates the soil. It also helps the roots of plants penetrate deeper and improves the availability of water and nutrients.

Answer: Ploughing loosens and aerates the soil and helps roots grow properly.

Q2. Name the microorganism commonly used for making curd.

1 Mark

Solution:

Lactobacillus bacteria help convert milk into curd.

Answer: Lactobacillus

Q3. What is the main function of the cell membrane?

1 Mark

Solution:

The cell membrane separates the cell from its surroundings and controls the movement of substances into and out of the cell.

Answer: It protects the cell and regulates movement of substances.

Q4. Which force pulls objects towards the Earth?

1 Mark

Solution:

The gravitational force of the Earth attracts objects towards its centre.

Answer: Gravitational force

Q5. What happens to the pressure exerted by a force when the area of contact is decreased?

1 Mark

Solution:

Pressure increases when the same force acts over a smaller area.

Answer: Pressure increases.

Q6. Name the process by which plants lose water vapour through their leaves.

1 Mark

Solution:

The loss of water vapour from leaves through stomata is called transpiration.

Answer: Transpiration

Q7. What is the role of the fuse in an electric circuit?

1 Mark

Solution:

A fuse protects electrical appliances by melting and breaking the circuit when excessive current flows.

Answer: It protects the circuit from excessive current.

Q8. Which gas is necessary for combustion?

1 Mark

Solution:

Oxygen supports combustion.

Answer: Oxygen

Q9. What is the SI unit of force?

1 Mark

Solution:

The SI unit of force is Newton.

Answer: Newton (N)

Q10. Why can sound not travel through vacuum?

1 Mark

Solution:

Sound requires a material medium such as solid, liquid or gas for its propagation.

Answer: Sound needs a material medium to travel.

Section B – Short Answer Questions

10 × 2 = 20 Marks

Q11. Explain why seeds are not sown too deep inside the soil.

2 Marks

Solution:

Seeds require air, water and suitable temperature for germination. If seeds are placed too deep, they may not receive sufficient oxygen and may have difficulty reaching the surface after germination.

Answer: Seeds are sown at suitable depth so that they receive enough air, water and can emerge easily.

Q12. Why are antibiotics not effective against viral diseases?

2 Marks

Solution:

Antibiotics act against certain bacteria. Viruses have a different structure and reproduce inside host cells, so ordinary antibiotics do not kill viruses.

Answer: Antibiotics work against bacteria, not viruses.

Q13. Differentiate between metals and non-metals on the basis of conductivity and malleability.

2 Marks

Solution:

Metals generally conduct heat and electricity well and can be beaten into thin sheets. Non-metals generally have poor conductivity and are usually brittle in solid form.

Answer: Metals are generally good conductors and malleable, whereas non-metals are generally poor conductors and brittle.

Q14. Why does a sharp knife cut vegetables more easily than a blunt knife?

2 Marks

Solution:

A sharp knife has a smaller area of contact. For the same applied force, smaller area produces greater pressure.

Answer: A sharp knife produces greater pressure because its edge has a smaller area.

Q15. Explain why a person slips more easily on a wet floor.

2 Marks

Solution:

Water reduces the friction between the feet and the floor. With less friction, the feet can slide more easily.

Answer: Water reduces friction between the feet and the floor.

Q16. What is reproduction? Why is it important for living organisms?

2 Marks

Solution:

Reproduction is the biological process by which organisms produce new individuals of their own kind. It is important because it ensures the continuation of a species.

Answer: Reproduction produces new individuals and ensures continuation of species.

Q17. Why do we see lightning before hearing thunder?

2 Marks

Solution:

Light travels much faster than sound. Therefore, the flash of lightning reaches our eyes before the sound of thunder reaches our ears.

Answer: Light travels much faster than sound.

Q18. Why should fossil fuels be used carefully?

2 Marks

Solution:

Coal and petroleum are formed over millions of years and exist in limited quantities. Their excessive use also causes air pollution and increases greenhouse gas emissions.

Answer: Fossil fuels are limited resources and their excessive use causes pollution.

Q19. Explain why the pressure of a liquid increases with depth.

2 Marks

Solution:

As depth increases, the amount of liquid above a point increases. Therefore, the weight of liquid pressing on that point increases, producing greater pressure.

Answer: Liquid pressure increases with depth because the weight of liquid above the point increases.

Q20. Why does a metal spoon become hot when left in a cup of hot tea?

2 Marks

Solution:

Heat travels through the metal spoon from the hotter end near the tea towards the cooler end. Metals are good conductors of heat.

Answer: Heat is transferred through the metal by conduction.

Section C – Application Based Questions

10 × 3 = 30 Marks

Q21. A farmer grows wheat in the same field every year and notices that the crop yield is decreasing. Explain two possible reasons and suggest suitable measures. 3 Marks

Solution:

Continuous cultivation of the same crop can remove the same nutrients from the soil repeatedly. The soil may also become deficient in important minerals. Suitable measures include: 1. Adding manure or suitable fertilisers. 2. Practising crop rotation. 3. Growing leguminous crops to improve soil fertility.

Answer: Nutrient depletion can reduce yield. Crop rotation and proper use of manure or fertilisers can improve soil fertility.

Q22. A student places a potted plant in darkness for several days. What changes would you expect and why? 3 Marks

Solution:

The plant will not receive sufficient light for normal photosynthesis. Its leaves may become pale or yellowish and its growth may become weak. Plants need sunlight to prepare food through photosynthesis.

Answer: The plant becomes weak and its leaves may turn pale because insufficient light reduces photosynthesis.

Q23. A person pushes a heavy box but it does not move. Is the person applying force? Explain.

3 Marks

Solution:

Yes. The person is applying muscular force on the box. However, the frictional force between the box and floor may be equal to or greater than the applied force. Therefore, the net force may be zero and the box does not move.

Answer: Yes, force is applied, but friction can balance the applied force, preventing motion.

Q24. Why are the handles of cooking utensils generally made from materials such as plastic or wood?

3 Marks

Solution:

Plastic and wood are poor conductors of heat. They reduce the transfer of heat from the hot utensil to our hands. Therefore, they make the utensil safer to hold.

Answer: Plastic and wood are poor conductors of heat and help protect our hands.

Q25. Explain what happens when an electric current passes through a bulb connected to a cell.

3 Marks

Solution:

The cell provides electrical energy. When the circuit is closed, current flows through the conducting wires and the filament of the bulb. The filament becomes hot and produces light.

Answer: Electrical energy from the cell is converted mainly into light and heat energy in the bulb.

Q26. A student hears an echo 2 seconds after shouting near a cliff. If the speed of sound is 340 m/s, calculate the distance of the cliff from the student. 3 Marks

Solution:

The sound travels to the cliff and returns. Total distance travelled: = Speed $\times$ Time =
 $340 \times 2 = 680$ m Distance of cliff: = $680/2 = 340$ m

Answer: Distance of cliff = 340 m

Q27. Explain why burning coal in a closed room can be dangerous. 3 Marks

Solution:

Burning coal consumes oxygen. Incomplete combustion can also produce carbon monoxide, a poisonous gas. In a closed room, gases can accumulate and reduce the amount of oxygen available for breathing.

Answer: Burning coal in a closed room can reduce oxygen and may produce poisonous carbon monoxide.

Q28. Explain how fertilisation occurs in human beings. 3 Marks

Solution:

During reproduction, the male reproductive cell called sperm fuses with the female reproductive cell called ovum. This fusion forms a zygote. The zygote undergoes repeated divisions and develops into an embryo.

Answer: Fertilisation is the fusion of sperm and ovum to form a zygote.

Q29. Why does a person wearing snow shoes sink less into snow than a person wearing ordinary shoes? 3 Marks

Solution:

Snow shoes have a larger surface area. For the same body weight, the force is distributed over a larger area. Therefore, pressure on the snow is reduced.

Answer: Snow shoes increase the area of contact and reduce pressure on the snow.

Q30. Explain how deforestation can affect rainfall and the water cycle.

3 Marks

Solution:

Trees release water vapour into the atmosphere through transpiration. Deforestation reduces the amount of water vapour released. It can disturb the water cycle and may contribute to reduced rainfall and increased soil erosion.

Answer: Deforestation reduces transpiration and can disturb the water cycle and rainfall patterns.

Section D – Long Answer Questions

5 × 4 = 20 Marks

Q31. Explain the process of crop production from preparation of soil to storage of grains.

4 Marks

Solution:

The major steps are: **1. Preparation of soil:** The soil is loosened and turned using a plough.

2. Sowing: Healthy seeds are selected and sown at suitable depth and distance.

3. Adding manure and fertilisers: Nutrients are supplied to improve soil fertility and crop growth.

4. Irrigation: Crops are supplied with adequate water.

5. Protection from weeds: Unwanted plants are removed.

6. Harvesting and storage: Mature crops are harvested, grains are separated and properly dried before storage.

Answer: Crop production involves soil preparation, sowing, nutrient supply, irrigation, weed control, harvesting and safe storage.

Q32. Explain the difference between physical and chemical changes with suitable examples. Also state whether rusting of iron is a physical or chemical change. 4 Marks

Solution:

A physical change generally changes the physical properties of a substance without forming a new substance. Example: Melting of ice. A chemical change results in the formation of one or more new substances with different properties. Example: Burning of wood. Rusting of iron is a chemical change because iron reacts with oxygen and moisture to form rust, a new substance.

Answer: Melting of ice is a physical change, while burning and rusting are chemical changes. Rusting is a chemical change.

Q33. Describe the structure and functions of the human digestive system. 4 Marks

Solution:

The human digestive system consists of several organs. **Mouth:** Food is chewed and mixed with saliva.

Oesophagus: It carries food from the mouth to the stomach.

Stomach: Food is mixed with digestive juices and partially digested.

Small intestine: Digestion is completed and nutrients are absorbed into the blood.

Large intestine: Water is absorbed and waste is formed.

Rectum and anus: Undigested waste is removed from the body.

Answer: The digestive system breaks food into simpler substances and absorbs useful nutrients.

Q34. Explain pressure with examples showing how force and area affect pressure. 4 Marks

Solution:

Pressure is the force acting on a unit area.

$$\text{Pressure} = \text{Force} / \text{Area}$$

For the same force, pressure increases when the area decreases. For example, a sharp knife cuts more easily because its edge has a small area. Similarly, pressure decreases when the same force acts over a larger area. For example, school bags have broad straps to distribute their weight over a larger area of the shoulders.

Answer: Pressure increases with force and decreases when the area of contact increases.

Q35. Explain the causes of air pollution and describe four measures that can help reduce it. 4 Marks

Solution:

Air pollution can be caused by vehicle exhaust, industrial smoke, burning of fuels, garbage burning and other human activities. Measures to reduce air pollution include:

1. Using public transport or cleaner transportation.
2. Increasing tree plantation.

3. Avoiding unnecessary burning of waste.
4. Using cleaner fuels and controlling industrial emissions.

Answer: Air pollution can be reduced by controlling emissions, avoiding open burning, increasing greenery and using cleaner sources of energy.

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