

CBSE Class 10 Science Sample Paper

Section-I: Choose the correct answers:

(15 x 1 =15 marks)

- Ethane, with the molecular formula C_2H_6 has
 - 6 covalent bonds.
 - 7 covalent bonds.
 - 8 covalent bonds.
 - 9 covalent bonds.
- Butanone is a four-carbon compound with the functional group
 - Carboxylic acid.
 - Aldehyde.
 - Ketone.
 - Alcohol.
- While cooking, if the bottom of the vessel is getting blackened on the outside, it means that
 - The food is not cooked completely.
 - The fuel is not burning completely.
 - The fuel is wet.
 - The fuel is burning completely.
- Green plants are the first living organism in a food chain. Where do plants get the energy that they pass along to the primary consumers in their food chains?
 - From decomposers
 - From the Sun
 - From secondary consumers
 - From other plants
- _____ provide evidence that living things evolved from earlier species.
 - Fossils
 - Videos of dinosaurs
 - Religions
 - Historical fictions
- An unknown element is a soft metallic solid. It is highly reactive and has a low melting point. In which group of the periodic table is it most likely to be found?
 - 2
 - 18
 - 1
 - 17
- What products are formed during the following reaction?
 $H_2SO_4(aq) + KOH(aq) \rightarrow$
 - KH and SO_2
 - K , SO_2 and H_2O
 - KS , O_2 and H_2
 - K_2SO_4 and H_2O

8. Which of the following materials is the best conductor of electricity?
- A. Wood
 - B. Rubber
 - C. Plastic
 - D. Iron
9. Which of these is required to make a circuit?
- A. Two batteries
 - B. A light bulb
 - C. Static electricity
 - D. A closed loop
10. Two parents with blue eyes have a child with blue eyes. What colour eyes will their second child most likely have?
- A. blue
 - B. green
 - C. black
 - D. brown
11. What happens in the process of the water cycle?
- A. Water transforms into other types of liquid.
 - B. Water changes from one state to another.
 - C. Water keeps the same physical properties.
 - D. Water becomes a gas in between each step.
12. According to the Arrhenius definition, an acid is a substance that
- A. Increases the pH when it forms a water solution.
 - B. Receives an H^+ ion from water.
 - C. Donates an H^+ ion to a base.
 - D. Increases the concentration of H^+ ions when dissolved in water.
 - E. Reacts with a base to form a salt.
13. Which of the following elements has the most metallic character?
- A. beryllium (Be)
 - B. silicon (Si)
 - C. sodium (Na)
 - D. francium (Fr)
 - E. copper (Cu)

14. The kidneys in human beings are a part of the system for

- A. nutrition.
- B. respiration.
- C. excretion.
- D. transportation

15. The autotrophic mode of nutrition requires:

- A. carbon dioxide and water
- B. chlorophyll.
- C. sunlight.
- D. all of the above.

Section II: Each question carries 1 mark

(5 x 1 = 5 marks)

1. Give an example of a double displacement reaction other than the one given in Activity 1.10.
2. Why does the colour of copper sulphate solution change when an iron nail is dipped in it?
3. Oil and fat containing food items are flushed with nitrogen. Why?
4. Why does distilled water not conduct electricity, whereas rain water does?
5. Give two important uses of washing soda and baking soda.

Section III: Each question carries 2 marks:

(9 X 2 = 18 marks)

1. Explain the meanings of malleable and ductile.
2. Which gas is produced when dilute hydrochloric acid is added to a reactive metal? Write the chemical reaction when iron reacts with dilute H₂SO₄.
3. What are alloys?
4. How many structural isomers can you draw for pentane?
5. How would you distinguish experimentally between an alcohol and a carboxylic acid?
6. What criteria do we use to decide whether something is alive?
7. What is the function of digestive enzymes?
8. What are the components of the transport system in human beings? What are the functions of these components?
9. How is the amount of urine produced regulated?

Section IV: Each question carries 3 marks:

Short answer type questions:

(9 x 3 = 27 marks)

1. What are the necessary conditions for autotrophic nutrition and what are its by-products?
2. What are the differences between aerobic and anaerobic respiration? Name some organisms that use the anaerobic mode of respiration.
3. Describe double circulation in human beings. Why is it necessary?
4. What is the function of receptors in our body? Think of situations where receptors do not work properly. What problems are likely to arise?
5. What are plant hormones?

6. Why are some patients of diabetes treated by giving injections of insulin?
7. Why is variation beneficial to the species but not necessarily for the individual?
8. Why do we prefer a convex mirror as a rear-view mirror in vehicles?
9. The refractive index of diamond is 2.42. What is the meaning of this statement?

Section V: Each question carrier 5 marks:

Long answer type questions:

(3 x 5= 15 marks)

1. We wish to obtain an erect image of an object, using a concave mirror of focal length 15cm. What should be the range of distance of the object from the mirror? What is the nature of the image? Is the image larger or smaller than the object? Draw a ray diagram to show the image formation in this case.

Or

An object 5 cm in length is held 25cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and the nature of the image formed.

2. Explain how sexual reproduction gives rise to more viable variations than asexual reproduction. How does this affect the evolution of those organisms that reproduce sexually?

Or

How is the equal genetic contribution of male and female parents ensured in the progeny?

3. Explain the mechanism of the cleaning action of soaps.

Or

Which physical and chemical properties of the elements were used by Mendeleev in creating his periodic table?