

CBSE
Class IX Science
Sample Paper - 8

Time: 3 hrs.

Total Marks: 80

General Instructions:

- The question paper comprises five sections – A, B, C, D and E. You are to attempt all the sections.
- All questions are compulsory.
- Internal choice is given in sections B, C, D and E.
- Question numbers 1 and 2 in Section A are one mark questions. They are to be answered in one word or in one sentence.
- Question numbers 3 to 5 in Section B are two marks questions. These are to be answered in about 30 words each.
- Question numbers 6 to 15 in Section C are three marks questions. These are to be answered in about 50 words each.
- Question numbers 16 to 21 in Section D are five marks questions. These are to be answered in about 70 words each.
- Question numbers 22 to 27 in Section E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

Section A

1. What is the objective of mixed cropping? (1)
2. Name two processes which play an important role in the oxygen cycle. (1)

Section B

3. What is the significance of the ozone layer? (2)
4. A racing car moving with a velocity of 20 m/s is stopped by applying brakes and producing a uniform acceleration of 1 m/s^2 . What is the distance travelled by the car before it comes to rest? (2)

OR

A body starts to slide over a horizontal surface with an initial velocity of 0.6 m/s. Due to friction, its velocity decreases at the rate of 0.05 m/s^2 . How much time will it take for the body to stop?

5. Define an ion. In case of sodium chloride, name the cation and anion and give symbols for each of them. (2)

Section C

6. State the limitations of J.J. Thomson's model of an atom. (3)

7. Mention any three advantages of irrigation. (3)

8. Give reasons: (3)

- (a) Naphthalene balls disappear with time without leaving any solid residue.
- (b) We can get the smell of perfume even while sitting several metres away.
- (c) After a hot sunny day, people sprinkle water on the roof or open ground.

9. Define uniform velocity. Give two ways by which the change of velocity can be achieved. (3)

10. Define balanced and unbalanced force.

An object weighing 20 N is kept on the floor. A child tries to push the object by applying a force of 20 N. Does the object move along the direction of force applied by the child?

Which force was applied to the object? (3)

11. A wooden block has a mass of 5 kg. The length, breadth and height of this wooden block are 75 cm, 50 cm and 25 cm, respectively. Find the pressure on the floor on which it is kept when (3)

- i) Sides measuring 50 cm and 25 cm are in contact with the floor.
- ii) Sides measuring 75 cm and 50 cm are in contact with the floor.

OR

Calculate the force of gravitation between two boxes of mass 15 kg and 25 kg separated by a distance of 20 cm from one another when placed on the floor.

($G = 6.7 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$).

12. Which of the following has more number of atoms? (3)

- (i) 10 g nitrogen (N_2) gas
- (ii) 10 g ammonia (NH_3) gas

OR

What is atomicity? State the atomicity of the following elements:

- (i) Neon
- (ii) Nitrogen
- (iii) Phosphorus
- (iv) Sulphur

13. The number of dengue cases increased in Seema's village in the last one year. She had read in her textbook that diseases like dengue spread through mosquitoes which breed in stagnant water. She immediately discussed this with her friends and decided to get rid of the mosquitoes in the water bodies in their locality. They also took help of the nearest municipal office. Answer the following questions based on the above information: (3)

- (a) Suggest any two measures for the prevention of diseases caused by mosquitoes.
- (b) Which values are displayed by Seema in taking the initiative?
- (c) Suggest one school activity to promote such values in school students.

14. How does the cell wall help the cell to survive in a hypotonic solution? (3)

OR

What would happen if all the cells of our body were of the same shape and size?

15. Near the coastal areas, wind blows from the sea towards the land during the day and from the land towards the sea during the night. Explain giving reason. (3)

Section D

16. Name the five classes of vertebrates. Compare any two classes on the basis of (5)

- (a) Habitat
- (b) Covering of skin
- (c) Respiratory organs
- (d) Chambers of the heart
- (e) Reproduction

17. (5)

- (a) A car weighing 900 kg and travelling with a velocity of 25 m/s stops at a distance of 100 m while decelerating uniformly. What is the force exerted on the car when the brakes are applied?
- (b) What is the work done by the brakes?

OR

- a) Write an expression for kinetic energy of the body.
- b) Define potential energy. What is the SI unit of potential energy?
- c) What is the equation for work done in raising the object to a certain height? To which expression of energy is it similar?
- d) Calculate the kinetic energy of a body of mass 4 kg moving with a velocity of 0.1 m/s.

18.(a) Differentiate between the three states of matter on the basis of the following properties: (5)

(i) Intermolecular forces (ii) Arrangement of molecules

(b) Liquids generally have lower density compared to solids, but ice floats on water. Give reason.

OR

What is electrovalency? Explain the formation of an electrovalent bond with the help of an example.

19.(a) What are the effects of force? (5)

(b) Give the full form of SONAR.

What are the other applications of ultrasonic sound? (Any two)

20. Give reasons: (5)

- Majority of children in many parts of India are already immune to Hepatitis A.
- Chronic diseases cause more harm to the body than acute diseases.
- A balanced diet is necessary for maintaining a healthy body.
- Social harmony and good economic conditions are necessary for good health.
- Infectious diseases are called communicable diseases.

OR

(a) Give reasons for the following:

(i) Bryophytes are called amphibians of the plant kingdom.

(ii) From Phylum Platyhelminthes onwards, animals are categorised as 'triploblastic'.

(iii) The presence of a coelom in an animal's body is considered advantageous.

(b) What are oviparous animals?

(c) Name the phylum in which pharyngeal gill slits are present.

21. (5)

(a) Differentiate between evaporation and boiling.

(b) How does evaporation cause cooling?

Section E

22. A teacher studied the slide given below under a compound microscope. Which of the following students identified it correctly? Why? (2)



- A. Sheela - Cheek cells
- B. Madhu - Squamous epithelium
- C. Balaji - Parenchyma
- D. Shanti - Onion peel

23. Aditi observed the following while looking at a permanent slide. (2)

- Cells are long and cylindrical.
- Light and dark bands are present.

- (a) Which cell/tissue did Aditi observe on the slide?
 (b) What are the functions of this cell/tissue?

OR

You can bite fruits like guava, grapes, banana etc. but not a piece of wood. Why?

24. How will you separate the following:

- (i) Oxygen from air
- (ii) Iron filings from sugar
- (iii) Crystals of alum from impure samples
- (iv) Common salt from ammonium chloride

OR

While separating the components of a mixture of sand, camphor and common salt, Raman added water to the mixture in a beaker and stirred it well. He observed that a component is dissolved. Identify the dissolved component and suggest a method of separation for the other two components.

25. Why is digestion classified as a chemical change? (2)
26. Why is it easier to swim in seawater rather than in the fresh water of a swimming pool? (2)
27. How can two whales which are hundred kilometres away communicate with each other? (2)

OR

The middle ear consists of how many bones? Name them.