



INDIAN SCHOOL DARSAIT
SAMPLE QUESTION PAPER-2
SCIENCE (086)

Class: IX

Max. Marks: 80

Date:

Time: 3 hrs

General Instructions:

- (i) The question paper comprises two sections, A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) All questions of **Section-A and B** are to be attempted separately.
- (iv) There is an internal choice in **three questions** of three marks each, **two questions** of five marks each and one question of two marks each.
- (v) Question numbers 1 and 2 in **Section-A** are **one mark** question. They are to be answered in one word or in one sentence.
- (vi) Question numbers 3 to 5 in **Section- A** are **two marks questions**. These are to be answered in 30 words each.
- (vii) Question numbers 6 to 15 in **Section-A** are **three marks questions**. These are to be answered in about 50 words each.
- (viii) Question numbers 16 to 21 in **Section-A** are **5 marks questions**. These are to be answered in 70 words each.
- (ix) Question numbers 22 to 27 in **Section- B** are based on practical skills. Each question is a **two marks** question. These are to be answered in brief.

Section A

- 1. Why is it essential to remove weeds from the crop fields during the early stages of crop growth? 1
- 2. Define the terms. (a) Diffusion (b) Sublimation 1
- 3. Distinguish between mixtures and compounds. (Any two points) 2
- 4. The velocity of a body of mass 10 kg increases from 4m/s to 8 m/s when a force acts on it for 2 s . 2
 - (a) What is the momentum before the force acts?
 - (b) What is the momentum after the action of force?
 - (c) What is the gain in the momentum per second?
 - (d) What is the value of force?
- 5. Two boys A and B were given a task to carry 20 kg load from ground level to a height of 10 m. A completed the work in 40 s and B in 60 s. Calculate the power in both cases. Who has greater power? 2
- 6. Derive by graphical method: 3

i) $v=u+at$

ii) $s=ut+\frac{1}{2}at^2$

7. a) When we stand on loose sand, our feet go deep into the sand, but when we lie down on the sand our body does not go deep into the sand. Why? 3
b) State the meaning of 1pascal. A boy of mass 40kg is standing on loose sand. If the area of his feet is $0.04m^2$. Calculate the pressure exerted by the boy on the sand. ($g=10m/s^2$)

OR

- a) Give two applications of universal law of gravitation.
b) What happens to the gravitational force between two objects when the distance between them is
(i) doubled (ii) halved
8. a) What happens to the kinetic energy when: 3
(i) The mass of the body is doubled at constant velocity?
(ii) The velocity of the body is doubled at constant mass?
(iii) The mass of the body is doubled but the velocity is reduced to half?
(b) Two bodies of equal masses move with the uniform velocities v and $3v$ respectively. Find the ratio of their kinetic energies.
9. (a) Tabulate the differences in the three states of matter with respect to the following. 3
(i) Compressibility (ii) Kinetic energy
(b) Evaporation causes cooling. Give reason.
10. (a) Draw a flow diagram of the steps involved in the separation of components of air. Also name the technique used for this process. 3
(b) Crystallisation is a better technique than evaporation for the purification of solids. Why?

OR

- (a) Write the principle behind the separation of oil and water. Also draw a neat labelled diagram of the apparatus used in this separation.
(b) Which of the following will show Tyndall effect?
(i) Salt solution (ii) Milk
(iii) Copper sulphate solution (iv) Starch solution
11. (a) Explain any two factors that are responsible for soil formation. 3
(b) What is the role of atmosphere in climate control?
12. a) Name the functional unit of DNA that carries genetic information 3
b) What is the relationship between chromatin material and chromosomes?
c) Mention any two functions of the endoplasmic reticulum.
13. a) What is the significance of binomial nomenclature? 3
b) Who introduced the system of scientific naming?

c) Write any three conventions followed while writing the scientific names.

OR

a) Write the four main characteristics of Chordates

b) List one difference between primitive and advanced organisms.

14. Draw a well labeled diagram of carbon cycle. 3

15. In a village due to insufficient rain farmers are worried about their crops though a river flows near the village. So, the Panchayat representatives decide to build a reservoir in that village. 3

a) Define irrigation

b) What is the benefit of building a reservoir in the village?

c) What values are exhibited by the Panchayat representatives?

16. a) Explain the working and application of a SONAR. 5

b) A ship sends out ultrasound produced by transmitter that returns from the sea bed and detected after 3.42 s. If

the speed of ultrasound waves through sea water is 1530 m/s, what is the distance of the sea bed from the ship?

OR

(a) What is the audible range of the average human ear?

(b) What is the range of frequencies associated with infrasound and ultrasound?

(c) Explain how defects in a metal block can be detected using ultrasound.

17. (a) State and explain Newton's second law of motion and obtain a mathematical formula for force. 5

(b) A truck starts from rest and rolls down a hill with constant acceleration. It travels a distance of 400m in 20 s. Find its acceleration. Find the force acting on it, if its mass is 7 metric tonnes.

18. (a) State and illustrate the law of definite proportions. 5

(b) Which has more number of atoms, 100gm of potassium or 100gm of iron?

[Atomic mass of potassium = 39 u and iron = 56 u]

(c) Write one example each for a diatomic and a polyatomic molecule.

19. (a) What are isotopes? Write any two uses of isotopes. 5

(b) Two elements X and Y having atomic numbers 6 and 17 respectively.

Write the electronic configuration of these elements and find out their valency.

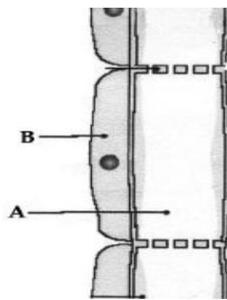
(c) Write any two features of Thomson's model of atom.

20. a) Mention the region where apical meristem is present and state one function of this tissue. 5

b) Distinguish between chloroplast and leucoplast with respect to their pigments and function

c) How does the cork form?

d) Identify the type of plant tissue given below. Where in the stem of a plant would you find this tissue ?



OR

- a) Name the tissue which helps in transportation of oxygen that we inhale to various parts of our body. Write the composition of this tissue.
- b) Name the following :
 - (i) Tissues that form the inner lining of our mouth.
 - (ii) Tissues that transport water in plants
 - (iii) Tissues present in coconut husk.
 - (iv) Tissues that carry signals from various parts of our body to brain
 - (v) Tissues that forms the lining of kidney.
 - (vi) Tissue present in ear and nose.

21. a) What is immunisation? 5
- b) What is HIV?
- c) It is difficult to make antiviral medicine than making antibacterial medicine. Why?
- d) List two differences between infectious and non infectious diseases.

Section B

22. The volume of 50 g of a substance is 20 cm. If the density of water is 1g/cm, will the substance float or sink? 2
23. A longitudinal pulse was created in a slinky of length 8m by a group of four students A, B, C, D. 2
They observed that the pulse completed its five to and fro journey in 16 s. On the basis of these observations calculate the speed of the pulse in the slinky .
24. (a) Name two substances which can be removed from a mixture of sand by sublimation. 2
- (b) 2gm of zinc metal is completely burnt in air to form zinc oxide. It was found that mass of zinc oxide is 2.5gm. Is the law of conservation of mass violated? Explain.
25. Write any two differences in properties between colloids and true solutions. 2
26. Write any two precautions that should be taken while preparing a temporary mount of the cheek cells. 2
27. Write any four adaptation of fishes. 2