Goa Board
Class IX Science
Term 2
Sample Paper – 3

Time: 3 hrs **Total Marks: 90**

General Instructions:

1. The question paper comprises of two sections, A and B. You are to attempt both the sections. All questions are compulsory.
2. All questions of **Section A** and all questions of **Section B** are to be attempted separately.
3. Question numbers **1 to 3** in **Section A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
4. Question numbers **4 to 6** in **Section A** are **two marks** questions. These are to be answered in about **30 words** each.
5. Question numbers **7 to 18** in **Section A** are **three marks** questions. These are to be answered in about **50 words** each.
6. Question numbers **19 to 24** in **Section A** are **five marks** questions. These are to be answered in about **70 words** each.
7. Question numbers **25 to 33** in **Section B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.
8. Question numbers **34 to 36** in **Section B** are questions based on practical skills and are **two marks** questions.

SECTION A
Attempt all questions from this section.

1. When an object moves in a circular path, what is the work done? [1]

2. What do the following abbreviations stand for? [1]
(a) 2O
(b) O_2

3. What is the percentage of nitrogen and oxygen in the air? [1]

4. Give any two important applications of the Archimedes' principle. [2]

5. [2]

(a) Identify any two features possessed by Chordates.

(b) In which class would you place an organism which has:

i. A scaly exoskeleton and a bony endoskeleton.

ii. A scaly exoskeleton and lays eggs outside water.

6. Write about the discovery and the general properties of neutrons. [2]

7. What are the two types of natural resources? Define and give an example of each. [3]

8. [3]

(a) A stone of mass 2 kg is falling from rest from the top of a steep hill. What will be its kinetic energy after 5 s? [Take g = 9.8 m/s^2]

(b) Write an expression for the work done when a force is acting on an object in the direction of its displacement.

9. Draw a schematic diagram for carbon cycle in nature. [3]

10. [3]

(a) Why sound waves in air are called longitudinal waves?

(b) A bat can hear sound at frequencies up to 120 kHz. Determine the wavelength of sound in air at this frequency. Take the speed of sound in air as 344 m/s.

11. Write three points of differences between sound waves and light waves. [3]

12. In which of the following cases will the work done by a force is maximum? [3]

Case (i) When the angle between the direction of the force and displacement is zero.

Case (ii) When the angle between the direction of the force and displacement is 90°.

13. How will you differentiate a high pitch sound from a low pitch sound with the help of a graph? [3]

14. What are the steps involved in writing the chemical formulae of compounds? [3]

15. [3]

(a) How many grams of chlorine are contained in one mole of chlorine? [Gram atomic mass of Chlorine = 35.5 g]

(b) How many molecules are there in 1 g of chlorine?

16. [3]

(a) State any two conditions essential for good health.

(b) How are antibiotics effective in the treatment of some diseases?

17. How does cholera spread through water? [3]

18. What is the need for classification? [3]

19. Write a short note on Phylum Arthropoda. [5]

20. [5]

(a) Explain the work done by a person in the following conditions.

i. When he is standing at a place holding a suitcase in his hand.

ii. When he is moving, holding the suitcase in his hands.

(b) A certain household has consumed 250 unit of energy during a month. How much the energy is consumed in joules?

21. [5]

(a) What is buoyancy? What are the factors on which the buoyant force depends?

(b) State Archimedes Principle and its applications.

22. Write a brief note on the discovery of electrons and protons. [5]

23. [5]

(a) Define water cycle.

(b) Draw a schematic diagram of water cycle in nature.

(c)

i. What is nitrogen fixation?

ii. What is the effect of oxygen on nitrogen fixation?

24. [5]

(a) Give reasons for the following:

i. Bryophytes are called amphibians of plant kingdom.

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

iii. The presence of 'coelom' in an animal's body is considered as advantageous.

(b) What are oviparous animals?

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

SECTION B

25. In which of the following gases, is the sound of speed maximum? [1]
(a) Air
(b) Hydrogen
(c) Carbon-dioxide
(d) Helium

26. In a spring balance, the space between 0 and 25 g marks is divided into 10 equal parts. The least count of the spring balance is [1]
(a) 2.5 gwt
(b) 25 gwt
(c) 0 gwt
(d) 15 gwt

27. Before suspending a stone of mass 100 g, the spring balance showed a reading of 2 g. What will be the reading after the stone is suspended? [1]
(a) 98 g
(b) 99 g
(c) 100 g
(d) 102 g

28. Volume of a glass topper is 12.5 cm^3 and its density is 2.4 g cm^{-3}. To weigh it, we shall prefer a spring balance of range [1]
(a) 25 g
(b) 100 g
(c) 250 g
(d) 1000 g

29. In a graduated measuring cylinder, there are four additional marks between 0 ml and 5 ml marks. Using this measuring cylinder, we can find volume to an accuracy of [1]
(a) 1 ml
(b) 4 ml
(c) 1/4 ml
(d) 1/5 ml

30. Thrust exerted by an iron cuboid when placed on sand is equal to the [1]
(a) weight of the cuboid
(b) mass of the cuboid
(c) weight per unit surface area
(d) mass per unit surface area

31. Which of the following belongs to Thallophyta? [1]

(a) Pinus
(b) Spirogyra
(c) Fern
(d) All of them

32. What is the chemical formula of the precipitate formed in the experiment for the verification of the law of conservation of mass? [1]

(a) Na_2SO_4
(b) $CaSO_4$
(c) $BaCO_3$
(d) $BaCl_2$

33. Which animal belongs to the phylum Arthropoda? [1]

A

B

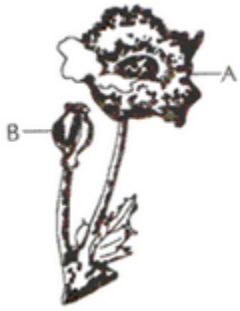
C

D

(a) A
(b) B
(c) C
(d) D

34. Explain the principle and conclusion of an activity of law of conservation of mass. [2]

35. A student carefully observes the parts labeled A and B in the given diagram and classifies the plant correctly as: [2]



(a) Bryophyte
(b) Pteridophyte
(c) Gymnosperm
(d) Angiosperm

36. During the experiment of reflection of sound, if we cover the reflecting surface with a curtain, then the reflected sound will [2]
(a) Not be heard at all
(b) Be more louder
(c) Be less louder
(d) Be same