Goa Board
Class IX Science
Term 2
Sample Paper – 5

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

1. Is potential energy a vector quantity or a scalar quantity? [1]

2. What is the logical explanation of the laws of chemical combination? [1]

3. Name the bacteria responsible for peptic ulcers. [1]

4. [2]

(a) Give any two examples of longitudinal waves.
(b) What is the most essential property of a wave motion and why?

5. [2]

(a) Which phylum of kingdom animalia has a spiny body? Give one example of it.
(b) Write the name of the class to which the following belong:
   i. Sea horse
   ii. King cobra

6. What are the types of molecules? [2]

7. [3]

(a) Classify soil on the basis of the agricultural point of view.

(b) What would happen if all the oxygen present in the environment is converted to ozone?

8. [3]

(a) Calculate the work done in lifting 200 kg of water through a vertical height of 6 meters. (Assuming g = $10 m/s^2$)

(b) When an object moves on a circular path, what is the work done?

9. What are the different ways in which the water gets polluted? How does it affect the life forms? [3]

10. [3]

(a) Define frequency and wavelength with reference to sound.

(b) What is echo? Give the formula for the time of echo.

11. [3]

(a) Establish a relation between the wavelength, frequency and the speed of sound in a medium.

(b) Give an example of transverse waves.

12. Which would have greater effect on the kinetic energy of an object, doubling the mass or doubling the velocity? [3]

13. A stone is dropped from the top of a tower 125 m high into a pond of water at the base of the tower. When is the splash heard at the top? [3]
($g = 10 m/s^2$ and speed of sound = 340 m/s)

14. [3]

(a) Which postulate of Dalton's atomic theory is the result of the law of conservation of mass?

(b) Name the term used for the symbolic representation of a molecule of an element or a compound? Give an example of it.

(c) What is an ion?

15. How many moles of Cr are there in 85 g of Cr2S3? (Cr = 52, S = 32) [3]

16. Differentiate between chondrichthyes and osteichthyes. [3]

17. Explain any three reasons to justify that prevention of diseases is better than their cure. [3]

18. [3]

(a) How do air borne diseases like common cold spread?

(b) What do we call microorganisms which cause diseases? Give one example.

19. [5]

(a) Draw the structure of the AIDS virus.

(b) List four modes of transmission of the virus of this disease.

20. [5]

(a) Calculate the power of an engine which can lift 200 kg of water to store in a tank at a height of 10 m in 4.9 s. Also, express in horse power. ($g = 9.8\ m/s^2$).

(b) What type of energy is stored in the spring of a watch?

(c) What is the work done by the tension in the string of a sample pendulum?

21. Describe an activity to show that sound is a mechanical wave and needs a material medium for its propagation. [5]

22. Explain Rutherford's α-particles scattering experiment with the help of a neat and labelled diagram. [5]

23. [5]

(a) Many Municipal Corporations are trying for water harvesting to improve the availability of water. Give reason.

(b) Rain water sometimes contains traces of acid. Why? Explain in brief.

(c) Give examples of

i. Nitrifying bacteria

ii. Denitrifying bacteria

24. [5]

(a) Why whales are not grouped in fishes?

(b) What is bilateral symmetry?

(c) 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 'coelom' in an animal's body is considered as advantageous.

SECTION B

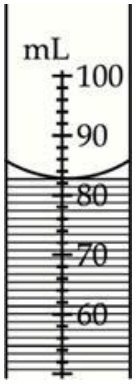
25. Two slinkies A and B are of the same length and made up of two different materials. The time taken by 10 pulses to travel the same distance in both of them is 60 seconds and 40 seconds respectively. It means that [1]

(a) The pulse travelled faster in A.
(b) The pulse travelled faster in B.
(c) The velocity of the pulse cannot be decided from the observation.
(d) The velocity of the pulse in both the slinkies is same.

26. While verifying the laws of reflection of sound, four students used different reflecting surfaces. The best result would be obtained by the student using the reflecting surface made of [1]

(a) A plastic board
(b) A polished metal sheet
(c) A rough cardboard sheet
(d) Thermocol sheet

27. In the diagram shown, a portion of a measuring cylinder in which a liquid is filled is shown. The least count of the measuring cylinder and the volume of the liquid filled in the cylinder respectively are: [1]



(a) 1 mL; 84 mL
(b) 2 mL; 84 mL
(c) 1 mL; 80.2 mL
(d) 2 mL; 88 mL

28. The mass of a solid object in air is 140 g while its mass when fully immersed in water is 95 g. Which of the following statements is correct about the object? [1]

(a) The volume of the object is 95 cm^3.
(b) The density of the object is 3.1 g/cm^3.
(c) The buoyant force acting on the object in water is 95 N.
(d) The density of the object is 0.25g/cm^3.

29. The sea water is denser than fresh water due to [1]
(a) Evaporation
(b) Mixing of sand
(c) Mixing of salts
(d) Stagnation

30. Apparent loss in weight is caused due to [1]
(a) Decrease in mass
(b) Decrease in volume
(c) Upward thrust exerted by the liquid
(d) Decrease in density

31. Which of the following is the characteristic feature of the ferns? [1]
(a) They have male and female cones.
(b) They have rhizoids.
(c) They have needle shaped leaves.
(d) Their plant body is differentiated into root, stem and leaves.

32. What is the colour of the precipitate formed in the experiment carried out for the verification of the law of conservation of mass? [1]
(a) Green
(b) White
(c) Blue
(d) Yellow

33. Identify the group of plants in which vascular tissues are present, but no seeds: [1]
(a) Bryophyta
(b) Pteridophyta
(c) Gymnosperm
(d) Angiosperm

34. In an experiment, 18.5 g of copper sulphate reacted with 11.0 g of sodium hydroxide to form 10.0 g of copper hydroxide and 19.5 g of sodium sulphate. Which law of chemical combination is illustrated by this data? Give reason for your choice. [2]

35. [2]
(a) If we place the porous surface at the back of the hollow tubes in the experimental setup of the reflection of sound then
(A) Sound will be heard with greater intensity than the incident sound.
(B) Sound will be heard with lesser intensity than the incident sound.
(C) Reflection of sound does not take place.
(D) Reflected sound will remain the same as incident sound.
(b) Explain why.

36. Which of the following organisms belong to Phylum Platyhelminthes? [2]

(a)

(b)

(c)

(d)