

**Goa Board  
Class IX Science  
Term 2  
Sample Paper – 6**

**Time: 3 hrs**

**Total Marks: 90**

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**General Instructions:**

1. The question paper comprises of **two sections, A and B**. You are to attempt both the sections.
2. All questions are compulsory.
3. All the questions of **Section-A** and **Section-B** are to be attempted separately.
4. Question numbers **1 to 3** in **Section - A** are **one mark** questions. These are to be answered in one word or one sentence.
5. Question numbers **4 to 6** in **section - A** are **two marks** questions, to be answered in about **30 words each**.
6. Question number **7 to 18** in **section-A** are **three marks** questions, to be answered in about **50 words**.
7. Question number **19 to 24** in **section-A** are **five marks** questions, to be answered in about **70 words**.
8. 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.
9. Question numbers **34 to 36** in Section B are questions based on practical skills and are two marks questions.

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**SECTION A**

1. State the factors on which the pressure applied on an object depends upon. [1]
2. State the law of constant proportion. [1]
3. Name two biologically important compounds which contain both oxygen and nitrogen. [1]
4. Write the form of energy possessed by the body in the following situations: [2]
  - (a) A coconut falling from the tree.
  - (b) An object raised to a certain height.
  - (c) Blowing wind.
  - (d) A child driving a bicycle on the road.
5. Explain the term atomicity with the help of examples. [2]

6. [2]  
(a) What are the two important characteristics of Hydra (Coelenterata)?  
(b) Identify the animal group having:  
i. A spiny body and radial symmetry.  
ii. Light and hollow bones
7. [3]  
(a) How is water vapour formed in the atmosphere?  
(b) What is the function of humus in the soil?
8. [3]  
(a) An echo is returned in 6 s. What is the distance of the reflecting surface from the source, given that the speed of sound is 342 m/s?  
(b) Give any two applications of SONAR.
9. [3]  
(a) State two conditions for echoes to be heard.  
(b) Bats cannot see still they catch their prey. Explain.
10. [3]  
(a) A body of mass 2 kg is thrown vertically upwards with an initial velocity of 20 m/s. What will be its potential energy at the end of 2 s? Given,  $g = 10 \text{ m/s}^2$ .  
(b) What kind of energy transformation takes place in:  
i. An electric heater  
ii. Microphone
11. [3]  
(a) Define average power.  
(b) Calculate the power of a pump which can lift 100 kg of water to store in a water tank placed at a height of 19 m in the duration of 25 seconds. (Take value of  $g=10 \text{ ms}^{-2}$ ).
12. Derive a relation between wave velocity, wavelength and frequency. [3]
13. What are the postulates of Dalton's Atomic Theory? [3]
14. [3]  
(a) Write the significance of the symbol of an element.  
(b) What is Avogadro's constant?  
(c) The element X has valency 3 while the element Y has valency 2. Write the formula of the compound formed between X and Y.

- 15.** Give reasons for the following: [3]  
(a) Echidna and Platypus lay eggs but are considered as mammals.  
(b) Crocodile has a four chambered heart but is still a reptile.  
(c) Birds have pneumatic bones.
- 16.** Explain the role played by lichens, mosses and trees in soil formation. [3]
- 17.** How does malaria spread? Name two diseases caused by protozoa. [3]
- 18.** What does a symptom indicate? Name two diseases spread through direct contact amongst human beings. [3]
- 19.** Draw the structure of AIDS virus. [5]
- 20.** [5]  
(a) Define work. Write its S.I. unit.  
(b) Discuss whether work is done or not in the following cases:  
i. When we twist an electric wire.  
ii. When we press a football between our palms.  
iii. When we push a table.  
iv. When a person stands holding his hand bag.
- 21.** [5]  
(a) The volume of a 500 g sealed packet is 350 cm<sup>3</sup>. The packet is dropped in water of density 1 gm cm<sup>-3</sup>.  
i. Will the packet float or sink? Explain.  
ii. What will be the mass of the water displaced by the packet?  
(b) List three characteristics of sound waves. State the factors on which each of these characteristics depends.
- 22.** Describe Bohr's Model of an atom. [5]
- 23.** [5]  
(a) Describe oxygen cycle with the help of a diagram.  
(b) How does depletion of ozone layer take place?
- 24.** [5]  
(a) Give reasons for the following:  
i. From phylum Platyhelminthes onwards, animals are categorised as 'triploblastic'.  
ii. The presence of 'coelom' in an animal's body is considered as advantageous.  
(b) Define the following terms:  
i. Biodiversity  
ii. Species  
iii. Lichens

**SECTION B**

25. If the upthrust due to tap water and salty water on a given solid body immersed in them one by one is represented by  $F_T$  &  $F_S$  respectively, then: [1]
- (a)  $F_T$  is greater than  $F_S$
  - (b)  $F_T$  is less than  $F_S$
  - (c)  $F_T$  is equal to  $F_S$
  - (d) Cannot be predicted
26. While determining the density of a sphere, a student noted down the following readings using a spring balance of least count 2 g and a measuring cylinder of least count 2 mL.
- i. Mass of the sphere = 62 g
  - ii. Initial water level of the cylinder = 61 ml
  - iii. Initial water level of the cylinder = 70 ml
- Where did he make the mistake in taking measurement? [1]
- (a) Step i
  - (b) Step ii
  - (c) Step ii and iii
  - (d) Step i and iii
27. In a slinky one can produce - [1]
- i. Only crest
  - ii. Only trough
  - iii. Crest and trough
  - iv. Compression and rarefaction.
- The correct answer will be -
- (a) i, ii
  - (b) i, iv
  - (c) ii, iv
  - (d) iii, iv
28. A plant showing reticulate venation and a woody stem is a [1]
- (a) Pteridophyta
  - (b) Gymnosperm
  - (c) Monocot
  - (d) Dicot
29. In which of the following plants, gills are found? [1]
- (a) Agaricus
  - (b) Spirogyra
  - (c) Mosses
  - (d) Fern

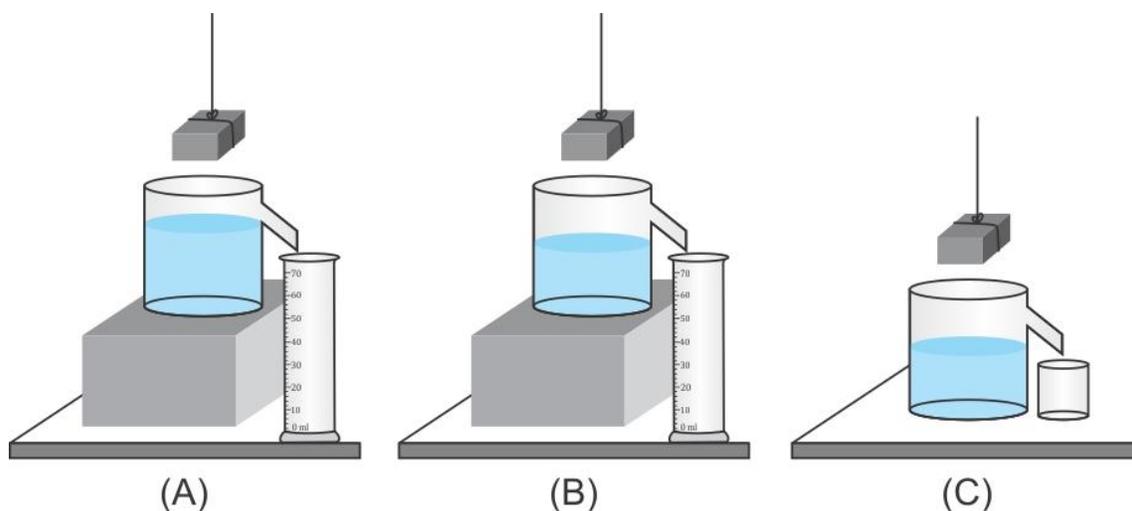
30. A cuboid of mass 2 kg and dimensions 2 cm × 5 cm × 25 cm is placed on a table top. Considering the value of  $g = 10 \text{ m/s}^2$ , the maximum and minimum pressure exerted by the cuboid respectively is [1]

- (a) 20000 Pa ; 16000 Pa
- (b) 20000 Pa, 1600 Pa
- (c) 4000 Pa ; 1600 Pa
- (d) 4000 Pa ; 2000 Pa

31. Students noted down the velocities of sound in four different media, W, X, Y and Z as 17000 m/s, 800 km/h, 0 km/h and 1300 km/h respectively. Which medium could be in the liquid state? [1]

- (a) W
- (b) X
- (c) Y
- (d) Z

32. Three students A, B and C determined the volume of a solid by immersing it in overflowing water cans as shown in the figure below. The result obtained will not be correct for [1]



- (a) Student A
- (b) Student B
- (c) Student C
- (d) All three students

33. The balancing of a chemical equation is based upon the [1]

- (a) Law of combining volumes
- (b) Law of multiple proportions
- (c) Law of definite proportion
- (d) Law of conservation of mass

34. Four students observed the specimens of two plants and sketched them as shown below. [2]



They noted in their notebooks, the identification and the names of the groups to which these plants belong as given below. The correct identification is:

- (a) A- Moss; Bryophyta, B- Fern; Pteridophyta  
 (b) A- Pine ;Gymnosperm, B- Leafy plant; angiosperm  
 (c) Both A and B are moss and belong to Bryophyta  
 (d) Both A and B are ferns and belong to Pteridophyta
35. 6.4 g of  $\text{MgCO}_3$  on heating gave 2.88 g MgO and 3.52 g  $\text{CO}_2$ . Show that these observations are in agreement with the law of conservation of mass. [2]
36. In a hot summer afternoon, a man was shouting through a megaphone. He was a zip-repairer. As Arshi was preparing for her examination, she got disturbed. She inquired with her father about the instrument being used by the zip-repairer. The father told her that it was a megaphone also known as a loud hailer. [2]
- (a) State the principle on which the megaphone works.  
 (b) Why did Arshi get disturbed?  
 (c) Why megaphones should not be used in residential areas?