Goa Board
Class IX Science
Term 2
Sample Paper – 2

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 do we say that work is done? [1]

2. Define atomic mass unit [1]

3. Name two processes which play an important role in the oxygen cycle. [1]

4. Distinguish between the intensity of sound and the loudness of sound. [2]

5. [2]

(a) How many cotyledons are present in the seeds of monocots and dicots?
(b) Why are bryophytes called amphibians of the plant kingdom?

6. What are the limitations of Thomson's atomic model? [2]

7. How do the following factors contribute in the formation of soil? [3]
(a) Wind (b) Water (c) Sun

8. Draw a neat diagram of the human ear and label the outer ear, the middle ear and the inner ear. [3]

9. Near coastal areas, wind blows from the sea towards the land during the day while the wind current moves from the land to the sea during the night. Explain. [3]

10. A man whose mass is 50 kg climbs up 30 steps of stairs in 30 seconds. If each step is 20 cm high, calculate the power used in climbing the stairs. (Use g =10 m/s^2) [3]

11. 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 enquired with her father about the instrument being used by the 'zip-repairer'. Her father told her that it was a megaphone also known as a 'loud hailer'. [3]

i. State the principle on which the megaphone works.
ii. Why did Arshi get disturbed?
iii. Why megaphones should not be used in a residential area?

12. A car with a speed of 25m/s weighing 900 kg stops at a distance of 40 metres. Calculate the force exerted and the work done by the brakes. [3]

13. Distinguish between the transverse waves and the longitudinal waves. [3]

14. How many grams of oxygen gas contain the same number of molecules as 16 grams of sulphur dioxide gas? (O = 16 u, S = 2 u) [3]

15. [3]
(a) Draw a sketch of Bohr's model of an atom with three shells.
(b) If K, L and M shell of an atom are full then what would be the total number of electrons in the atom?
(c) What is the maximum number of electrons that can be accommodated in a shell?

16. Draw a well labelled diagram of paramecium. Name the kingdom to which it belongs. [3]

17. [3]
(a) Who discovered vaccine for the first time?
(b) What is an antibiotic? Give two examples.

18. Enlist some intrinsic and extrinsic factors which affect human health. [3]

19. What are the different modes of transmission of diseases? Also, give at least one example of disease for each mode of transmission. [5]

20. [5]

(a) Define potential energy. Give two examples.

(b) Two bodies of different masses m_1 and m_2 ($m_1 > m_2$) have the same kinetic energy. They are stopped by applying the same retarding force. Which body will stop first?

21. [5]

(a) State Archimedes' principle. Give its two applications.

(b) What would be the apparent weight of an iron block of size 5 cm x 5 cm x 5 cm when it is completely immersed in water? (Density of iron = 7.8 g/cc)

22. Describe an activity to understand the law of conservation of mass with the help of a neat and labelled diagram. [5]

23. [5]

(a) What types of characteristics are possessed by Chordates? Give three points.

(b) Why fungi and bacteria are considered as plants even though they do not have chlorophyll?

(c) What is a notochord?

24. [5]

(a) What would be the impact of an increase in the concentration of carbon dioxide in the atmosphere?

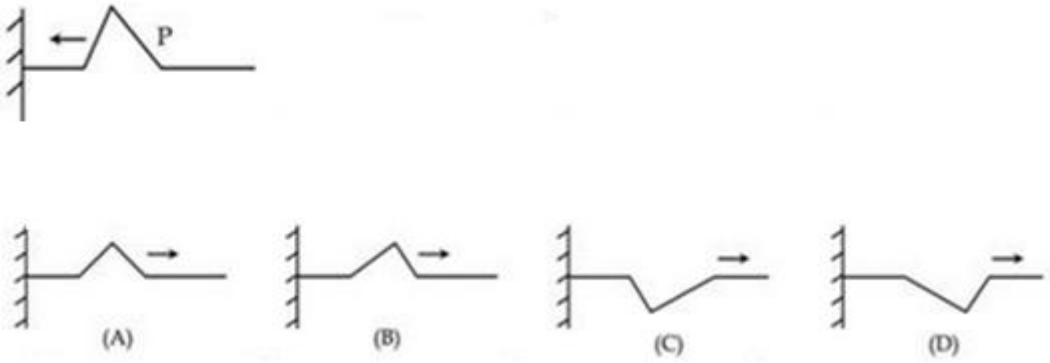
(b)

i. What do you mean by biogeochemical cycles? Name any two biogeochemical cycles.

ii. Nitrogen cycle is called a perfect cycle in nature. Explain.

SECTION-B

25. The figure given below shows an incident pulse P reflected from a rigid support. Which out of A, B, C, D represents the reflected pulse correctly? [1]

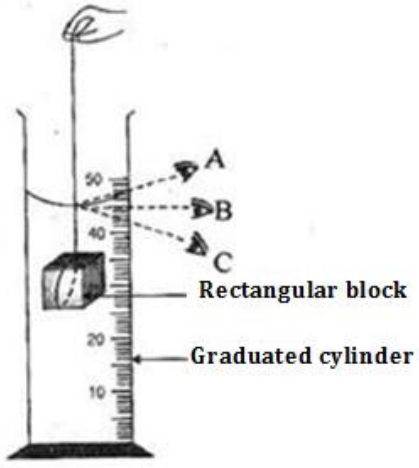


(a) (A)
(b) (B)
(c) (C)
(d) (D)

26. In an experiment to verify the laws of reflection of sound, the sound heard is maximum when: [1]

(a) Both the pipes are hollow.
(b) Both the pipes are solid.
(c) One of the pipes is hollow and the other is solid.
(d) No difference among all the above.

27. Rahul wants to note down the level of water in the measuring cylinder. The correct position of the eye is: [1]



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

28. While determining the density of a copper piece using a spring balance and a measuring cylinder, Seema carried out the following procedure. [1]

i. Noted the water level in the measuring cylinder without the copper piece.
ii. Immersed the copper piece in water.
iii. Noted the water level in the measuring cylinder with the copper piece inside it.
iv. Removed the copper piece from the water and immediately weighed it using a spring balance.

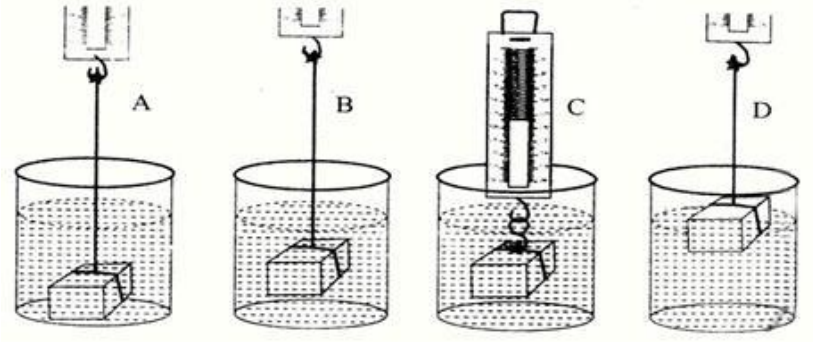
The wrong step in the procedure is

(a) Step i
(b) Step ii
(c) Step iii
(d) Step iv

29. To compare the pressure exerted by a cuboid, a student was given three cuboids made of iron, aluminium and wood respectively. The dimensions of each cuboid are 20 cm × 15 cm ×10 cm. To perform the experiment effectively, the student should choose: [1]

(a) Aluminium cuboid
(b) Iron cuboid
(c) Wooden cuboid
(d) Any of the three cuboids

30. The correct experimental set up for determining the mass of a solid in water is shown in the figure: [1]

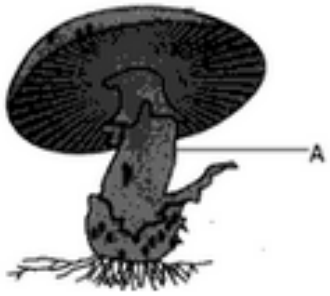


(a) A
(b) B
(c) C
(d) D

31. The exoskeleton of a cockroach is made up of [1]

(a) Cartilage
(b) Calcium and phosphorous
(c) Chitin
(d) Cellulose

32. Four students label part A of the given figure, which is the correct labeling? [1]



(a) Gills
(b) Pilius
(c) Stipe
(d) Annulus

33. Which of the following statements is correct regarding the 'Law of Conservation of Mass'? [1]
(a) Mass can either be created or destroyed in a chemical reaction.
(b) The elements are always present in a constant proportion in a chemical substance.
(c) Mass can neither be created nor destroyed.
(d) The rate of reaction is directly proportional to the active mass of the reactants.

34. Bala is asked to observe the position of the mouth in a bony fish. What is the correct position that he should identify? [2]
(a) Dorsally placed
(b) Ventrally placed
(c) Terminally placed
(d) Anteriorly placed

35. [2]
(a) Which of the following is not a correct combination of reagents used in the activity to describe the law of conservation of mass?

X	Y
(A) Copper Sulphate	sodium carbonate
(B) Barium Chloride	sodium sulphate
(C) Lead Nitrate	sodium chloride
(D) Calcium Oxide	Potassium nitrate

(b) Write the observation and conclusion of the activity to understand the law of conservation of mass.

36. While determining the density of the material of a body, a student recorded the following observations [2]

(a) Mass of the body = 62.4 g

(b) Reading of the water level in the measuring cylinder without the body = 16.4 mL

(c) Reading of the water level in the measuring cylinder with the body = 24.4 mL

Based on these observations, what will be the density of material of the body in kg m^{-3}?