

**TOPPER Sample Question Paper IV  
Science (Theory)  
Second Term (SA – II)  
Class IX  
2010-2011**

**Time: 3 Hours**

**M.M.: 80**

**General Instructions**

- i) The question paper comprises of two sections, A and B, you are to attempt both the sections.
- ii) All questions are compulsory.
- iii) There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such questions is to be attempted.
- iv) All questions of section A and all questions of section B are to be attempted separately.
- v) Question numbers 1 to 4 in section A are one mark question. These are to be answered in one word or one sentence.
- vi) Questions numbers 5 to 13 are two marks questions, to be answered in about 30 words.
- vii) Question numbers 14 to 22 are three marks questions, to be answered in about 50 words.
- viii) Question numbers 23 to 25 are five marks questions, to be answered in about 70 marks.
- ix) Question numbers 26 to 41 in section B are multiple choice questions are based on practical skills. Each question is a one mark question. You are to choose one most appropriate response out of the four provided to you.

**SECTION A**

1. When an object moves on a circular path, what is the work done?
2. Write the unit of work?
3. What is the term given to increase in annual earth's temperature?
4. What is the percentage of nitrogen and oxygen in the air?
5. Give one achievement and one limitation of Thomson's model.
6. (a) Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3 g of hydrogen gas?  
  
(b) Write the molecular formula of a diatomic gas and a triatomic gas.
7. (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 lay eggs outside water.

8. (a) What is the advantage of classifying organisms? (b) Why some organisms are considered diploblastic?
9. Give any two important applications of Archimedes' principle.
10. Relative density of gold is 19.3. What is its density in SI system?
11. a. Why are ceilings of concert halls curved?  
b. Can sound waves propagate in vacuum?
12. What are the two types of natural resources? Define and give an example of each.
13. a) What is the major reservoir of fresh water?  
b) Name the factors which influence the pattern of wind.
14. (a) State any two conditions essential for good health.  
(b) How are antibiotics effective in the treatment of some diseases?
15. (a) How cholera is spread through water?  
(b) Name the primary and secondary host of the pathogen that causes malaria.
16. (a) What do you mean by immunization?  
(b) List two disadvantages of treatment of a disease.
17. a) What are fungi? Why are they referred to as saprophytes?  
b) What is the function of cnidoblasts cells in Hydra?
18. (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?
19. (a) What do the following abbreviations stands for?  
i. O  
ii. 2O  
iii. O<sub>2</sub>  
iv. 3O<sub>2</sub>  
(b) Name an isotope of an element which is used as reference for atomic mass unit.
20. (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?  
(b) Write an expression for the work done when a force is acting on an object in the direction of its displacement.
21. (a) Why is sound wave called a longitudinal wave?  
(b) A bat can hear sound at frequencies upto 120 kHz. Determine the wavelength of sound in air at this frequency. Take the speed of sound in air as 344 m/s.
22. (a) Give any two characteristics of wave motion.  
(b) Write any two examples of electromagnetic waves.
23. (a) Explain the work done by the 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 units of energy during a month. How much energy is this in Joules?

Or

- (a) Describe the law of conservation of energy by giving two examples. (b) Calculate the work done in lifting 200 kg of water through vertical height of 6 m ( assuming  $g = 10 \text{ m/s}^2$ )

24.(a) In Rutherford's experiment, how was it shown that an atom has a lot of empty space within it?

(b) Why is the nucleus of an atom positively charged?

(c) Calculate the valency of chlorine, sulphur and magnesium?

Atomic number of chlorine = 17, sulphur = 16, magnesium = 12

**OR**

(a) Oxygen has three isotopes of atomic masses 16, 17 and 18 respectively. Explain the following:

(i) They have same chemical properties.

(ii) They are all electrically neutral.

(b) Name the isotopes of hydrogen.

(c) Give one point of similarity and one point of difference between isotopes  $^{14}\text{C}$  and  $^{12}\text{C}$  ?

25.(a)

i. Why denitrification of nitrogenous compounds is necessary?

ii. What is the special structure found in legumes and what is its function?

(b) What is biomass?

(c) What is humification? Why it is important?

**Or**

a. Write the importance of carbon cycle in nature. List any two points.

b. What are the factors on which the cycling of an element or substance depends?

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