

TOPPER Sample Paper 5
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. Is potential energy a vector or a scalar quantity?
2. At what position, pendulum acquires the maximum kinetic energy?
3. Write any two methods of preventing soil erosion.
4. Why the temperature of the moon falls to -190°C ?
5. (i) On the basis of Thomson's model of an atom, explain how the atom is neutral as a whole?
(ii) Where are electrons found in the atom?
6. (i) Which postulate of Dalton's atomic theory is the result of the law of conservation of mass?
(ii) Name the term is used for the symbolic representation of a molecule of an element or a compound? Give an example of it.

7. (a) Which phylum of kingdom animalia has spiny body? Give one example of it.
(b) Write the name of the class to which the following belongs:
(i) Sea horse.
(ii) King cobra.
8. (a) Write two points of difference between amphibians and reptiles. (b)

List two characters which help amphibians to survive on land.

9. (i) Do fluids exert pressure? How is pressure transmitted in a fluid? (ii)
Why a steel ball sinks in water?
10. Relative density of silver is 10.8. The density of water is 10^3 Kg m^{-3} . What is the density of silver in SI unit?
11. (i) Give any two examples of longitudinal waves.
(ii) What is the most essential property of a wave motion and why?
12. (a) What is the major component of atmosphere of earth and Venus? (b)
What is the direction of air in coastal areas during the night?
13. (a) Name any two abiotic factors that make soil.
(b) What would happen if all the oxygen present in the environment is converted to ozone?
14. (a) What are lichens? Give two examples and one use of it? (b)
Name the excretory organs of following:
i. Cockroach
ii. Leech
15. (a) What are the two ways to treat an infectious disease? (b)
Name any two sexually transmitted diseases.
16. (a) How air borne transmitted diseases like common cold spreads?
(b) What do we call such microorganisms that cause diseases? Give one example also.
17. (a) Why antibiotics do not work against viruses? (b)
i. Name any two diseases which have long term effect on the health of an individual.
ii. What is immunity?
18. (a) What is the mass of:
(i) 0.2 mole of oxygen atoms?
(ii) 0.5 mole of water molecules? (b)
Name the two types of radicals.
19. (a) State the law of constant proportions? Explain with one example.
(b) Write the symbols of sodium and silver.
20. (a) Calculate the work done in lifting 200 kg of water through a vertical height 6 meter. (Assuming $g = 10 \text{ m/s}^2$)
(b) When an object moves on a circular path, what is the work done?
21. (a) Define frequency and wavelength in reference to sound. (b)
What is echo? Give formula for time of echo.
22. (a) Establish a relation between wavelength, frequency and speed of sound in a medium.
(b) Give two examples of transverse waves.
23. (a) Describe the oxygen cycle in nature.
(b) What is the importance of carbon cycle in nature? (c)
List any two consequences of global warming.

Or

- (a) Define biogeochemical cycles.
(b) Describe the various steps of hydrological cycle. (c)
How is acid rain formed?

24. The atomic number of chlorine is 17 and mass number is 35.
a. What would be the electronic configuration of a negatively charged chloride ion, Cl^- ?
b. What would be the atomic number and mass number of Cl^- ?
c. Define valency and calculate the valency of Cl^- .

OR

The relative atomic mass of Boron is 10.8. Calculate the percentage of its isotopes ^{10}B and ^{11}B , occurring in nature.

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- 25.(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. (given $g = 9.8 \text{ m/s}^2$).
(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 simple pendulum?

Or

- (a) What happens to the kinetic energy when:
(i) The mass of the body is doubled at constant velocity? (ii)
The velocity of the body is doubled at constant mass?
(iii) The mass of the body is doubled but the velocity is reduced to half? (b)
Two bodies of equal masses move with the uniform velocities v and $3v$ respectively. Find the ratio of their kinetic energies.