

KENDRIYA VIDYALAYA SANGATHAN, VARANASI REGION

SAMPLE QUESTION PAPER

Class - IX

SCIENCE (086)

TERM II (2021-22)

Max. Marks:40

Time allowed: 2 hours

General Instructions:

- i) All questions are compulsory.
- ii) The question paper has three sections and 15 questions. All questions are compulsory.
- iii) Section–A has 7 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has 2 case based questions of 4 marks each.
- iv) Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

SECTION A

1. The atomic number of three elements A, B and C are 9, 10 and 13 respectively. Which of them will form a cation?
2. Compute the number of ions present in 5.85 g of sodium chloride.
3. a) Write the correct representation of an element 'X' which contains 15 electrons and sixteen neutrons.
b) In the atom of an element X, 6 electrons are present in the outermost shell. If it acquires noble gas configuration by accepting requisite number of electrons, then what would be the charge on the ion so formed?
4. An element 'Z' forms the following compound when it reacts with hydrogen, chlorine, oxygen and phosphorous.
 ZH_3 , ZCl_3 , Z_2O_3 and ZP
(a) What is the valency of element 'Z'?
(b) Element 'Z' is metal or non-metal?
5. a) Define one Joule of work?
b) A force of 7 N acts on an object. The displacement is, say 8 m, in the direction of the force. Let us take it that the force acts on the object through the displacement. What is the work done in this case?

OR

Calculate the kinetic energy of a car of mass 500kg moving with a velocity of 36km/h. Find the kinetic energy if the velocity of car doubles?

6. What is an antibiotic? Give two examples

OR

Why are we normally advised to take bland and nourishing food when we are sick?

7. Name any three diseases transmitted through vectors.

OR

Differentiate between infectious and non-infectious diseases with example.

SECTION B

8. a) If $Z = 7$, what would be the valency of the element? Name the element.

b) Write the molecular formulae for the following compounds:

- (a) Copper (II) bromide
- (b) Aluminium (III) nitrate
- (c) Calcium (II) phosphate

9. Calculate the molecular mass of the following:

- (a) H_2CO_3
- (b) $\text{C}_2\text{H}_5\text{OH}$
- (c) MgSO_4

OR

Calculate the atomicity of the following.

- (a) F_2
- (b) NO_2
- (c) CO_2^{-3}
- (d) C_2H_6
- (e) CO
- (f) H_2O_2

10. a) An object thrown at a certain angle to the ground moves in a curved path and falls back to the ground. The initial and the final points of the path of the object lie on the same horizontal line. What is the work done by the force of gravity on the object?

b) Can a body possess energy even if it is not in motion?

11. Calculate the electricity bill amount for a month of 31 days, if the following devices are used as specified:

- (a) 3 bulbs of 40 W for 6 hours.
- (b) 4 tube lights of 50 W for 8 hours,
- (c) A TV of 120 W for 6 hours.

Given the rate of electricity is Rs 2.50 per unit.

OR

- (a) What is meant by mechanical energy? State its two forms. State the law of conservation of energy. Give an example in which we observe a continuous change of one form of energy into another and vice-versa.
- (b) Calculate the amount of work required to stop a car of 1000 kg moving with a speed of 72 km h^{-1} .
12. An object is thrown vertically upwards and rises to a height of 10m.
- a) Calculate the velocity with which object is thrown upwards.
- b) The time taken by the object to reach the highest point.
13. A ball is dropped from a height of 20m., at the same instant another ball is thrown up from the ground with a speed of 20m/s. When and where the balls meet?

SECTION – C

This section has 02 case-based questions (14 and 15). Each case is followed by 03 sub-questions (a, b and c). Parts a and b are compulsory. However, an internal choice has been provided in part c.

14. Soumya and Raunak are very excited to perform experiments in the chemistry laboratory. Soumya took 5 moles of carbon atoms in a container and Raunak also took 5 moles of sodium atoms in another container of same weight.
- (a) Whose container is heavier?
- (b) Whose container has more number of atoms
- (c) How many molecules are present in 9g of water?

OR

A flask contains 4.4g of CO_2 gas. How many moles of CO_2 gas does it contain.?

15. Tapan a 15 years old boy and his parents were afraid of getting vaccine against COVID. Their family doctor told them that getting vaccinated could save your life. COVID-19 vaccines provide strong protection against serious illness, hospitalization and death. There is also some evidence that being vaccinated will make it less likely that you will pass the virus on to others, which means your decision to get the vaccine also protects those around you. Even after getting vaccinated, keep taking precautions to protect yourself, family, friends and anyone else you may come into contact with.
- a) What is immunisation?
- b) What do you mean by disease symptoms? Explain giving two examples.
- c) What precautions will you take to justify “prevention is better than cure.”

OR

Why are antibiotics not effective for viral disease?