

**KENDRIYA VIDYALAYA SANGATHAN, RAIPUR REGION**

**SAMPLE QUESTION PAPER SET- 1**

**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(2 MARKS)**

Q1. State the number of atoms present in each chemical species:-



Q2. Composition of the nuclei of two atomic species A and B are given as:

Element	A	B
Protons	17	17
Neutrons	18	20

a) What are the mass number of A and B ?

b) How are they related to each other ?

Q3. If Bromine atom is available in the form of say, two isotopes  $^{79}_{35}\text{Br}$  (49.7%) and  $^{81}_{35}\text{Br}$  (50.3%) ,

Calculate the average atomic mass of bromine atom.

Q4. Match the name of Scientists in column A with their contributions in atomic structures given in column B.

COLUMN-A	COLUMN-B
a) J.J. Thomson	i) Canal rays
b) Dalton	ii) Neutrons
c) E. Goldstein	iii) Discovery of electrons
d) James Chadwick	iv) Indivisibility of atoms

Q5. Explain why antibiotic do not work against viruses but work against many group of bacteria.

**OR**

What do you meant by antibiotic? Name the first antibiotic in the world .Who discovered it ?

Q6. State any two conditions essential for good health?

**OR**

Ravi suffered from tuberculosis while Rehman suffered from typhoid. Classify the disease into acute and chronic disease. Also write their difference.

Q7. The power of a motor pump is 2 kW. How much water per minute the pump can raise to a height of 10 m? (Given  $g = 10 \text{ m s}^{-2}$ )

**OR**

Define 1 J of work. An object of mass 15 kg is moving with a uniform velocity of  $4 \text{ m s}^{-1}$ .

What is the kinetic energy possessed by the object?

**SECTION -B(3 MARKS)**

\_\_\_Q8. Calculate the:

- a) Number of moles present in  $3.011 \times 10^{23}$  number of oxygen atoms.
- b) Number of molecules in 124 grams of phosphorus,  $\text{P}_4$ .
- c) Molar mass of Sodium Chloride.

**OR**

- a) How many particles are represented by 0.25 mole of an element ?  
b) Out of 4 g of methane ( $\text{CH}_4$ ) and 11 g of  $\text{CO}_2$ , which has more molecules ?
- Q9.a) Draw the electronic distribution structure of element X with atomic number 11 and element Y with atomic number 16?  
b) State two applications of isotopes.
- Q10. A car falls off a ledge and drops to the ground in 0.5 s. Let  $g = 10 \text{ m s}^{-2}$  (for simplifying the calculations).  
(i) What is its speed on striking the ground?  
(ii) What is its average speed during the 0.5 s?  
(iii) How high is the ledge from the ground?

**OR**

State the universal law of gravitation. Write any two importance of the universal Law of gravitation

Q11. The weight of any person on the moon is about  $1/6$  times that on the earth. He can lift a mass of 15 kg on the earth. What will be the maximum, mass, which can be lifted by the same force applied by the person on the moon?

Q12. Write work energy theorem. What is the work to be done to increase the velocity of a car from  $5 \text{ ms}^{-1}$  to  $10 \text{ ms}^{-1}$  if the mass of the car is 1500 kg?

- Q13. (a) What is power?  
(b) Define 1 watt of power.  
(c) A lamp consumes 1000 J of electrical energy in 10 s. What is its power?

**OR**

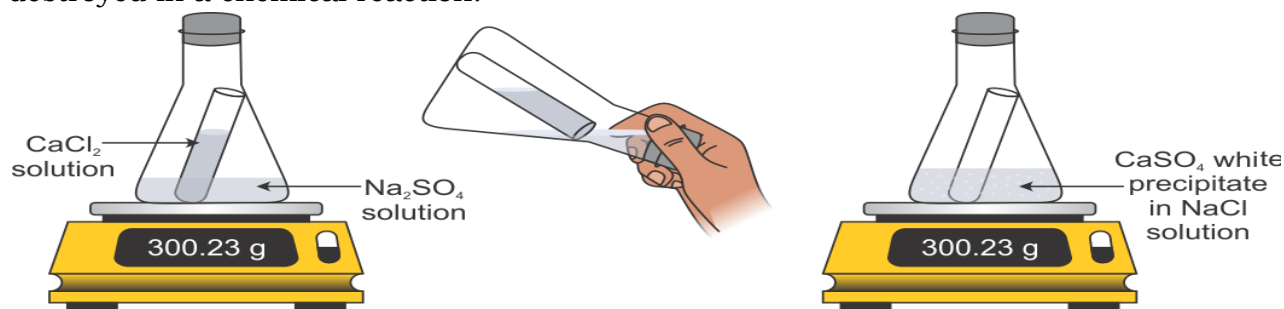
State the kind of energy transformation that takes place in the following devices:

- Solar panel
- Microphone
- Battery
- LED
- Gas Stove
- Radio

### **SECTION -C (4 MARKS)**

Q14. **Law of Conservation of Mass**

PRINCIPLE: The Law of Conservation of Mass states that mass can neither be created nor destroyed in a chemical reaction.



Total Mass of the Reactant = Total Mass of the Product

TECHNIQUE:

- Take a solution of calcium chloride in a flask and a solution of sodium sulphate in a test tube.
- Tie a thread to the test tube and carefully lower it into the flask. Seal the flask with a cork to make it airtight.
- Weigh the flask on a balance. It weighs around 300.23 grams.
- Tilt and swirl the flask and allow the contents of the test tube to come in contact with the contents of the flask.

a) Calcium chloride reacts with sodium sulphate to form a white precipitate of calcium sulphate and a solution of sodium chloride. A student weighs the flask again and found no change in the weight of the flask. He opened the flask now, what do you think about the change in the mass of the flask? (1

**MARK)**

b) Law of conservation of mass is applicable to which type of reaction ? (1 **MARK)**

c) If 10.0 g of  $\text{CaCO}_3$  on heating give 4.4 g of  $\text{CO}_2$  and X g of CaO. Estimate the mass of CaO. (2**MARKS)**

**OR**

c) Four students A, B, C and D verified the law of conservation of mass in a chemical reaction of calcium chloride and sodium sulphate. All of them used 108.2 g of calcium chloride and 115.1 g of sodium sulphate solution and mixed them in a beaker of mass 160g. They reported

their results as follows :

Student	Colourless mixture after mixing	Mass of reaction mixture in the beaker including mass of beaker
A White precipitate 383.3 g	White precipitate	383.3 g
B Brown precipitate 373.3 g	Brown precipitate	373.3 g
C White precipitate 363.3 g	White precipitate	363.3 g
D Brown precipitate 383.3 g	Brown precipitate	383.3 g

Out of four student , which Student's observation/result was correct and why?

Q15 Human beings live in societies and different localities like villages or cities ,which determine the social and physical environment ,both are to be kept in harmony .Public cleanliness is important for individual health .A lot of money is required for maintaining better living conditions .We need good food for healthy body and for this we have to earn more .For the treatment of diseases also ,one has to be in good economic condition.

- What do you mean by health ?
- Write any two significance of good health
- State any two conditions essential for being free of disease .

Or

Write any one difference in between healthy and disease free .

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