

<b>Roll Number</b>		
--------------------	--	--

**SET A**



**INDIAN SCHOOL MUSCAT  
SECOND TERM EXAMINATION  
086 SCIENCE**

CLASS: IX

TERM 2

Time Allotted: 2HRS.

13.02.2022

Max.Marks: 40

**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.      a) State Universal law of gravitation 2  
          b) What is the value of 'G' (Universal gravitational constant)?
2.      a) How does the force of gravitation between two objects change when the distance between them is reduced to half? 2

**OR**

- b) How does the force of gravitation between two objects change when the masses of both the objects are reduced to half?
3.      (i) Define atomicity. 2  
          (ii) Find atomicity in (a)  $\text{H}_2\text{SO}_4$     (b)  $\text{NaHCO}_3$
4.      State the postulates of Thomson model of atom. 2
5.      Find the molar mass of the following substances. (Given atomic mass  $\text{H}=1\text{u}$ ,  $\text{Cl}=35.5\text{u}$ ,  $\text{Na}=23\text{u}$ ,  $\text{C}=12\text{u}$ ,  $\text{O}=16\text{u}$ ,  $\text{N}=14\text{u}$ ,  $\text{K}=39\text{u}$ ,  $\text{S}=32\text{u}$ ) 2  
          (a)  $\text{HCl}$     (b)  $\text{NaHCO}_3$     (c)  $\text{NH}_4\text{CO}_3$     (d)  $\text{K}_2\text{SO}_4$

**OR**

Give the drawback of Rutherford model of an atom.

6.      Write the symbols for the following polyatomic ions with charges. 2  
          (a) Phosphate    (b) Carbonate    (c) Sulphate    (d) Nitrate

7. Mention the mode of transmission of the following infectious diseases 2
- a) Cholera
  - b) Syphilis
  - c) Malaria
  - d) Influenza

**OR**

Differentiate acute and chronic diseases

### **SECTION - B**

8. Define three types of work done 3
9. a) Define SI unit of power 3  
b) If an electric iron of 1200 W is used for 30 minutes every day, find the electrical energy consumed in the month of April.

**OR**

- a) Define potential energy
  - b) Calculate the work required to be done to stop a car of mass 2000 kg moving with a velocity of 90 km/ h.
10. Government is releasing lots of advertisements through mass media about the various childhood immunization under the Public Health Programme. 3
- a. What is immunization?
  - b. List any two infectious diseases against which children are immunized before the age of ten in our country.
11. The immune system of a person 'X' is damaged by the attack of a specific infectious agent on his/her body. 3
- a) Name the disease the person is suffering from
  - b) Name the infectious agent or pathogen responsible for this disease
  - c) Mention any four modes through which this pathogen is transmitted from the infected person to another.
12. (i) Define cation and anion and give one example for each. 3  
(ii) Define atomic mass unit.

**OR**

Differentiate between proton and electrons. Give three differences.

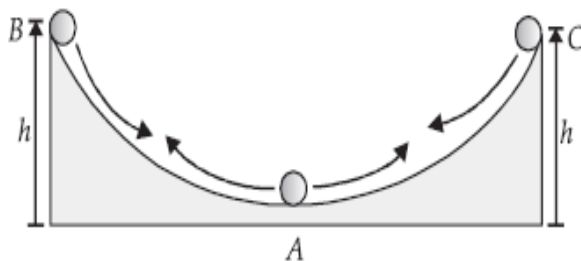
13. (i) Define Isotopes give two example for carbon isotopes 3  
(ii) Define Mass Number.

## SECTION – C

This section has 2 case-based questions (14 and 15). Each case is followed by 3 sub-questions (a, b and c).

Parts a and b are compulsory. However, an internal choice has been provided in part c.

14. Figure shows a watch glass embedded in clay. A tiny spherical ball is placed at the edge B at a height  $h$  above the centre A. 4



- Name the maximum energy possessed by the ball at the point C and A
- State the law of conservation of energy
- Mention the energy transformation taking place during photosynthesis and also in an electric bell.

**OR**

Mention the energy transformation taking place during nuclear explosion and also in an electric cell.

15. Elements combine to form compounds in a fixed ratio by mass. The valency of the element differ from one element to another element based on their atomic number. Elements have different number of sub atomic particles, therefore forms different atomic number and mass number. Isotopes are formed by different in their number of neutrons and isobars are formed due to the different number of protons. The atomic mass of an element is determined from the average atomic mass of its isotopic forms. Consider the following questions and give your answer. 4

- Find the simplest whole number ratio by mass of  $\text{Na}_2\text{CO}_3$  (For atomic mass refer question number 5)
- Based on the valency write the chemical formula for the following compounds
  - Aluminium Sulphate
  - Ammonium Phosphate
- Two species X and Y has number of protons 8 and but have different number of neutrons such as 8 and 10 respectively with average atomic mass of 16.2u.
  - What is it?
  - Find the percentage composition respectively.

**OR**

The average atomic mass of an element is 35.5u based on their two isotopic atoms. One of the isotopic atom has mass number 35 and another one has 37 respectively. Find its percentage abundance of each isotopic form.

**End of the Question Paper**