Roll Number		

SET   B

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. Differentiate between mass and weight   2

2. a) If an electric device of 1800 W is used for 2 hours daily, how much electrical energy would be consumed per day? Also find the cost of electricity bill in the month of June if the unit price is Rs. 2.00.   2

OR

b) A man whose mass is 50 kg climbs up 40 steps of a stair in 25s. If each step is 20 cm high, calculate the power used in climbing stairs. (Take $g = 10m/s^2$)

3. What are the symbols of the following elements?   2
(i) Aluminium   (ii) Sulphur   (iii) Copper   (iv) Zinc

4. Define law of Constant Proportion by taking formation of H_2O molecule.   2

5. How many oxygen atoms are present 88g of Carbon dioxide molecule?   2

OR

Define Isobars with suitable example.

6. Define Avogadro Number and what is it value?   2

7. Covid -19 is considered to be a pandemic disease. Why it is considered as a pandemic disease? Name any two pandemic diseases other than covid -19.   2

OR

List any four factors that must be taken care of by an individual for keeping good health.

SECTION - B

8.   a) Define Work done   3

          b) Derive the expression for kinetic energy of an object moving with a certain velocity.

9.   a) A ball is thrown vertically upwards and rises to a height of 180 m. Taking the value of $g = 10 \text{ m/s}^2$, calculate   3

           (i) the velocity with which the object was thrown upwards

           (ii) the time taken by the object to reach the highest point.?

OR

          b) If the moon attracts the earth, why does the earth not move towards the moon?

          c) What is the weight of a 20 kg object on the moon and on the earth?   (Take $g = 10 \text{ m/s}^2$)

10.   What do you mean by organ specific manifestation?   3

Name any two symptoms shown by a person if the stomach gets infected.

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 responsible for this disease

Mention any four modes through which this pathogen is transmitted from one person to another.

12.   (i) Define law of conservation of mass.   3

          (ii) Which two postulates of Daltons Atomic theory supports the law of chemical combination and constant proportion.

OR

Write the chemical formula for the following substance

          (i) Calcium Sulphate   (ii) Potassium Carbonate   (iii) Sodium Phosphate

          (iv) Copper (II) chloride   (v) Magnesium hydrogen carbonate   (vii) Iron (II) Nitrate

13.   Explain Neil's Bohr Model of an atom. Draw the Bohr model for Sodium atom.   3

SECTION – C

This section has 2 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.   Consider two bodies A and B having masses m_1 and m_2 respectively. Let the distance between these bodies be R.   4
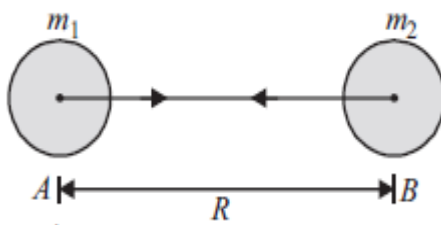
a) State Universal law of gravitation. Also write the expression for gravitational force from the above diagram.
b) What is the importance of Universal law of gravitation?
c) Differentiate between g (acceleration due to gravity) and G (Universal gravitation constant)

OR

Where is value of g greater at the poles or at the equator?

15. It was universally accepted that the mass of 12g of Carbon atom has exactly 6.023×10^{23} no of carbon atoms. Therefore, for calculating the atomic mass of any element is compared with the standard mass of C^{12} isotopic carbon atom. To count the very large number of constituent particles in a given amount of substance has been easily found by using mole concept. The mole correlated the relationship between molar mass and number of particles in a given amount substance. It was also found that 1 mole of any chemical substance contains Avogadro number of particles (Atoms/Ions/Molecule). Based on the above fact answer the following questions. 4

(a) Which has more number of particles, 48g of Mg or 7g of nitrogen? (at. Mass: Mg = 24 u, N = 14 u). Give your answer.
(b) Name the ionic compound that is obtained from sea water and calculate the number of moles present in 5.85 g of this compound.
(c) (i)How many grams of chlorine are contained in one mole of chlorine?
(ii)How many molecules are there in 7.1g of chlorine gas? (atomic mass: Cl=35.5u)

OR

(i)If 12g of carbon has 'n' atoms, then what is the number of atoms in the same amount of Mg? (Given that atomic mass of C=12u & Mg=24u)
(ii) What is the mass of 10 moles of sodium sulphite (Given at. Mass s=32u, Na=23u, O=16u)
(iii) Find the mass of $3 \times 6.022 \times 10^{23}$ number of Nitrogen gas.
(iv) Find number of atoms present 256g of S_8 molecule.

End of the Question Paper