CLASS IX (2019-20)
SCIENCE (CODE 086)
SAMPLE PAPER-8

Time : 3 Hours   **Maximum Marks : 80**

General Instructions :

(i)   The question paper comprises of three sections-A, B and C. Attempt all the sections.

(ii)   All questions are compulsory.

(iii)   Internal choice is given in each sections.

(iv)   All questions in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type questions. They are to be answered in one word or in one sentence.

(v)   All questions in Section B are three-mark, short-answer type questions. These are to be answered in about 50-60 words each.

(vi)   All questions in Section C are five-mark, long-answer type questions. These are to be answered in about 80-90 words each.

(vii)   This question paper consists of a total of 30 questions.

SECTION -A

Q1.   If a body starts from rest, what can be said about the acceleration of the body ?   [1]
   (a) Positively accelerated   (b) Negatively accelerated
   (c) Uniformly accelerated   (d) None of the above

Q2.   Which of the following represents the correct increasing order of the densities of given substances?   [1]
   (a) Cotton < Exhaust from chimneys > Honey < Iron < Air.
   (b) Air < Exhaust from chimneys < Cotton < Honey < Iron.
   (c) Air < Cotton < Exhaust from chimneys < Iron < Honey.
   (d) Cotton < Air < Exhaust from chimneys < Iron < Honey.

OR

Which of the following is incorrect about plasma ?   [1]
   (a) Fluorescent tube and neon sign bulbs consist of plasma.
   (b) The gas gets ionised when electrical energy flows through it.
   (c) It consists of super energetic and super excited particles.
   (d) The plasma glows with colour which does not depend upon nature of gas.

Q3.   The white fibre of connective tissue is made up of which one of the following ?   [1]
   (a) Lignin   (b) Keratin
   (c) Collagen   (d) Elastin

OR

Active division takes place in which one of the following cells?
   (a) Cambium   (b) Phleom
   (c) Parenchyma   (d) Xylem

Q4.   A motorcycle and a car are moving on a horizontal road with the same velocity. If they are brought to rest by the application of brakes which provided equal retardation, then :   [1]
   (a) Motorcycle will stop at shorter distance. (b) Car will stop at a shorter distance.
   (c) Both will stop at the same distance.   (d) Nothing can be predicted.

Q5.   Nanometer is an :   [1]
   (a) Instrument used for measuring micro distance.
   (b) Instrument used for measuring macro distance.
   (c) Unit for measuring micro distance.
   (d) Unit for measuring macro distance.

OR

Heating of iron fillings and sulphur powder for formation of iron sulphide should be done in a
(a) Petri dish   (b) Watch glass
(c) Copper dish   (d) China dish

Q6.   Which body part is not composed of nervous tissue ?   [1]
        (a) Brain   (b) Muscles which connect eyes to brain
        (c) Spinal cord   (d) Nerves

        DIRECTION : For question numbers 7 and 8, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

        (a) Both A and R are true and R is correct explanation of the A.
        (b) Both A and R are true but R is not the correct explanation of the A.
        (c) A is true but R is false.
        (d) Both A and R are false.

Q7.   **Assertion (A) :** Nucleus of an atom is Positively charged.
        Reason (R) : Nucleus of atom consists of protons and neutrons.   [1]

Q8.   **Assertion (A) :** Atom is not the smallest particle in the universe.
        Reason (R) : An atom consists of proton, neutron and electron.   [1]

Q9.   The distance between two bodies becomes 6 times more than the usual distance, so the F becomes ....   [1]
        (a) 36 times   (b) 6 times
        (c) 12 times   (d) 1/36 times

Q10.   A student carries a bag weighing 5 kg from the ground floor to his class on the first floor that is 2 m high. The work done by the boy is ....   [1]

Q11.   Name the bio-indicator which is highly sensitive to SO_2 pollutions ?   [1]

Q12.   What is the alternate name for Apis cerana indica?   [1]
        (a) Indian bee   (b) Indian buffalo
        (c) Indian cow   (d) None of these

Q13.   Answer question numbers 13.1–13.4 on the basis of your understanding of the following paragraph and the related studied concepts.

        Bharat went to Kerala with his parents for a nature trip. The family landed in Kochi in the morning from where they had plans for going to Alapuzzha at night. Bharat knew that Kochi is famous for its Bharat Petroleum Oil Refinery and coerced his father to take him there. Bharat had studied separation techniques at his school and wanted to see the same in the refinery in reality.

        13.1 What separation technique did Bharat expect to see at the oil refinery ?   [1]

        13.2 What is the most important condition for this particular technique to be implemented ?   [1]

        13.3 Give two examples of components that are separated in an oil refinery.   [1]

13.4 What is the ideal location of an oil refinery in a city ?   [1]

Q14.   Questions 14.1 to 14.4 are based on the Table A. Study this table and answer the following questions.

Days	Jar 1 (cm)	Jar 2 (cm)
Day 1	1	1
Day 2	1.3	1.4
Day 3	1.7	0.8
Day 4	2.1	0.8
Day 5	2.5	0.8

Two glass jars filled with water are taken. Two onion bulbs are taken and placed in each of the jars. Observe the growth of roots in both the jars. Measure the length of the roots daily. On Day 3 cut the root tips of the onion in Jar 2 by 1 cm and measure their lengths each day for 2 to 3 more days. By this activity, the Table A was constructed.

14.1 Does the root of onion in Jar 2 continue growing even after its tip is removed ?   [1]

14.2 Why does it stop growing after the root tip is removed ?   [1]

14.3 What is apical meristem ?   [1]

14.4 What happens to the cells formed by meristematic tissue ?   [1]

SECTION - B

Q15.   Derive the first equation of motion mathematically.   [3]

Q16.   (a) Camphor disappears without leaving any residue. Explain.
        (b) Why do we feel cool when we touch a piece of ice ?   [3]

Q17.   (a) How are simple tissues different from complex tissues ?
        (b) What happens to the plants if their tips are removed ?   [3]

Q18.   Why is the weight of an object on moon 1/6th its weight on earth?   [3]

OR

Why will a sheet of paper fall slowly in comparison to one that is crumpled into a ball ?

Q19.   What are the advantages of composite fish culture ?   [3]

Q20.   Write the postulates of Bohr's theory.   [3]

OR

Why is atomic number more important than atomic weight in predicting the chemical properties of elements ?

Q21.   (a) The mass of the body on earth is 60 kg, what is its weight on the earth and on moon ?
        (b) How is the weight of an object related to its mass ?   [3]

Q22.   Write the main characteristics of mammalia.   [3]

OR

Write some characteristics of angiosperms.

Q23.   Explain the following :
        (a) An object increases its energy when raised through a height.
        (b) Why is the work done by a body said to be negative ?
        (c) When we push the wall, the wall does not move and no work is done.   [3]

Q24.   (a) In brief state what happens when
            (i) Dry apricot are left for sometimes in pure water and later transferred to sugar solution.
            (ii) Rheo leaves are boiled in water first and then a drop of sugar syrup is put on it.
            (iii) Golgi apparatus removed from the cell.
        (b) Draw a neat and well labelled diagram of a typical prokaryotic cell.   [3]

SECTION -C

Q25.   Sound waves of wavelength A travel from a medium in which its velocity is υ m/s into another medium in which velocity is 3υ m/s. What is the wavelength of the sound in the second medium ?   [5]

OR

What are wavelength, frequency, time period and amplitude of a wave ?

Q26.   Describe an activity to determine the boiling point of water and melting point of ice.   [5]

Q27.   (a) Mention the role of atmosphere in climate control.
         (b) How does the air move to become a wind ?   [5]

OR

Differentiate between acute and chronic diseases and outline their effects on our health.

Q28.   A motorcar of mass 1200 kg is moving along a straight line with a uniform velocity of 90 km/h. Its velocity is slowed down to 18 km/h in 4 s by an unbalanced external force. Calculate the acceleration and change in momentum. Also calculate the magnitude of the force required.   [5]

Q29.   What is the relationship between mole, avogadro number and mass ?   [5]

OR

(a) Define the term valency. What is the valency for magnesium and copper ?
(b) What is atomicity? What is the atomicity of phosphorus and nitrogen ?
(c) Calculate the number of molecules of sulphur (S_8) present in 16 g of solid sulphur.

Q30.   Differentiate between vertebrates and invertebrates.   [5]