BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLSSENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

PERIODIC TEST-2(2024-25)

SCIENCE (086)

Class: IX **MARKING SCHEME** **Duration: 1 Hr**

Date: 07.12.24 **Max. Marks: 25**

Section–A

MCQ:

1. (a) Pa 1

2. (c) By competing for nutrients in soil causing low availability of nutrients 1

3. (c) Oxygen 1

Section–B

4. An army tank rests on a continuous chain to distribute its weight over a large area, which reduces the pressure on the ground and prevents the tank from sinking: 1+1

5. Buoyancy is a force acting on an object that causes it to rise or move higher. The difference in the pressure exerted on the object by the fluid or air in which it is creates buoyancy. The buoyant force causes the thing to float or sink. 1+1

6. a) Kharif crops: are dependent on the monsoon, and their cropping season runs from July to October. Examples include rice, maize, millet, ragi, pulses, soybean, groundnut, etc. Rabi crops: are sown in the winter after the monsoon rains are over and harvested in the summer, their cropping season runs from October to April.

   b) Macronutrients are elements which plants require in relatively large amounts where micronutrients are those which plants require in much smaller amounts. 1+1

7. CaO, Al_2S_3 1+1

8. Polyatomic ions are groups of atoms that are held together by a covalent bond and carry a positive or negative charge. SO_4^{2-} . 1+1

Section - C

9. 1+1+1

Volume, $V = 20cm^3$

Mass, $m = 50g$

Density of water, $\rho_w = 1gcm^{-3}$

Step 2: Concept

1. If the density of a body is higher than the density of water, it sinks in water.
2. If the density of a body is lower than the density of water, it floats on water.

Step 3: Calculation of density

Density of body, $\rho_b = \frac{m}{V}$

$\rho_b = \frac{50}{20} = 2.5gcm^{-3}$

$\rho_b > \rho_w$

Since the density of the substance is greater than the density of water, it will sink.

10.(a) (i) C_2H_2 =2X12 +2x1 =26u 1

(ii) HNO_3 =1X1 +1x14+3X16 =63u 1

(b) 5 and 3 ½ + ½

11.a. Preventive measures and biological control methods offer a more sustainable, environmentally friendly, and economically viable approach to pest management. These methods help protect crops in a way that maintains ecological balance, promotes soil health. 1

b) Manure is rich in organic matter, which improves the structure of the soil, making it more porous and better at retaining moisture. Encourages root growth.
Fertilizers provide specific, concentrated nutrients that plants require in large quantities, such as nitrogen, phosphorus, and potassium (NPK). These nutrients help plants grow faster and produce higher yields. 1

c) Intercropping involves growing two or more crops together in the same field during a single growing season. Improves Soil Structure and Health, Reduced Dependence on Fertilizers and Pesticides . Crop rotation involves changing the type of crop grown in a field from one season to the next. Helps maintain or improve soil fertility, Weed Management, Pest and Disease Control, It focuses on long-term soil health, fertility, and pest/disease management across seasons. 1

12. The process is Irrigation. The types are: Irrigation through wells 1.Dug wells or bore wells. a farmer pulls out water from wells by himself or using cattle and carries to farming fields This method can vary in different regions.
2. Irrigation can be done by water from canals.in this method canals are constructed to divert water from reservoirs to reach the agricultural fields.
3.River lift: Water is directly drawn from rivers and supplied to crops.
4. A sprinkler system, as its name suggests, sprinkles water over the crop and helps in an even distribution of water. Here a pump is connected to pipes which generate pressure and water is sprinkled through nozzles of pipes.
5. Drip Irrigation In this type, drops of water are delivered near the roots of the plants This method can also be used in regions where water availability is less.

(any 3 from above methods) 1+1+1

OR

Crop loss has remained a major problem for farmers across the world.

1. Insect pests attack the plants (i) they cut the root, stem, and leaf, (ii) they suck the cell sap from various parts of the plant, and (iii) they bore into stem and fruits.
2. Some bacteria produce toxins that can lead to cell death. Some bacteria inject special proteins that can lead to cell death. Bacteria can cause spoilage by breaking down food, producing acids or other waste products.
3. Fungi cause various diseases in plants. fungi produce toxins and kill cells. They enter in cells and kills them. 1+1+1

**********Best of luck********