Class 9 (History) Tuesday

Chapter: The Later Vedic Period

The epics happens to be the important literary works of this time.The Ramayana ia the work of Valmiki & the Mahabharata is the work of Ved Vyasa.In Ramayana the story revolves around Rama & how he lived in exile for 14yrs.During his exile how he defeated the Rakshasas had been the theme of the story.In case of Mahabharata the whole plot revolves around the conflict between the two group of brothers & how the great war of Kurukshetra was fought in order to resolve the conflict.The Epics is serving as a source of information about that age & at the same time they are acclaimed for their philosophical value.They reveal the ideals of family life & Bhagavad Gita part of the Mahabharata teaches us that the Soul is immortal & what is true Dharma.

Question(Long)

Discuss the importance of Epics.

(Tue) ,Class-IX, EVS

Ch-4, Topic(Biogeographic Zone of India)

Home Assignment....

1) What are the major biogeographical Zones of India?
2) What do you mean by biogeographic Zones?
3) Why India called mega diversity nation?
4) How many hotspots are there in India?
5)) Which state in India has least biodiversity?

CLASS – IX

HOME ASSIGNMENT

Subject- SUPW

Date – 28.04.2020

GARDENING

In your previous assignment I have already discussed about gardening. To maintain a good garden you have to follow these steps:-

1. Plantation of good quality of plants.
2. Regular watering of plants.
3. Save plants from excessive exposure of sun light.
4. Using good quality of fertilizers.
5. Using of insecticides if required.

I will also give you some decorative ideas which I think will be helpful for your project.

1. Rock Path.
2. Circular Stone Path.
3. Garden small pond for water plants.
4. Raised rectangular plank for small flowers and cactus.
5. Water pot for birds and very small plants.

Mathematics- Mensuration

Class-IX

Assignment:- Date:-28.04.20.

Question 1.

Find the length of the diameter of a circle whose circumference is 44 cm.

Solution:

Let radius of the circle = r

then circumference = $2\pi r$

$\therefore\ 2\pi r = 44 \Rightarrow = \frac{2 \times 22}{7} r = 44$

$\Rightarrow \quad r = \frac{44 \times 7}{2 \times 22} = 7\,\text{cm}$

$\therefore$ Diameter = $2r = 2 \times 7 = 14$ cm.

Question 2.

Find the radius and area of a circle if its circumference is 18π cm.

Solution:

Let r be the radius of the circle

$\therefore$ Circumference = $2\pi r$

$\therefore\ 2\pi r = 18\pi \Rightarrow 2r = 18 \Rightarrow r = \frac{18}{2} = 9\,\text{cm}$

Area = $\pi r^2 = \pi \times 9 \times 9 = 81\pi\ \text{cm}^2$

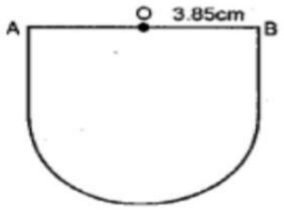
Question 3.

Find the perimeter of a semicircular plate of radius 3.85 cm.

Solution:

Radius of semicircular plate = 3·85 cm

$\therefore$ Length of semicircular plate = πr



$\therefore$ Perimeter = $\pi r + 2r = r(\pi + 2)$

$= 3{\cdot}85\left(\frac{22}{7} + 2\right) = 3{\cdot}85 \times \frac{36}{7}$

$= 0{\cdot}55 \times 36 = 19{\cdot}80 = 19{\cdot}8\,\text{cm}$.

Home Work-

Q1. The wheel of a cart is making 5 revolutions per second. If the diameter of the wheel is 84 cm, find its speed in km/hr. Give your answer correct to the nearest km.

Q2. A road 3.5 m wide surrounds a circular plot whose circumference is 44 m. Find the cost of paving the road at ₹50 per m2.

Q3. The sum of diameters of two circles is 14 cm and the difference of their circumferences is 8 cm. Find the circumference of the two circles.

Q4. A copper wire when bent into an equilateral triangle has area 121√3 cm2. If the same wire is bent into the form of a circle, find the area enclosed by the wire.

Q5. A rectangle with one side 4 cm is inscribed in a circle of radius 2.5 cm. Find the area of the rectangle.

DREAMLAND SCHOOL
CLASS IX (session 2020-21)
BIOLOGY HOME WORK 3

CHAPTER 4 :POLLINATION AND FERTLIZATION

Quick Review of the chapter

- **What is pollination-**Pollination is the **transfer of pollen** from a male part(anther) of a plant to a female part(stigma) of a plant, later enabling fertilisation and the production of seeds.
- **Pollination can occur in three major ways-**
    1. Autogamy-The pollen of the same flower fall on its stigma by itself.
    2. Geitengamy-The pollen of another flower of the same plant may fall on the stigma.
    3. Allogamy-The pollen of a flower of another plant of the same species may fall on the stigma
- **Types of pollination**There are two types of pollination, called self-pollination and cross-pollination.

Self-pollination is the more basic type of pollination because it only involves one flower. This type of pollination occurs when pollen grains from the anther fall directly onto the stigma of the same flower.

Although this type of pollination is simple and quick, it does result in a reduction in genetic diversity because the sperm and egg cells of the same flower share genetic information.

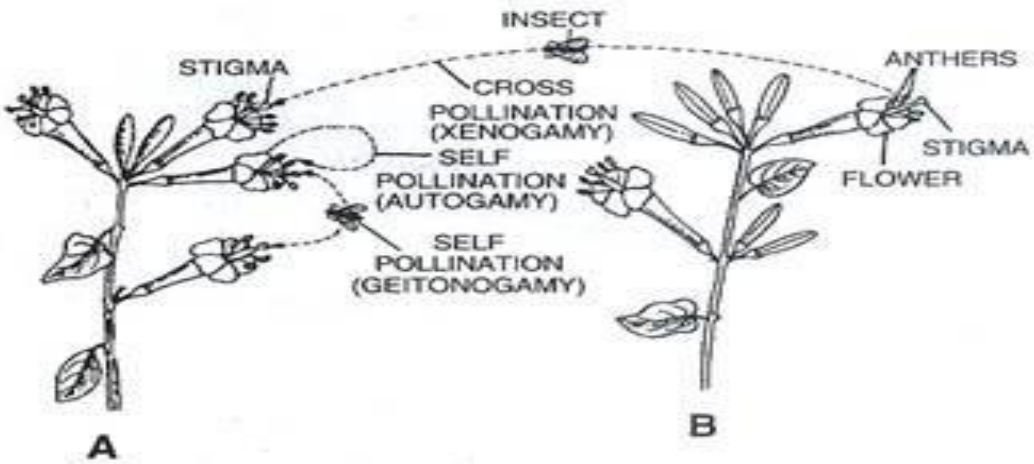


Fig. 2.16. Self and Cross pollination.

Cross-pollination is a more complex type of pollination that involves the transfer of pollen from the anther of one flower to the stigma of a different flower.

This type of pollination results in an increase in genetic diversity because the different flowers are sharing and mixing their genetic information to create unique offspring.

A. Self-pollination

Pollination between flowers of the same plant is called self-pollination.

Adaptations for Self-pollination-

1. Cleistogamy-Some flower grow close to the soil and do not open up, so only way is to go for self pollination, as in Pansy(shown below).

Advantages and Disadvantages of Self Pollination

Self pollination

Advantages	Disadvantages
1. Pollination is sure	1. Offspring gets weaker
2. Parental characters are preserved	2. New variety not possible
3. Fewer pollen grains are needed	3. Weaker strains cannot eliminated
4. Flowers are not large / showy/scented / have nectar	

B.Cross-pollination

In these anthers of flowers of one plant is transported to the stigma of flower of another plant.

Cross-pollination

Advantages

- Offspring can inherit beneficial qualities from both parents.
- More varieties of offspring are produced.
  - This increases the chances of the offspring surviving changes in the environment.
- More viable seeds that are capable of surviving longer before germination are produced.

Disadvantages

- Require two parent plants
- Require external factors, like insects or wind
- More pollen is wasted

Adaptations for Cross-pollination/How does a chasmogamous bisexual flower prevent self-pollination?

A chasmogamous bisexual flower prevents self-pollination in the following ways:

1. **Dichogamy:** In this strategy, the release of pollens and the receptivity of stigma are not synchronized. For eg., in sunflower, the stigma becomes receptive long after the pollen release.

   I. Protoandry- In some plants anther of the flower mature earlier than the stigma, e.g,bhindi, salvia etc
   II. Protogyny-In some plants stigma of the flower matures earlier than anther, e.g,custard apple,peepal.

2. **Herkogamy:** In this, the male and female flowers are present at different locations. In this, the pollen of the flower cannot come in contact with the stigma of the same flower. For eg*., Pansy, Iris.*
3. **Self-sterility:** It is a mechanism in which the growth of the pollen tube in the pistil or the germination of pollen grains is inhibited. This prevents the fertilization of the ovules from the pollen of the same flower. For eg., Ray florets of sunflower, orchids.
4. **.Unisexuality** flower A flower that possesses either stamens or carpels but not both. A **plant** may be **unisexual** (dioecious), possessing only male flowers or female flowers; or it may be monoecious with male and female reproductive organs borne in the same flower or in different **unisexual** flowers but on the same **plant**.

Q. How do self-incompatibility restrict autogamy? How does pollination occur in such plants?

A.3. Self-incompatibility restricts autogamy by a mechanism known as self-sterility. This is a genetic mechanism in which the germination of pollen grains or the pollen tube growth in the pistil is inhibited which prevents the pollen from fertilizing the ovules. Such plants pollinate by the process of cross-pollination.

Agents of Cross-Pollination

A. Characteristics of wind-pollinated(Anemophilous) flowers:

- These flowers are not brightly coloured.
- They possess no special odours or nectar.
- They are small and have no petals.
- Their stigma and stamens are exposed to air currents.
- The pollen is smooth, light can be blown easily by wind and are in large numbers.
- The stigma is feathery and can catch pollen from the wind.

B. Characteristics of water-pollinated flowers(Hydrophilous):

- They possess small male flowers that are not clearly visible.
- A large number of pollens are released in water that is caught by large, feathery stigma of female flowers.
- This pollen keeps floating on the water surface until they are caught by female flowers.

C. Characteristics of insect-pollinated flowers (entemophilous):

- They are large with bright-coloured petals to attract insects.
- The flowers have nectar and a pleasant fragrance.
- The pollen grains are sticky and can easily stick to the insect's body.

- **Ornithophily** is defined as the process of pollination by birds. Birds which come to feed on flower material and fruits often allow dispersal of pollen grains with them to other nearby flowers. Such flowers are known as Ornithophilous.
  Rafflesia.
- **Artificial pollination** is the process in which **pollination** does not occur naturally but is rather influenced by humans, where they carry the pollen of the flowers to another flower and allow them to fertilize the flowers.

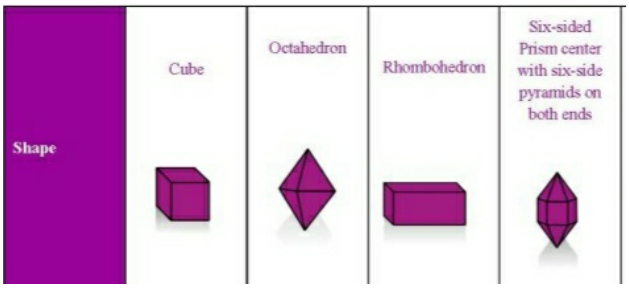
- **Assignment Questions-**
  A. Write difference between the following-
     1. Entemophilous and anemophilous flower.
     2. Cross pollination and self pollination.
     3. Geitenogamy and herkogamy.
  B. Why nature favours cross pollination over self pollination.
  C. Write the disadvatages of cross pollination.

Madhubanti Banerjee

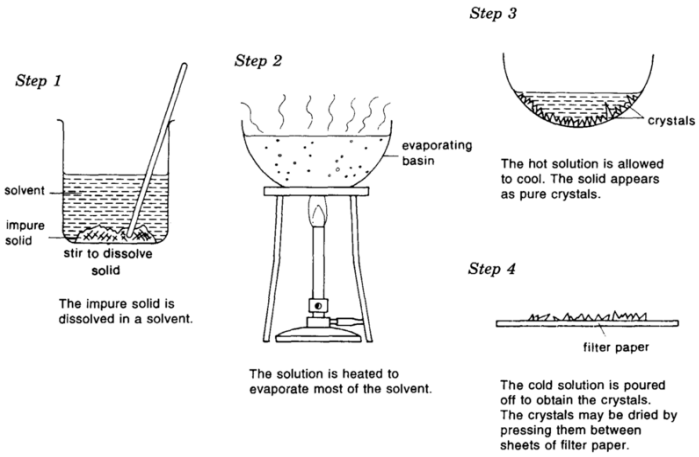
Chemistry Class 9

Chapter 3:water(solutions)

- **Crystals and crystallization**:Crystal is a homogeneous solid of definite geometric shape.It has symmetrically arranged smooth plane surfaces which meet forming sharp edges.Crystallisation is the process of obtaining crystals of a substance.Some shapes in which crystals appear are rhombohedral(CuSO4) octahedral(FeSO4) prismatic(,KNO3),cubic(NaCl)



- In laboratory crystals ate obtained by cooling a saturated solution,by slowly evaporating a saturated solution,by cooling a fused mass or by sublimation.The process of inducing crystallization by adding a crystal of pure substance into its saturated solution is called seeding.



Crystallization process by cooling hot saturated solution

- **Hydrated and anhydrous substances**:The crystals of some salts contain water of crystallization(loosely bound water molecules which is an integral part of their crystalline structure) known as hydrated salts.These water molecules at times give colour to the salt like copper sulphate gets its blue colour because of water molecules which turns white when heated as the water vaporises.A substance is anhydrous if it contains no water of crystallization.

- On heating crystals at times produces a crackling sound called de crepitation due to the breaking of bigger crystals into smaller ones.This is seen by NaCl.On the other hand crystals of potassium nitrate on heating first melts into a colourless liquid and then on strong heating produce oxygen.A light yellow solid is left behind.
- **Properties: Efflorescence** is the phenomenon where a compound loses its water of c on exposure to dry air which results in the loss of crystalline shape and finally crumbling.Eg:washing soda,epsom salt.
- **Deliquescence** is the property where substances absorb moisture from the atmosphere become moist lose their crystalline structure and ultimately dissolve in the absorbed solution forming saturated solution.Eg:NaOH,KOH,$MgCl_2$. Another property is **hygroscopy** which is similar to deliquescence ie absorb water from atmosphere but the difference is do not absorb enough water to form solutions.Eg: concentrated sulphuric acid,quicklime
- **Drying agents** are substances that can readily absorb moisture from other substances without chemically reacting to it whereas **dehydrating substances** are agents that can remove even the chemically combined water molecules from compounds.Drying agents represent physical change but dehydrating agent represent chemical change.Eg:CaO(drying agent),concentrated sulphuric acid(acts as both).

ASSIGNMENT

1. Define crystallisation.
2. Mention the ways of obtaining crystals in lab
3. Give difference between with examples: i)hydrous and anhydrous salts.
   Ii)drying and dehydrating agent
4. What do you observe: i) hydrated copper sulphate is heated.

   ii) NaCl crystals are heated

   iii) potassium nitrate crystals heated.
5. Differentiate between hygroscopic substances and deliquescent substances with examples