Lesson - 2
The flower

II. Short answers questions: A

1. Calyx is the first and the outermost whorl of the flower. It is made up of tiny green leaf like structures known as sepals.

Corolla is the second hole that lies in a two sepals. It consists of large brightly coloured petals and may bear fragrance.

2. Androecium is the second whorl of the flower and the male reproductive part. It consists of delicate filament like structures known as stamens.

Gynaecium is the innermost whorl of the flower and it is the female reproductive part. It consists of carpel or pistil.

3. The transfer of pollen grains from the anther to the stigma of the same flower or another flower on the same plant is known as self pollination.

The transfer of pollen grains from the anther one flower to the stigma of another flower, on different plant of the same kind is known as cross pollination.

4. Pollination by insects is called entomophily. When the insects move from one flower to another flower, the Pollen is transferred to the stigma of the other flower and fertilization takes place.

Pollination by wind is called and anemophily.

5. If there is any part of the plant, other than the ovary that participates, in fruit formation, it is called false fruit.

The fruit in which only the ovary grows to form a fruit is called a true fruit.

6. Epicarp is the outermost thin skin that covers the entire fruit.

Endocarp is the hard innermost layer that encloses the seed.

7. The seeds in which cotyledons emerge as two embryonic leaves are called dicotyledons.

The seeds in which cotyledons emerge as one embryonic leaves are called monocotyledons.

8. In hypogeal germination, cotyledons remain in the soil due to the elongation of epicotyl.

In epieal , germination cotyledons are pushed above the ground as the Seedling grows.

Short answers questions: B

1. Seeds need to absorb water while lying in the soil in order to help the enzymes to become active In the Seed. Enzymes digest the stored food in the cotyledons and make it soluble. The soluble food then diffuses into the embryo. This allows the radicle and plumule to grow.

2. Flowers are important to plants because it is the reproductive organ of the plant. It helps the

formation of fruit.

3. The plants which do not have flowers use spores to reproduce. Spore producing plants include plant such as mosses and Ferns.

4. Yes, pollination can be done artificially. Hand pollination, also known as mechanical pollination is a technique that can be used to pollinate plants when natural or open pollination is either undesirable or insufficient. This method of pollination is done by manually transferring pollen from the stamen of one plant to the pistil of another.

5. The calyx and Corolla do not directly take part in the fertilization process, and are hence known to be the accessories are non essential parts of a flower.

Short answers questions: C

1. Pollination is the process of transfer of pollen grains, produced inside the anther, to the stigma of the same or another flower.

2. Some animals like, bats, squirrels and birds suck nectar from flowers and in the process, Pollen stick to their bodies. When they visit another flower, the pollen grains are transferred to the stigma of that flower. These flowers that are pollinated by animals are usually large and bright and grow on tall trees.

3. The pollen grains are transferred by the Agents of pollination to the stigma of the same or different flower. The Pollen Grain develops a Pollen tube that penetrates the stigma and runs down the style to reach the ovary.

4. There are some fruits that develop from an unfertilized ovary. Such fruits are called parthenocarpic fruits. These fruits do not contain seeds, as there is absence of fertilization. For example, some varieties of pineapple and grapes.

5. The white area on the dicotyledonous seeds is known as hilum. There is a small opening above hilum and is known as micropyle.

6. Seeds of some plants are dispersed when the ripened fruit bursts open. For example, balsam fruit bursts when ripe and dry and the seeds are expelled and thrown out with a force. These seeds are scattered around the parent plant where they germinate under favourable conditions.

7. Conditions necessary for germination:

Water- when the seeds are sown in the soil, they absorb water from the soil. This helps the enzymes to become active In the Seed. The enzymes digest the stored food in the cotyledons and make it soluble. The soluble food then diffuses into the embryo. This allows the radicle and the plumule to grow.

Optimum temperature or warmth - very high or low temperature can hamper the seed germination. Thus, a moderate temperature is ideal for the seed to germinate.

Oxygen - seeds cannot germinate in the absence of oxygen. Thus, air is essential for the seed to germinate..

C. 1. The third whorl of the flower - Androecium.

2. The plants in which both male and female reproductive parts are present - Hermaphrodites.

3. The kind of pollination that involves two different plants of the same kind - cross pollination.

4. This provides food and nutrition to the embryo - endosperm.

5. The middle, sweet and fleshy, edible layer of fruit - mesocarp.

6. The portion of the stem that lies above the cotyledon - epicotyl.

7. Small opening above the hilum - micropyle.

Lesson – 3
The cell

II. Short answers questions:

1. A cell is a structural and functional unit of life. The cell is responsible for providing structure to our body.

2. Unicellular organisms are those organisms which are made up of only a single cell.

Multicellular organisms are those organisms which are made up of more than one cell.

3. Ribosomes are tiny particles located at two different places in the cytoplasm. Some more scattered in the cytoplasm and some more connected to the endoplasmic reticulum.

4. The endoplasmic reticulum transports the synthesized proteins in the vesicles to the Golgi apparatus.

5. Chloroplasts, chromoplasts and leucoplasts are the three types of plastids.

6. Lysosomes digest worn out cell organelles. They are also called suicidal bags. They throw out harmful and unwanted waste that enters the cell.

7. Chlamydomonas is an example of oval shaped cells.

Lesson – 4
The digestive system

II. Short answers questions: A

1. Foods are the source of various nutrients which keep us disease free,

2. Proteins, carbohydrates and fats provide us with nutrients for growth under repair of damaged cells and tissues.

3. It is important to brush our before going to bed and after waking up in the morning to prevent bacteria building up and prevent gum diseases.

4. When we eat bread or rice, after chewing it for a while, it tastes sweet because the digestive enzymes in our spit gradually digest the starch in the bread and turn it into to smaller sugar molecules.

5. a. Dentine, b. Villi c. Plaque d. Erepsin e. pharynx

Short answers questions: B

1. Salivary glands: the salivary glands secrete salivary in enzymes like salivary amylase that breaks down starch into maltose.

2. Incisors: incisors for biting and cutting the food

3. Oesphagus: It acts as a Passage to carry food from mouth to stomach without any digestion.

4. Liver: it secretes greenish Yellow fluid called bile which helps in the breakdown of fats into smaller globules.

5. Rennin: it converts the milk protein, casein into insoluble paracasein.

6. Chyme: it is the thick paste that is transferred from the stomach to the small intestine.

7. Bile: It breaks the fats into simpler compounds which are easier to absorb by the body.

8. Lipase: Pancreatic secretions contain lipase for Breaking Down fats.

Short answers questions: C

1. The food is ingested through the mouth. The process of digestion begins as we start chewing the food.

2. Liver secretes greenish Yellow fluid called bile which helps in the breakdown of fats into smaller globules.

3. The wave of muscular contraction in the oesophagus is called peristalsis.

4. The tongue is a muscular organ which helps in chewing and swallowing of food. It has taste buds which help detect taste in the food.

5. Different types of human teeth are incisors, canines, premolars and molars.

6. Digestion mainly occurs in the mouth and stomach.

7. Dental plaque is formed when. Food particles or drinks remain on the teeth even after consuming them. The natural bacteria of the mouth thrive on the eatables and produce acids.