STEPPING STONE SCHOOL (HIGH)

CLASS :6

Subject: BIOLOGY
Topic: Answers to worksheets
Dated: 27/04/2020, 29/04/2020, 1/05/2020, 11/05/2020, 18/05/2020, 20/05/2020

Answers to Worksheet No.:1

Date **: 27/04/2020**

Q1.Answer in one word:-

1. The point of attachment of leaf to the stem –NODE
2. A bud present on the axil of leaf – AXILLARY BUD
3. A space between two nodes – INTERNODE
4. A leaf in which the petiole is present – PETIOLATE
5. The wide, thin flat part of a leaf – LAMINA/LEAF BLADE

Q2) DEFINE THE PARTS OF THE LEAF AS SHOWN IN THE DIAGRAM:-

a) **Leaf Apex: -** The tip of the lamina is called leaf apex.

b) **Leaf margin:-**The edge of the leaf blade is called leaf margin. Different leaves have different margins

c) **Veins: -** These are fine lateral branches that arise from the midrib. They further branch out to form veinlets. The veins provide rigidity to the leaf blade and help in the transport of mineral nutrients.

d) **Midrib:-**It is the main vein that extends from the petiole up to the leaf apex and runs along the centre of the leaf blade.

e) **The petiole** is the stalk which connects the leaf base with the leaf blade.

f) **Axillary bud:-**It is a type of bud that develops at the axil of a leaf. It is capable of developing into a branch of the shoot or a cluster of flowers

Answers to Worksheet No.:2

Date **:29/04/2020**

Q1) Answer in one word:-

1) The tiny pores through which air enters the leaves- STOMATA
2) A physiological process that keeps the plant cool-TRANSPIRATION
3) The arrangement of veins on the leaf-VENATION
4) The leaf which has parallel venation-BANANA LEAF
5) A leaf in which the leaf blade is divided into leaflets-COMPOUND LEAF

Q2) Answer the following questions:-

1) ***Photosynthesis: -** The process by which green plants manufacture food using carbon dioxide, water in the presence of sunlight and chlorophyll.
***Transpiration:-**It is the process by which leaves get rid of excess water in the form of water vapour it has a cooling effect on the plant.
***Gaseous Exchange:-**It is the process by which plants exchange gases through tiny pores called stomata present in the leaf.

2)**PEEPAL**

3) a)

SIMPLE LEAF	COMPOUND LEAF
1. It has only one leaf blade/lamina.	1. In this leaf, the leaf blade is divided into many distinct leaflets.
2. The lateral bud occurs at the base of	2. There are no lateral buds at the base

the petiole. Eg:-mango, Papaya	of each leaflet. E.g.:-Rose,neem

b)

RETICULATE VENATION	PARALLEL VENATION
1.In this type of venation, the veins and veinlets are interconnected over the entire lamina	1. In this type of venation, the veins of leaves run parallel to each other.
2. It is found mainly in dicot leaves. E.g. Peepal,mango	2. It is found mainly in monocot leaves. E.g. Maize, Banana

4) **Phyllotaxy:- T**he arrangement of leaves on the stem in such a manner that they get maximum exposure .to sunlight. The different types of phyllotaxy are alternate , opposite and whorled

Answers to Worksheet No.:3

Date **:1/05 2/2020**

Ans1) Cactus plants grow in desert areas where there is shortage of water. Therefore the leaves are modified into spine to minimise loss of water by transpiration. The spines also protect the plants from grazing animals.

Ans. 2) Sweet pea and Glory Lily

Ans. 3)i) Leaf tendril—The tendrils provide suitable support in climbing of weak stems. They stretch out and coil around a suitable support to help the plant climbing.

Ans.3) ii) Leaf spine--- The leaf spines minimise loss of water during transpiration. The spines also protect the plants from grazing animals.

Ans.4) Insectivorous plants are those plants that are adapted to grow in soil which does not have enough minerals especially nitrogen. Therefore these plants feed on insects to obtain minerals, although they have chlorophyll in their leaves that help them in making food.
Example:- Pitcher Plant, Venus Flytrap

Ans. 5) In some plants, a new plant can be developed from the vegetative parts like roots, stems, or leaves. This is known as vegetative propagation. Some plants such as Bryophyllum and Begonia produce adventitious buds in their leaf margins. When the leaves of such plants fall on the moist soil, these buds develop into new plantlets.

Ans. 6) Scale leaves are thin and dry structures which are usually brownish in colour or colourless. They take up the function of protecting the axillary buds as in ginger. In onion, they store food prepared by the plant and become thick and fleshy

ANSWERS TO WORKSHEET # - 4 DATE 11/05/2020

Q1) Name them.

1. Petiole
2. Photosynthesis
3. Leaf tendril
4. Scale leaves
5. Bryophyllum

Q2) Fill in the blanks:-

1. Stomata
2. Entire leaf
3. Leaf tips
4. Leaf
5. Insectivorous
6. Root system
7. Leaf margin

Q3) State if the following are true or false. Correct the false statement.

1. False. The leaves of sweet pea plant are modified into leaf tendril.
2. True
3. True
4. False. Insectivorous plants grow in nutrient poor soil.
5. False. Parallel venation is found in banana leaf.

Q.4) Match the following:

1. Maize leaf----- Parallel venation
2. Mango leaf----- Reticulate venation
3. Onion bulb----- Scale leaves
4. Leaf ------ kitchen of the plant
5. Gaseous exchange of leaves------ stomata

Q5

Ans1) Two functions of root are:

- The root fixes the plant firmly into the soil.
- Absorbs water and minerals for the growth of the plant.

Ans2) Two functions of stem are:-

- It bears the branches, leaves, fruits, buds and flowers.
- It holds the plant upright and exposes the leaves to sunlight and air.

Ans.3) Photosynthesis is the process by which green plants prepare food by using water, carbon dioxide in the presence of sunlight and the green pigment called chlorophyll.

Ans.4) The arrangement of veins on the leaf is called venation. There are two

There are two types of venations:

- Reticulate venation---Example, Peepal, Mango
- Parallel venation-------Example, Maize, Banana

Ans.5)i)

Leaf Tendril	Leaf spine
1. It is a thin, thread-like coiled structure.	1. It is a sharp, needle like structure.
2. It provides suitable support in climbing of weak stems.	2. It minimises water loss during transpiration.

ii)

Tap root system	Fibrous root system
1.It has one single primary root which branches out further into finer branches of secondary and tertiary roots	1.In this a cluster of roots arises from the base of the stem.
2.It penetrates deep into the soil.	2.It is shallow and does not penetrate as deeply.
Example, roots of pea, balsam and mustard	Example, roots of grass, wheat, rice and onion plant

ANSWERS TO WORKSHEET # 5

DATE 18/05/2020

Q1 Give one word answer.

- Petals/Corolla
- Carpels/pistils
- Stamen
- Sepals/Calyx
- Pollen grain

Q2 Answer the following questions:-

A)

- Hibiscus – RED
- Morning Glory – BLUE
- Jasmine – WHITE
- Rose – PINK

B) *Hibiscus*

C) Ovule is found inside the ovary.

D) Male part of flower: - *Stamen/androecium*

Function: - It contains the pollen grains which take part in reproduction in plants by initiating pollination.

Female part of flower: - *Carpel/gynoecium*

Function: -The ovary contains the ovules where fertilisation takes place by the fusion of male and female gametes.

E) The fine yellow powdery substance present inside the anther of a flower is called pollen grains.

They are present in a flower so that they can take part in reproduction.

F)

- **Sepals**: -They protect the inner parts of a flower during bud stage.
- **Petals**: -They protect the essential whorls of a flower & attract bees, butterflies and insects for pollination. They may also secrete scent and nectar.
- **Stigma**: -It has a sticky substance for trapping the pollen grains.
- **Style**: -It holds the stigma high to catch the pollen grains. It varies in length.
- **Ovary**: -It protects the ovule and grows into the *fruit*.

ANSWERS TO WORKSHEET# 6

DATE 20/05/2020

Q1) Answer in one word:-

- pollination
- fertilization
- fruit
- dry & light
- nectar

Q2) Answer the following questions:-

Ans 1) The transfer of pollen grains from the anther to the stigma of the same flower or another flower of the same species is called pollination.

Ans 2) Fertilization is the process of fusion of male gamete and female gamete to form a single cell called zygote.

Ans 3) The steps of fertilization are as follows: -

- *After reaching the stigma the pollen grains develop a pollen tube which carries a* ***male cell*** *at its tip.*
- *The pollen tube travels through the style to reach the ovule inside the ovary.*

- *The **male cell** present in the pollen tube unites with the **female cell** (egg) in the ovule.*
- *The fusion of the **male cell** and the **female egg cells** results in the formation of a single cell called **zygote** which later develops into new plant.*

Ans 4) Characteristics of wind-pollinated flowers are: -

- *The pollen grains are dry and light.*
- *They are produced in large quantity.*
- *The flowers are small and not brightly coloured*
- *They do not produce scent or nectar*
- *Example, maize and wheat*

Ans 5) Difference between self-pollination and cross-pollination: -

SELF-POLLINATION	CROSS-POLLINATION
▪ When the pollen grains are transferred from the anther of a flower to the stigma of the same flower or another flower of the same plant is known as self-pollination. It occurs naturally.	▪ When the pollen grains are transferred from the anther of one flower to the stigma of another flower of the same plant or anther plant of the same type, it is termed as cross pollination. It occurs through external agents.

Ans 6) The characteristics of insect-pollinated flowers are: -

- *They have brightly- coloured petals to attract insects.*
- *They produce nectar.*
- *They are sweet smelling.*
- *Pollen grains and stigmas of such flowers are sticky*
- *Example, Salvia, Orchids, Hibiscus.*