Plants: Structure and Function

EXERCISE [PAGE 15]

Exercise | Q 1.1 | Page 15

Give examples of 3 plants that have: spiny fruits

Solution: jackfruit, breadfruit and custard apple

Exercise | Q 1.2 | Page 15

Give examples of 3 plants that have: spiny stem

Solution: cactus, acacia and aloe vera

Exercise | Q 1.3 | Page 15

Give examples of 3 plants that have: red flowers

Solution: rose, hibiscus and carnations

Exercise | Q 1.4 | Page 15

Give examples of 3 plants that have: yellow flowers

Solution: marigold, sunflower and daffodil

Exercise | Q 1.5 | Page 15

Give examples of 3 plants that have: leaves which close at night

Solution: acacia, mimosa and albizia

Exercise | Q 1.6 | Page 15

Give examples of 3 plants that have: single-seeded fruits

Solution: mango, plum, cherries

Exercise | Q 1.7 | Page 15

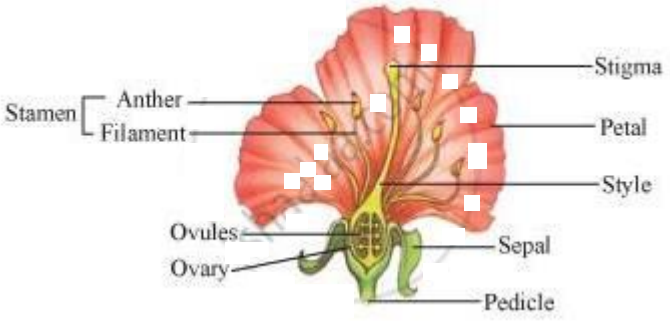
Give examples of 3 plants that have: many-seeded fruits

Solution: watermelon, apple and kiwi

Exercise | Q 2 | Page 15

Observe any one flower and its various parts and describe it in your own words.

Solution:



They different parts of a flower are:

1. Androecium (male reproductive organ) - The androecium consists of whorls of stamen. The stamen consists of the filament (long and slender stalk) and anther (bilobed structure). A typical anther is bilobed, which contains the pollen grains.

2. Gynoecium (female reproductive organ) − Gynoecium represents the female reproductive part made up of carpels. Carpel is made up of:

- Style − It connects stigma to the ovary.
- Stigma − It acts as a receptacle for the pollen grains.
- Ovary − It is the enlarged basal part on which style lies. Each ovary bears one or more ovules attached to cushion-like placenta. After fertilisation, ovules develop into seeds and ovary into fruit.

3. Calyx (accessory organ bearing sepals) **–** Calyx refers to the sepals.They are green in colour. They protect the plant in bud stage and also attract the insects for pollination.

4.Corolla (accessory organ bearing petals) **–** Corolla refers to the brightly coloured whorl of a flower. Individual unit of corolla is petals.Petals protect the inner essential organs (i.e., stamens and carpels) and attract pollinators since they are brightly coloured.

Exercise | Q 3.1 | Page 15

What are the similarities and differences between: jowar and moong

Solution:

Jowar	Moong
It is a type of monocot plant.	It is a type of dicot plant.
It has fibrous root system.	It has tap root system.
The leaves of jowar plant show parallel venation.	The leaves of moong plant show reticulate venation.

Similarity: Both jowar and moong are annual plants.

Exercise | Q 3.2 | Page 15

What are the similarities and differences between: onion and coriander

Solution:

sOnion	Coriander
It is a type of monocot plant.	It is a type of dicot plant.
It is a type of vegetable.	It is a type of herb.
The edible part is a bulb.	The edible part is leaf and stems.

Similarity: Both onion and coriander are annual plants.

Exercise | Q 3.3 | Page 15

What are the similarities and differences between: leaves of banana and mango

Solution:

Leaves of Banana	Leaves of Mango
The leaves of banana are very long and have bifurcations on their edges.	Leaves of mango are short in size.
It has parallel venation.	It has reticulate venation.

Similarity: Both banana and coconut are perrenial plants.

Exercise | Q 3.4 | Page 15

What are the similarities and differences between: coconut tree and jowar stalk plant

Solution:

Coconut tree	Jowar stalk plant
It can grow upto 15 - 23 metres.	It can grow upto 2 - 3 metres.
Leaves of coconut trees are arranged spirally.	Leaves of jowar stalk plants are arranged in opposite manner.

Similarity: Both have fibrous roots.

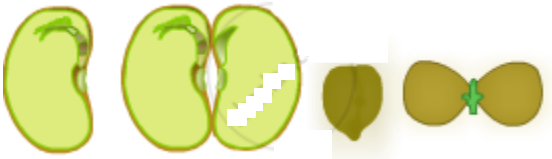
Exercise | Q 4.1 | Page 15

Explain the following image in your own words.

Solution: The Image represents a seed and its cross section. The seed consists of seed coat, cotyledon and an embryo. A seed coat is the outer covering of a seed. It is hard in nature and thus provide protection to the inner delicate parts of a seed. This embryo is thick and swollen due to the presence of food reserves.

Exercise | Q 4.2 | Page 15

Explain the following image in your own words.



Solution: The Image represents a monocot and a dicot seed. A monocot seed is made up of a single cotyledon called scutellum. It has a relatively small embryo which contains endosperm.

Exercise | Q 5 | Page 15

Describe the functions of various parts of a plant.

Solution: They different parts of a flower are:

- Androecium
- Gynoecium
- Calyx (accessory organ bearing sepals)
- Corolla (accessory organ bearing petals)

Calyx − Calyx refers to the sepals.They are green in colour. They protect the plant in bud stage and also attract the insects for pollination.

Corolla − Corolla refers to the brightly coloured whorl of a flower. Individual unit of corolla is petals.Petals protect the inner essential organs (i.e., stamens and carpels)andattract pollinators since they are brightly coloured.

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Exercise | Q 6.1 | Page 15

Certain properties are mentioned below. Find a leaf corresponding to the property and describe those plants.

Leaves with smooth surface

Solution: Salix caroliniana or commonly known as Southern Willow is a plant which has smooth leaves. The simple smooth-edged narrow leaves are 2-4 m long, green above and whitish underneath.

Exercise | Q 6.2 | Page 15

Certain properties are mentioned below. Find a leaf corresponding to the property and describe those plants.

Leaves with rough surface

Solution: Asperifolia is a type of plant which has rough leaves. It belongs to the category of shrubs.

Exercise | Q 6.3 | Page 15

Certain properties are mentioned below. Find a leaf corresponding to the property and describe those plants.

Fleshy leaf

Solution: Plants with fleshy leaves are called succulents and are usually found in areas like deserts. Their leaves are green and fleshy becuase they store water in them which can be used under adverse conditions. For example, opuntia.

Exercise | Q 6.4 | Page 15

Certain properties are mentioned below. Find a leaf corresponding to the property and describe those plants.

Spines on leaf

Solution: Many plants have spines on their leaves. It is a way of protecting themselves from being eaten and destroyed by animals. For example, Acacia and aloe vera.

Exercise | Q 7 | Page 15

Find the plant parts.

r	b	u	d	x	s	r	f
o	w	p	y	e	t	a	l
o	l	l	d	n	e	d	o
t	a	o	i	l	m	i	w
c	n	e	t	a	l	c	e
a	v	o	v	u	m	l	r
p	e	t	a	l	s	e	o
r	o	o	t	h	a	i	r

Solution: