

## 1) Underline the correct answer:

Root

1- The word adventitious refers to

- a- structures arising at usual places
- b- structures arising at unusual places
- c- structures arising at roots only
- d- structures arising at stems only

The root cap has many functions. Which of the following is not a function of the root cap?

- [A] **it generates new cells that differentiate into the tissues of the root**
- [B] it protects the apical meristem
- [C] it senses the direction of gravity
- [D] it lubricates the root tip as it pushes through the soil

One of two common root systems in plants is dominated by one large root called a...

- [A] **taproot**
- [B] adventitious root
- [C] fibrous root
- [D] deep root

## 2- Tap root develops from

- a- micropyle
- b- radicle
- c- plumule
- d- bud

1. What lies at the very tip of a root?

- a. root hairs
- b. the region of maturation
- c. the root cap
- d. the region of cell division
- e. the root apical meristem

In addition to anchoring a plant, roots usually function directly in which of the following processes?

- A. photosynthesis
- B. production of new leaves
- C. production of bud scales
- D. absorption of inorganic nutrients in solution
- E. all of these answers are correct.

## 3- The function of root cap is

- a- absorption
- b- division
- c- protection
- c- elongation

## 4. Pneumatophores are

- a- modified stems
- b- modified leaves
- c- outgrowth from the epidermis
- d- modified roots

## 5. Plants with parasitic roots have

- a- special "spongy" tissue
- b- root nodules
- c- an epidermis several cells thick
- d- no chlorophyll

**6. Velvane roots aid in**

- a- preventing loss of moisture
- b- photosynthesis
- c- supporting plants
- d- Food storage

**7. First organ appears during germination**

- a) plumule
- b) radical
- c) embryo
- d) cotyledons

**8. Most dicot plants have**

- a) aerial root
- b) fibrous root
- c) adventitious root
- d) tap root

**9. Root cap contains**

- a) chloroplasts
- b) amyloplasts
- c) chromoplasts
- d) oligoplasts

**10. Propagative roots contains**

- a) terminal buds
- b) adventitious buds
- c) apical buds
- d) lateral buds

**11. Suckers are**

- a) buds develop into aerial stem
- b) stems develop into aerial buds
- c) stems develop into aerial flowers
- d) buds develop into underground stems

**12. Root nodules contain**

- a) nitrogen-fixing bacteria
- b) hydrogen fixing bacteria
- c) protein fixing bacteria
- d) Phosphorus fixing bacteria

Stem

**13. Horizontal stems that grow above ground.**

a- Rhizomes      b- Stolons

c- Tubers              d- Corms

Rhizomes, tubers, corms, and bulbs all grow below ground, in the soil. Each is a...

- [A] flower
- [B] root
- [C] stem
- [D] leaf

8. Stem branches arise from what?

- a. the pericycle.
- b. the shoot apical meristem.
- c. axillary buds.
- d. auxiliary buds.
- e. internodes.

**14. Single flower with several to many pistils gives**

- a- Simple fruits    b- Grain
- c- Multiple fruits    d- Aggregate fruits

**15. Cladophylls aid in**

- a- preventing loss of moisture    b- photosynthesis
- c- supporting plants    d- respiration

**16. Flattened and very leaflike stems**

- a- Rambles    b- Tendrils
- c- Cladophylls    d- Prickles

**17.Thorns are**

- a- modified stems   b- modified leaves
- c- outgrowth from the epidermis   d- modified roots

**18.Structures found in stem only**

- a) blade and petiole   b) lamina and vines
- c) stipules and leaves   d) nodes and internodes

**19.The bud found in the angle between leaf and stem called**

- a) terminal bud   b) axillary bud
- c) naked bud   d) covered bud

**20.Terminal bud usually**

- a) form separate branch   b) extend twig length
- c) tend to tendril   d) form a leaf

**21.All these are stems except**

- a) tubers   b) corms
- c) rhizomes   d) velamen

Leaf

**22.Leaves have all the leaflets attached at the same point.**

- a- Pinnately compound leaves   b- Bipinnately compound leaves
- c- Palmately compound leaves   d- Simple leaves

**23.Succulent leaves modified for**

- a- reproduction   b- water storage

c- make up the absence of petals d- food storage

**24. When leaflets appear in pairs along a central stalk like rachis**

a- Pinnately compound leaves      b- Bipinnately compound leaves

c- Palmately compound leaves      d- Simple leaves

**25. Sessile leaf is a leaf without**

a) stipules      b) vines

c) buds      d) petioles

9. Paired appendages associated with or near a petiole where the petiole attaches to a stem are

A. bundle scars.

B. primordia.

C. stipules.

D. cuticles.

E. leaf scars.

The bundle sheath found in leaves of monocots and some dicots

- [A] **surrounds the veins**
- [B] coats the leaves
- [C] protects the plant from sunlight
- [D] produces the vascular tissue

In which shape does the blade of a dicot leaf contain separate leaflets, each with radiating principal veins.

- [A] Compound pinnate
- [B] **Compound palmate**
- [C] Simple

- [D] Whorled

**26.bractes are**

- a)reproductive leaves b) floral leaves
- c)storage rootsd) reproductive roots

Flower

**27.Stamens consists of**

- a) style and stigmab) filament and anther
- c) ovary and ovule d) sepals and petals

Fruit

**28.Dry fruits with pericarp extending out in the form of a wing**

- a-Achene b- Grain
- c- Samara d- Schizocarp

**29.Simple fleshy fruit with a single seed**

- a- Hesperidium b- Pepo
- c- Drupe d- berry

**30.Dry fruit split along two sides and seeds are born on a central partition.**

- a- Siliques b- Capsules
- c- Nuts d- Legumes

**31. Fruits usually develop from**

- a- ovule      b- ovary  
c- receptacle      d- embryo

**32. Fruit pericarp consists of**

- a) Endocarp + Mesocarp + Exocarp    b) Endocarp + Mesocarp  
c) Mesocarp + Exocarp    d) Endocarp + Exocarp

**33. A berry fruit with a leathery skin containing oils called**

- a) pome    b) drupe  
c) pepo    d) hesperidium

**34. Fruit derived from a single flower with several to many pistils**

- a) aggregate fruit    b) simple fruit  
c) multiple fruit    d) compound fruit

**35. Most common dry fruit that split and consist of at least two carpels and split in many ways.**

- a) capsule    b) achene  
c) nut    d) grain

Seed

**36. Seeds usually develop from**

- a- stamen      b- ovary  
c- receptacle    d- embryo

**37. The term pollination means**

- a- The union of an egg and sperm

- b- The transfer of pollen grains from an anther to stigma
- c- The union of polar nuclei and sperm
- d- The germination of pollen grains

**38. The part above the point of attachment of the cotyledons is**

- a- the plumule      b- the epicotyl
- c- the hypocotyl      d- the internode

**39. When seeds dormancy can be broken by placing seeds in a refrigerator in damp sand for few weeks, this is called**

- a- stratification      b- scrafication
- c- after ripening      d- apomixis

**40. The integuments becomes**

- a) seed coat b) fruit
- c) embryod) cotyledons

24. Which “stem” axis sits above the cotyledons?

- a. the hypocotyl
- b. the epicotyl
- c. the plumule
- d. the radicle

25. In a young seedling the part of the stem below the cotyledons is called the

- A. epicotyl.
- B. hypocotyl.
- C. plumule.
- D. radicle.
- E. coleoptile.

Taxonomy

**41. Chlorella is tiny unicellular algae that**

- a- use as important food and oxygen source. b- produce algin.

c-make up diatomaceous earth on ocean floor d- produce agar.

**42.Eukaryotic cells**

a- have membrane - bound organelles b- have 70s ribosomes

c- lack a nuclear enveloped- Lack membrane-bound organelles.

**43.Algae have a glassy shell that consist of two halves**

a- Euglena b- Diatoms

c- Chlorella d- Spirogyra

**44.Flower plants complete their life cycle in a single season**

a- Annuals

b- Biennials

c- Perennials

d- Monoecious

**45. Algae used as a source of agar, and also for human food**

a- Red algae

b- Spirogyra

c- Brown algae

d- Chlorella

**46.Algae produce algin,an important agent in hundreds of food products.**

a- Red algae

b- Spirogyra

c- Brown algae

d- Chlorella

**Compare between the following terms:**

1- Exocarp and pericarp

2- Monoecious and dioecious

3- Spines and prickles

4- Superior and inferior ovary

5-Division of Chlamydomonas and Diatoms

## **Define the following terms**

- 1- Contractile root
- 2- Hesperidium
- 3- Parthenocarpy
- 4- Double fertilization
- 5- Adventitious.
- 6- Pollination
- 7- Fertilization
- 8- Monoecious

**A**

**B**

- 9- dioecious
- 10- scarification
- 11- deciduous tree
- 12- evergreen tree
- 13- phyllotaxy
- 14- venation
- 15- bracts
- 16- annuals
- 17- biennials
- 18- perennials
- 19- Pnematophores
- 20- *Sucker*

<b>1-Rhizomes</b>		The arrangement of leaves around the stem
<b>2- Bracts</b>		Plants complete their life cycle in a single season
<b>3- Pome</b>		The union of an egg and sperm
<b>4- Spines</b>		Consists of ovary, style and stigma
<b>5- Exocarp</b>		The inner boundary around the seed
<b>6-Phyllotaxy</b>		Are modified stems
<b>7- Stratification</b>		have membrane - bound organelles
<b>8-Scarification</b>		Seeds develop without fusion of gametes
<b>9-Annuals</b>		Algaecan change its shape
<b>10- Legumes</b>		Consists of filament and anther
<b>11- Fertilization</b>		Simple fleshy fruit which its receptacle grows up around the ovary.
<b>12-Prickles</b>		Breaking seeds dormancy by placing seeds in a refrigerator in damp sand for few weeks
<b>13- Parthenocarpy</b>		Are floral leaves
<b>14-Stamens</b>		Breaking seed dormancy by nicking or cracking the seeds
<b>15- Pistils</b>		Dry fruit split along two sides
<b>16- Eukaryotic cells</b>		Are modified leaves
<b>17- Euglena</b>		Outgrowths from the epidermis or cortex

**Matching: Write in meddle column the number for the best answer.**

### **Put the suitable sign ✓ or ✗**

1. The main root functions are anchorage and absorption of water and minerals.
2. Most dicot plants have fibrous root systems.
3. The regions of root are called: root cap, region of cell division, region of elongation, and region of maturation.
4. The root cap contains particles called chromoplasts.
5. Velvane are modified stems.
6. Terminal bud may become branch or flower.
7. Tubers have adventitious roots.

8. Tendrils may refer to specialized stem or modified leaf.
9. Leaves of deciduous trees normally live for more than two to seven years.
10. Plants may take many years to produce seeds called perennials.
11. Corolla of the flower consists of sepals.
12. The ovary of the flower pistil develops later into a seed.
13. Pepo is a berry fruit with a leathery skin containing oils.
14. Aggregate fruit is derived from a single flower with many pistils.
15. Siliques is a dry fruit split along two sides and the seeds are borne on a central partition.
16. Plumule is the tip that will develop into a root.
17. All plant seeds germinate at 30°C.
18. Prokaryotic cells have sexual reproduction by fusion of gametes.
19. Division Chlorophyta includes the Green algae.
20. Algae are not important in aquatic food chains.
21. Diatom shells make up diatomaceous earth which used for filtering, polishes, insulation and reflectorized paint.
22. Algin is used as stabilizer and thickening agent in hundreds of food products, paints, medicines, papers, ceramic and others.
23. Brown algae are a source of fertilizer and iodine and some serve as food for both of livestock and humans.
24. Red algae are a source of agar, which is used as cultural medium for bacteria and other organisms or tissues; some are also used for human food.
25. Gymnosperm is two Greek words means covered seed.

Entire, serrate, and dentate are all descriptions of **leaf margins**\_\_\_\_\_.

Photosynthesis usually takes place in the (plant part) **chloroplast**\_\_\_\_\_ during the **day**\_\_\_\_\_.

The sites of growth and cell division are called **meristematic**\_\_\_\_\_ tissue.

Reproduction of a plant taking place without seeds or spores is called **asexual**\_\_\_\_\_ reproduction.

The leaves appear on the stem at a **nodes**\_\_\_\_\_.

A fleshy above ground horizontal stem is referred to as a stolon.

A fleshy below ground horizontal stem is called a rhizome.

Select the proper order for the different classification levels below. (1 point)

- a. Family, Class, Order, Phylum
- b. Phylum, Class, Order, Family**
- c. Phylum, Order, Class, Family
- d. Order, Phylum, Family, Class

Annual weeds complete their life cycle in 1 year.

Biennial weeds complete their life cycle in 2 years.

Weeds which continually produce growth for an indefinite number of years is called

- a. indefinite
- b. perennial**
- c. long-lasting
- d. persistent

The scientific name of an organism is composed of its:

- a. family name
- b. genus and species name**
- c. common name
- d. subgenus name

Why is it important to know and use the scientific name when working with plants and animals?

**To ensure people are talking about the correct plant or animal, to avoid confusion, to avoid giving the wrong information.**

What plant part is responsible for the formation of wood (xylem) and where is it located (known as secondary growth)? **Cambium, located between the bark and wood, phloem and xylem.**

Which term in the plant name *Magnolia grandiflora* 'Bracken's Brown Beauty' represents the genus?

- a. **Magnolia**
- b. *grandiflora*
- c. 'Bracken's Brown Beauty'

The epidermis of a root produces extensions called Root hairs that greatly increase the surface area of roots allowing greater water and mineral absorption.

Choose the female reproductive structure of a flower.

- a. receptacle
- b. stamen
- c. spore
- d. pistil**

What are two (2) inputs or “raw materials” required for photosynthesis?

**Water and Carbon Dioxide**

**Will give partial credit for sunlight.**

Choose the male reproductive structure of a flower.

- e. receptacle
- f. stamen**
- g. spore
- h. pistil

The process by which plants move water through their systems and cool themselves is called?

- a. respiration
- b. perspiration
- c. transpiration**
- d. aquafication

**True** or False: Respiration can proceed in darkness.

The location where leaves and lateral buds are attached to a stem is called?

- a. internode
- b. node**
- c. branch collar
- d. peduncle

A green pigment called   **CHLOROPHYLL**   is required for photosynthesis to proceed.

What is the correct term for plants that have male and female flowers on separate plants, such as some hollies?

- a. dioecious**
- b. imperfect
- c. incompatible
- d. monoecious

Which plant below is grown from a corm?

- a. gladiolus**
- b. daffodil
- c. iris
- d. lily

  **A**   Most fibrous & absorptive roots of plants are found in the: (not in manual)

- a. Upper 12 inches of soil
- b. Between 12 and 24 inches deep in the soil
- c. Greater than 36 inches deep

What does each word of the plant name *Magnolia grandiflora* 'Little Gem' represent in plant taxonomic terms?

*Magnolia* is the **genus**\_\_\_\_\_

*grandiflora* is the **species**\_\_\_\_\_

'Little Gem' is the **cultivar, variety**\_\_\_\_\_

What plant part is responsible for shoot and root elongation (known as primary growth)?

**Meristem, apical meristem**

True or **False**: Dioecious plants have male and female flowers, but on the same plant

Which of the following is an example of a multiple fruit?

- e. **Strawberry**
- f. Cherry
- g. Pineapple
- h. Grape

Why is a complete flower not also a perfect flower? This is wrong-don't use.

**A perfect flower has to have male and female reproductive parts, but a complete flower has to have all four floral parts (sepals, petals, stamen, and carpels). A complete flower can have both male and female parts, but lack a necessary component of being a perfect flower (apetalous).**

Which leaf structure is responsible for gas and water exchange?

- a. Stipule
- b. **Stomate**
- c. Epidermis
- d. Petiole

Which plant below is grown from a tunicate bulb?

- a. Gladiolus
- b. **daffodil**
- c. canna
- d. lily