

Types Of Plants

I. Alternation Of Generations

1. Circle the letter of each sentence that is true about alternation of generations.

- Gymnosperms**
- cones
Angiosperms
- flowers
- a. In all plants, the sporophyte generation is diploid. ← (2 sets of chromosomes)
 b. The gametophyte in seed plants is hidden within the sporophyte plant.
 c. The recognizable part of a seed-bearing plant is the gametophyte. ← sporophyte
 d. In all plants, the gametophyte generation is haploid. ← (1 set of chromosomes)

2. An important trend in plant evolution is the reduction in the size of the gametophyte.

Circle One :

True

False

3. Where are the gametophytes found in gymnosperms and angiosperms?

Gymnosperms = cones / Angiosperms = flowers

II. Nonvascular Plants

1. Which of the following statements is false concerning nonvascular plants?

- a. Nonvascular plants lack true roots, stems, and leaves.
 b. Their size is small and they are relatively simple organisms.
 c. Usually non-green gametophytes grow on the larger, more noticeable sporophytes.
 d. Sexual reproduction requires a film of water covering a mat of nonvascular plants.

2. List the three main types of nonvascular plants.

1. Mosses 2. Liverworts 3. Hornworts
 (flattened with palm-like sporophyte) (Green horn-like sporophyte)

III. Seedless Vascular Plants

1. Which of the following statements is false concerning seedless vascular plants?

- a. Seedless vascular plants do not produce seeds, but are larger than nonvascular plants.
 b. They do not possess vascular systems of xylem and phloem.
 c. The large sporophyte size enables spore wind dispersal to be much easier.
 d. Fertilization requires water, but seedless vascular plants have drought-resistant spores.

2. List the four main types of seedless vascular plants.

1. Ferns 2. Club Mosses (some have cones)
 3. Horse tails (whorls of scale-like leaves) 4. Whisk Ferns (highly branched stems)

IV. Gymnosperms

1. Define the term gymnosperm.

Gymnosperm - seed plants whose seeds do not develop within a sealed container (a fruit)
 ("naked seed")

2. Which of the following statements is false concerning gymnosperms?

- a. Produce seeds that do not develop with a sealed container (a fruit).
 b. Seeds protect the embryo, provide nutrients, and enable survival in adverse conditions.
 c. Gymnosperms produce tiny male and female gametophytes (known as pollen & seed).
 d. Very few gymnosperms are wind-pollinated.

3. Match the type of gymnosperm with the correct characteristics.

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|--------------------------|--|
| 1. <u>C.</u> Conifers | A. Short stems with palm-like leaves |
| 2. <u>A.</u> Cycads | B. Produce pollen & seeds in cones that resemble flowers |
| 3. <u>D.</u> Ginkgo | C. Leaves are needle-like or reduced tiny scales |
| 4. <u>B.</u> Gnetophytes | D. Fan-shaped leaves; Separate male & female trees |

V. Angiosperms

1. Define the term angiosperm.

Angiosperm - plant that produces seeds that develop within an enclosed specialized structure called a fruit ("case-seed")

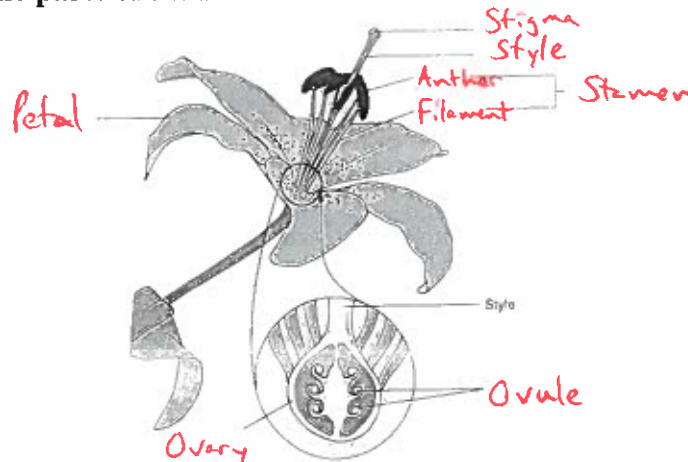
2. Which of the following statements is false concerning angiosperms?

- Seeds develop within an enclosed structure called a fruit.
- Male and female gametophytes develop within flowers.
- ☒ Pollination can only occur through insect pollination, and not wind or self-pollination.
- During development, seeds have a supply of stored food in the form of an endosperm.

3. Match the floral part with its description.

- | | |
|-----------------------|--|
| 1. <u>B.</u> Anthers | A. Stalk with the stigma at the top |
| 2. <u>F.</u> Carpels | B. Structures where male gametophytes are produced |
| 3. <u>E.</u> Filament | C. Flower part that contains one or more ovules |
| 4. <u>C.</u> Ovary | D. Outermost, green floral parts (Enclose bud during development) |
| 5. <u>I.</u> Petals | E. Long, thin structure that supports the anther |
| 6. <u>D.</u> Sepals | F. Innermost floral parts that produce female gametophytes |
| 7. <u>H.</u> Stamen | G. Sticky, top portion of the style |
| 8. <u>G.</u> Stigma | H. Male structure made up of an anther and a filament |
| 9. <u>A.</u> Style | I. Brightly colored parts just inside the sepals - (Attract pollinators) |

4. Label the parts of the flower on the illustration.



5. What are the separate male and female flowers on a corn plant?

Male Flower = Tassel Female Flower = Silk

Monococious Plants
"One House"
- produce carpel & staminate flowers

Dieocious Plants
"Two Houses"
- produce either carpel or staminate flowers

Eating an apple = eating an ovary

Mass Castration