

**Weed Science, PLS 4601c Section 7644
and Grad. – Prin. Of Weed Science AGR 6932 Section 9212
University of Florida - Davie**
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Material from May 14 for Quiz #2 on May 21

Below are the main things discussed on weeds, chemistry, and biology in the form of questions, some with answers.

Please read **sections 1, 2, 3, 9, 14, and 15** in “Weed Science – Learning Concepts”. If there is anything you don’t understand, call, write, or look it up.

Please review “Quiz 1 – Physical and Natural Sciences and Mathematics (Review)” especially **questions 1 through 14**. The answers are: 1 (a), 2 (c), 3 (d), 4 (162), 5 (a), 6 (a), 7 (b), 8 (b), 9 (a), 10 (b), 11 (c), 12 (d), 13 (b), 14 (e – really all of the above), 15 (b), 16 (b), 17 (d), 18 (a), 19 (a) 20 (b).

Weeds

1. What are two different definitions of a weed?

The definition in many textbooks is that weeds are unwanted plants. The definition that Phil Busey prefers is that weeds are plants that are adapted to disturbed habitats. Using the second definition, what biological characteristics are often present in weeds? What disturbances occur naturally?

2. How can weeds be both beneficial and detrimental?

Give examples.

3. How do weeds often grow in patches?

We looked at patches of weeds growing in front of the main building including green shrimp plant and matchweed. How might a site have different kinds of weeds dominating in different areas? (Remember where dollarweed grows.)

4. What families of flowering plants include weeds?

The families we saw were the grasses, sedges, coffee family, mustard family, and the cotton family. What were some of the characteristics of the flowers and leaves that we saw that may be diagnostic? What is a dicot vs. a monocot? (For example, ratio of leaf length and width, venations whether parallel or netted, opposite leaves with interpetiolar stipules.)

5. What makes the grass family important?

Grass in its various forms is important in the human diet. What can you say about the parts of the grass flower? (Chaff, etc. Grasses include many important weeds.)

6. What is monoecy? Dioecy? Perfect flowers?

We saw that *Tripsacum floridanum* has monoecious flowers, similar to corn (maize).

7. What other definitions are important?

Review all the definitions on page 6, section 14, of “Learning Concepts.”

8. What are some types of weed control?

Two common types of weed control are chemical control (using herbicides) and cultural control. We briefly mentioned biological control which is the use of natural enemies.

Chemistry

9. What do you know about elements, compounds, atoms, and molecules?

What elements are very common in biological chemicals and what are the names and abbreviations? (C, H, O, and N).

What number determines the atomic number, for example the atomic number for Hydrogen is 1, for Helium is 2, etc? (The atomic number is the number of protons in the nucleus).

What number determines the atomic weight? (The atomic weight is approximately the number of protons plus the number of neutrons.)

10. What determines the chemical characteristics of the elements and the compounds from which they are formed?

The number of electrons.

11. What determines the number of electrons?

The number of protons is generally the same as the number of electrons, otherwise one would have a charged particle which is unstable.

12. What else can you say about atoms and molecules?

An element is to an atom in the same way a compound is to _____.

Organic compounds (those containing carbon) have what kind of bonding
_____.

Molecular diagrams are drawn as stick-figures and in the case of organic molecules there is a backbone of what element which is generally not labeled because it is so commonly a part of organic molecules _____.

Biology

13. What are the common organelles in the cell and what is their function?

Know the mitochondrion, chloroplast, nucleus, and ribosome.

14. What are the four factors the drive evapotranspiration in plants?

Radiant energy, wind, dryness in the air, and absolute temperature.

15. Whereas a seed is a mature ovule, a fruit is a mature

_____.

16. What are the names for stalks to various things such as leaf, leaflet, flower, anther, and stigma?

Petiole, petiolule, pedicel, filament, style.

17. What is a seed?

A seed is often defined as a mature ovule. Another useful definition of a seed is what? (A unit of dispersal.)

18. What was the significance of the S-shaped growth curve?

Phil Busey drew this on the board? (1 - under good growing conditions where there is no competition, weeds and other plants often grow exponentially; 2 – exponential growth is very powerful; 3 - when a stand of plant begins to close together, internal competition restricts growth because it cannot exceed 100%; 4 - redivision of plants using stem cuttings can maintain exponential growth, because there is little crowding.)

19. Is sex good for plants? Is it necessary?

Sexual reproduction creates varying offspring whereas vegetative reproduction creates daughter plants, often from cuttings, that are genetically homogenous, that is, the same. Outcrossing through sexual reproduction is considered beneficial

genetically because it maintains a high degree of genetic variability necessary for adaptation to new environments.

Is this dogma true? (Not always because some of the worlds worse weeds such as cogon grass are essentially sterile clones that spread vegetatively and are genetically homogeneous.)

20. What is a halogenated hydrocarbon?

Many persistent pesticides such as DDT are halogenated hydrocarbons and they are often aromatic hydrocarbons based on the 6-carbon benzene ring which is very stable.