

Gymnosperm and Angiosperm Quiz Outline (Life Sciences 11)

SUMMARY:

1. What is alternation of generations? How does it apply to gymnosperms and angiosperms? [Note: it may be useful to review the first part of the Bryophyte and Tracheophyte powerpoint which covers alternation of generations generally. I will not ask about ploidy/mitosis/meiosis here, but you should still know the stages and the order they take place in.]
2. How do you differentiate monocots and dicots? (testable: number of leaves in seedling, venation in leaves, number of flower parts) (not testable: cross-sections of vascular tissue in leaves, stems, roots)
3. What are the characteristics that distinguish gymnosperms and angiosperms from their more distant relatives (e.g. ferns, mosses)?
4. What are the key characteristics of gymnosperms?
5. What is the life cycle of a gymnosperm?
6. What are the key characteristics of angiosperms?
7. What is the structure of a flower? What is the function of each part? If given a flower, identify all parts of the flower.
8. Describe briefly the unique pollination mechanisms in the 'bird of paradise' plant and *Salvia*.
9. Explain why the calla lily is not a flower.
10. Explain why a sunflower is not a flower.
11. Describe what pollination involves, and contrast it with fertilization. What are some different strategies that angiosperms use for pollination? What is the primary strategy that gymnosperms use for pollination?
12. What is a fruit? What are some methods that angiosperms use for seed dispersal?
13. What is the life cycle of an angiosperm?

STRUCTURE OF QUIZ:

This quiz will be worth approximately 25 marks in total.

The first part will be multiple choice.

The second part will be a lab component; you will be asked short-answer questions about various plant parts.

VOCABULARY:

(Disclaimer: This is not meant to be an exhaustive list. Vocabulary words may appear on the test that are not in this list.)

- Alternation of generations; generic life cycle words
 - o Gametophyte
 - o Sporophyte
 - o Sperm
 - o Egg
 - o Pollen
 - o Ovule
 - o Pollination
 - o Pollen tube
 - o Fertilization
 - o Zygote
 - o Embryo
 - o Seed
- Monoecious, Dioecious
- Gymnosperm (examples that could appear on test: pine tree, ginkgo tree)
- Cone
 - o Pollen cone
 - o Seed cone
- Hay fever
- Angiosperm
- Flower
 - o Fertile leaf
 - o Sterile leaf
 - o Whorl
 - o Sepal
 - o Petal
 - o Stamen, anther, filament
 - o Carpel, stigma, style, ovary
- Monocot, Dicot
- Bird of paradise flower
- *Salvia* flower
- Calla lily
- Asteraceae
 - o Sunflower
- Pollination:

- Wind pollination
- Water pollination
- Animal pollination (+ be able to recognize the examples given in slide)
- Fruit
- Seed dispersal
 - Split open when seeds are mature
 - Wind dispersal
 - Eaten (and transported) by animals
 - Prickly fruits that get stuck to animals
- Cross-pollination (see pollination reading)
- Self-pollination (see pollination reading)

VOCABULARY NOT TESTED

- Examples of monocots and dicots from the roots/stems/leaves powerpoint
- Examples of gymnosperms: cypress tree, cycads
- Bract
- Archegonia
- Antheridia
- Endosperm
- Seed coat
- Microsporangium, megasporangium
- Microspore, megaspore
- Megasporocyte
- Haploid, diploid
- Meiosis, mitosis
- Wing, generative cell, tube cell
- Receptacle, pistil, calyx, micropyle, polar nuclei, integument
- *Vallisneria* eelgrass
- Aggregate fruits
- Multiple fruits
- False fruits
- Berry

PRIMARY STUDY MATERIAL:

- Gymnosperms and Angiosperms Powerpoint
- Select slides in Roots, Stems, Leaves Powerpoint (the ones that show the seedlings and venation in monocots vs dicots)
- Monocot vs Dicot worksheet
- Flower Dissection Lab
- Pollination reading + questions + key