

## BIO 1C Lab exam 2: study guide

- Know life cycles and how to ID stages and whether that stage is  $2n$ ,  $n$ , and where meiosis occurs.
- Recognize the plants we worked with and place them into their correct phylum
- Nonvascular: recognize gametophytes, sporophytes, general structure, archegonia and antheridea, venter and egg. Where does meiosis take place? Marchantia: Gemmae cups and their function, tiny sporophytes.
- Ferns: recognize megaphylls, sporophylls, sori, indusia, spores, structure of the gametophyte (antheridea and archegonia)
- Conifers: male (staminate/microstrobili) cones, microsporophylls, microsporangia (pollen sacs), microspores (pollen grains) vrs. Female (ovulate) cones (megastrobili), megasporophylls, seeds, megasporangium, ovule
- Recognize the micropyle, megaspore mother cell, archegonia with egg.
- Know the anatomy of a pine seed
- Know the anatomy of a bean (eudicot) (hypocotyl, epicotyl, radicle, cotyledons)
- and corn (monocot) seed (scutellum (cotyledon), coleoptile, plumule, endosperm, radicle)
- Be able to ID the parts of a flower and tell whether it is perfect, imperfect, complete, incomplete, inflorescence, composite etc. monocot/eudicot
- Is it hypogynous or epigynous, inferior or superior?
- Know the parts of the stamen (microsporophyll) and carpel (megasporophyll)
- Know the structure and components of the mature male gametophyte, and the immature (pollen grain)
- Know the structure of the ovules: micropyle, integuments, megaspore mother cell, embryo sac (mature female gametophyte), antipodal cells, egg, synergids, polar bodies
- Capsella embryo and bean: ID the embryo, endosperm, cotyledons, radicle, hypocotyl, epicotyl, young leaves...
- ID the micropyle and cotyledons of a pea or bean
- ID early Eudicot seed/young embryo parts (eg. capsella): basal cell, suspensor, early cotyledons)
- ID drupe, pome and berry fruits, and be able to recognize the pericarp: exocarp, endocarp, mesocarp
- Be able to classify a fruit
- What is an accessory fruit? A multiple fruit? an aggregate fruit? A simple fruit?
- ID dehiscent and indehiscent fruits

- ID trichomes and know what they do
- Does garlic have antibiotic properties? Under what circumstances?
- Be able to look at a 'spice' or herb and ID the plant part it comes from
- ID meristematic tissue: primary and secondary in roots and stems (eg. apical meristems and bud meristems). What are the three types of meristematic tissue (leading to the three tissue systems): protoderm, procambium, ground meristem
- ID the zone of maturation, elongation and cell division in a root tip
- Early and late wood
- Lateral meristems (vascular cambium, cork cambium) and how they 'work'
- ID a root hair, a lateral root bud (know where it comes from – the pericycle!), and root types (fibrous, tap, etc.)
- Be able to age a tree or stem cross section
- ID xylem and phloem in leaves, stems and roots (eg. the stele) and differentiate monocot from eudicot
- ID modified stem types
- Modified root types
- ID parts of a twig, and how old it is (by the bud scale scars)
- ID plant tissue types and the cells (eg. parenchyma – spongy and palisade, collenchyma, sclerenchyma, xylem (vessel elements and tracheids, phloem (sieve tubes and companion cells)
- ID stomata, and explain placement in relation to a specific adaptation
- ID mesophytes, xerophytes, halophytes and hydrophytes and be able to pick out specific adaptations
- Be able to explain allelopathy, and ID some plants that may use it and why you think so