Figure 1 Hypothetical phylogenetic relationship of extant and fossil land plants and Charophytes. The left bar shows the timescale of evolution in millions of years. Names of extant groups are in black while extinct taxa/lineages are shown in gray. Adapted from Current Topics in Developmental Biology, 2019.

1) Alternation of generations

Refer to the document *Evolution of the plant body plan* for a description of the process of alternation of generations in plants. If your team has been assigned to two phylogenetic groups, provide two answers to each question.

- Make a drawing (do not paste a diagram from the Internet) of a life cycle that is representative of the plants belonging to your pre-assigned phylogenetic group(s). Your drawing must clearly display the two generations. Use arrows and labels to explicitly show and identify each life cycle stage and its ploidy. If a specimen has different organs including some haploid and some diploid, specify the ploidy of each core organ.

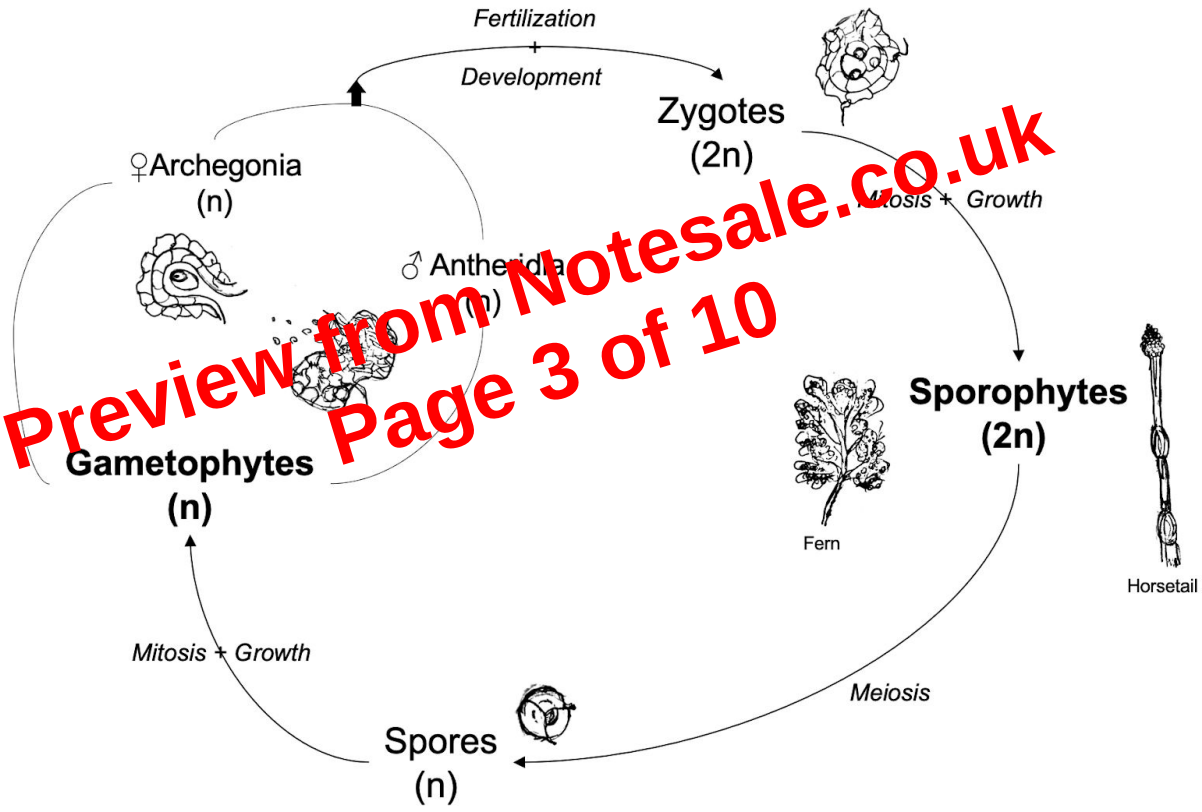

Figure 1. Life cycle of ferns and horsetails[1]

- Are the gametophyte and sporophyte unicellular or multicellular? Is there a generation that is dominant? If this is the case, describe the physiological dominance.
    - Both gametophyte and sporophyte are multicellular with the sporophyte being the dominant generation. Horsetails have their stem as the dominant organ. That is in fact where a lot of physiological regulations and photosynthesis occur. Meanwhile, ferns

[1] Lack, Andrew (Andrew J.), and D. E. Evans. Plant Biology . Oxford: BIOS, 2001. Print.