

Introduction to Botany. Lecture 28

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Outline

1 Questions and answers

2 Life cycles and diversity

- Systematics



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- 1 Questions and answers
- 2 Life cycles and diversity
 - Systematics



Previous final question: the answer

What is the difference between zygotic and gametic life cycles?



Previous final question: the answer

What is the difference between zygotic and gametic life cycles?

- No diplont *versus* no haplont
- Mostly protists *versus* mostly animals



Results of Exam 3: statistic summary

Summary:

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.	NA's
22.00	53.75	61.00	58.50	65.25	79.00	5

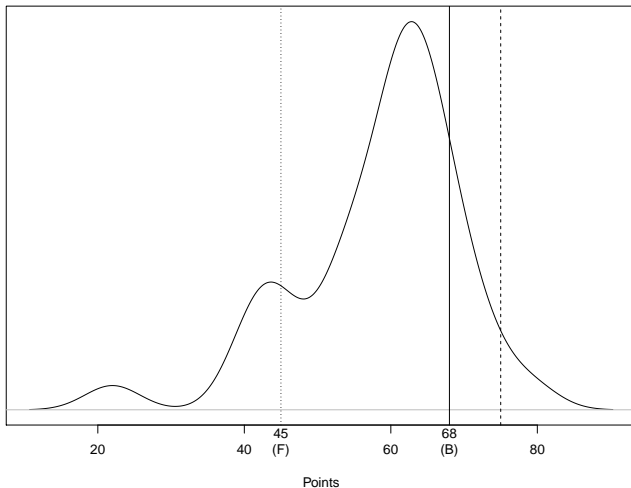
Grades:

F	D	C	B	max
45	52	60	68	75



Results of Exam 3: the curve

Density estimation for Exam 3 (Biol 154)



Results of Exam 3: some questions

- Plant growing in California deserts should have well-developed:
 - ① guard cells
 - ② **palisade cells**
 - ③ spongy cells
- Cells from which type of leaf mesophyll absorb a direct sunlight?
 - ① palisade
 - ② **spongy**
 - ③ vascular
- If meiosis takes place in an organism with a $2n$ number of 48, how many pairs of homologous chromosomes will be at the end of meiosis?
 - ① 48
 - ② 24
 - ③ **0**
 - ④ 12



Life cycles and diversity

Systematics



Basics of systematics

Terms covered:

- Systematics = taxonomy
- Species, taxonomic hierarchy
- Taxon, rank = category, classification
- Kingdom, phylum, class, order, family, genus, species
- Subclass, subfamily and other intermediate ranks
- Subspecies and cultivars



Biological nomenclature

Terms covered:

- Binomial name, species epithet, reference = citation
- Priority, starting dates, synonyms
- Shortcuts: “sp.”, “spp.”, “s. l.” (wide sense), “s. str.” (strict sense), “i. s.” (position unknown)



Examples

		Example 1	Example 2
Kingdom	Regnum	Vegetabilia	Animalia
Phylum	Phylum	<u>Spermatophyta</u>	Chordata
Class	Classis	Angiospermae (<u>Magnoliopsida</u>)	Mammalia
Order	Ordo	<u>Liliales</u>	Primates
Family	Familia	<u>Asparagaceae</u>	<u>Hominidae</u>
Genus	Genus	<i>Chlorophytum</i>	<i>Homo</i>
Species	Species	<i>Chlorophytum comosum</i> (Thunb.) Jacq. 1862	<i>Homo sapiens</i> L.

Species name

<u>Chlorophytum</u>	<u>comosum</u>	<u>(Thunb.)</u>	<u>Jacq.</u>	<u>1862</u>
<i>Genus name</i>	<i>Species epithet</i>	<i>First author</i>	<i>Second author</i>	<i>Year of description</i>



Final question (2 points)

Phylum, ..., order?



Summary

- Taxonomy studies the diversity of living things
- Seven main categories (ranks) are used to make the hierarchy in the classification



For Further Reading



J. E. Bidlack, Sh. H. Jansky.
Stern's introductory plant biology. 12th edition.
McGraw-Hill, 2011.
Chapter 16.



Th. L. Rost, M. G. Barbour, C. R. Stocking, T. M. Murphy.
Plant Biology. 2nd edition.
Thomson Brooks/Cole, 2006.
Chapter 18.

