

QUICK DRILL · CBSE CLASS 11

Plant Kingdom

Biology · Chapter 3 · 15 MCQs · 20 minutes · PYQ-tagged with time budgets

DATE	TOTAL MARKS	DURATION	MARKING	TARGET
	15	20 min	+1 / 0	≥ 12/15

OBJECTIVES

Reinforce the four core topics of Plant Kingdom via 15 PYQ-derived MCQs. Identify weak sub-topics via concept-node IDs (see answer key). Build per-question time budget habit.

INSTRUCTIONS

Attempt all 15. Time budget shown per Q (use it as pacing guide). Mark answers (A/B/C/D) in the margin. Answer key + explanations on the last page. **Don't peek — score yourself honestly.**

SECTION · QUICK DRILL

Q 1-15 · 20 MIN

Q1. The dominant pigment of Phaeophyceae (brown algae) is:

(A) r-phycoerythrin

(B) Fucoxanthin

(C) Chlorophyll b

(D) Floridean starch

PYQ 2019 · Delhi · 1m · 30s

Q2. The stored food in Rhodophyceae (red algae) is:

(A) Starch

(B) Mannitol

(C) Floridean starch

(D) Laminarin

PYQ 2022 · All India · 1m · 30s

Q3. Bryophytes are called 'amphibians of the plant kingdom' because they:

(A) Live only in water

(B) Live on land but need water for fertilisation

(C) Have both gills and lungs

(D) Are partly animal

PYQ 2024 · Delhi · 1m · 30s

Q4. In bryophytes, the dominant photosynthetic plant body is the:

(A) Sporophyte

(B) Gametophyte

(C) Zygote

(D) Prothallus

PYQ 2019 · All India · 1m · 30s

Q5. Which group is the FIRST to possess true vascular tissue?

(A) Algae

(B) Bryophytes

(C) Pteridophytes

(D) Gymnosperms

PYQ 2020 · Delhi · 1m · 30s

Q6. The heart-shaped free-living gametophyte of a fern is called the:

(A) Protonema

(B) Prothallus

(C) Sorus

(D) Sporangium

PYQ 2021 · Delhi · 1m · 35s

Q7. 'Naked seed' in gymnosperms means the seed is:

(A) Without a seed coat

(B) Not enclosed within an ovary or fruit

(C) Without an embryo

(D) Without stored food

PYQ 2023 · Delhi · 1m · 35s

Q8. Double fertilisation is a characteristic feature of:

(A) Bryophytes

(B) Pteridophytes

(C) Gymnosperms

(D) Angiosperms

PYQ 2023 · All India · 1m · 30s

Q9. Which of the following is a monocotyledonous feature?

(A) Two cotyledons

(B) Reticulate venation

(C) Parallel venation and fibrous roots

(D) Tap root with pentamerous flowers

PYQ 2022 · Delhi · 1m · 35s

Q10. Agar, used in microbiology culture media, is obtained from:

(A) Green algae

(B) Brown algae

(C) Red algae (Gelidium, Gracilaria)

(D) Cyanobacteria

PYQ 2020 · All India · 1m · 35s

Q11. In a haplontic life cycle (e.g. Spirogyra), the only diploid stage is the:

- (A) Gametophyte (B) Spore
(C) Zygote (D) Sporophyte frond

PYQ 2021 · All India · 1m · 40s

Q12. Which life-cycle pattern is shown by bryophytes and pteridophytes?

- (A) Haplontic (B) Diplontic
(C) Haplo-diplontic (D) No alternation

PYQ 2023 · Delhi · 1m · 40s

Q13. Coralloid roots associated with nitrogen-fixing cyanobacteria are found in:

- (A) Pinus (B) Cycas
(C) Funaria (D) Pteris

PYQ 2024 · All India · 1m · 40s

Q14. The cell wall of brown algae contains cellulose plus:

- (A) Chitin (B) Algin
(C) Lignin (D) Pectin only

PYQ 2019 · Delhi · 1m · 35s

Q15. Which of these is a 'living fossil' gymnosperm with no surviving close relatives?

- (A) Cycas (B) Pinus
(C) Ginkgo (D) Cedrus

PYQ 2022 · Delhi · 1m · 35s

ANSWER KEY & EXPLANATIONS

Q 1-15 · MARK YOUR SCORE

Q1. Answer: B

Fucoxanthin is the brown accessory carotenoid that masks chlorophyll in Phaeophyceae, giving brown algae their colour. Phycoerythrin is the red pigment of Rhodophyceae.

Q2. Answer: C

Red algae store food as floridean starch, a glucan close to glycogen. Green algae store starch; brown algae store mannitol and laminarin.

Q3. Answer: B

Bryophytes inhabit land but require a film of water for sexual reproduction, because the flagellated antherozoid must swim to the egg — hence 'amphibians'.

Q4. Answer: B

In bryophytes the gametophyte (n) is dominant and free-living; the sporophyte (2n) is small and nutritionally dependent on the gametophyte.

Q5. Answer: C

Pteridophytes (ferns, Selaginella) are the first plants with xylem and phloem and a true root-stem-leaf body, though they remain seedless.

Q6. Answer: B

The fern spore germinates into a small, heart-shaped, free-living haploid gametophyte called the prothallus, which bears antheridia and archegonia.

Q7. Answer: B

Gymnosperm ovules and seeds are not enclosed in an ovary, so no fruit forms and the seeds lie exposed on cone scales. The seed still has a coat.

Q8. Answer: D

Only angiosperms show double fertilisation — one male gamete fuses with the egg (→ zygote) and the second with two polar nuclei (→ triploid endosperm). Gymnosperms show single fertilisation.

Q9. Answer: C

Monocots have one cotyledon, parallel venation, fibrous roots and trimerous flowers. Reticulate venation and taproots are dicot features.

Q10. Answer: C

Agar is extracted from red algae (Rhodophyceae) such as Gelidium and Gracilaria, and is widely used in jellies and as a solidifying agent in laboratory media.

Q11. Answer: C

In haplontic plants the gametophyte is dominant and the zygote is the only diploid stage; it undergoes meiosis immediately to restore the haploid condition.

Q12. Answer: C

Bryophytes and pteridophytes are haplo-diplontic — both gametophyte and sporophyte are multicellular. In bryophytes the gametophyte dominates; in pteridophytes the sporophyte dominates.

Q13. Answer: B

Cycas has specialised coralloid roots that harbour symbiotic nitrogen-fixing cyanobacteria (e.g. *Anabaena*). Pinus roots commonly bear mycorrhizal fungi instead.

Q14. Answer: B

Phaeophyceae (brown algae) cell walls have cellulose plus algin (alginic acid). Red algae walls also have polysulphate esters; green algae have plain cellulose.

Q15. Answer: C

Ginkgo biloba is a 'living fossil' — the sole surviving species of an ancient gymnosperm lineage, retained almost unchanged for over 200 million years.