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KPK Class 11 Biology Conceptual Questions – Chapter 8

Diversity Among Plants

Q1: Define alternation of generation and give its importance.

Answer:

Alternation of generation I refers to the life cycle in plants where there are two distinct phases: a haploid gametophyte phase and a diploid sporophyte phase. Each generation gives rise to the other.

Importance:

- It allows genetic variation, crucial for evolution 2.

- Facilitates adaptation to different environments 2.

Q2: What is the role of heterospory in the evolution of seeds?

Answer:

Heterospory \mathbb{Z} is the production of two different types of spores: microspores (male) and megaspores (female). This differentiation is a key step in the evolution of seeds \mathbb{Z} . It leads to the development of the ovule, which is fertilized to form a seed, providing better protection and nourishment to the developing embryo \mathbb{Z} .

Q3: Differentiate between an antheridium and an archegonium.

Answer:

- Antheridium (2): Male reproductive structure producing sperm cells 2.
- Archegonium (2): Female reproductive structure producing egg cells 2.

Q4: Give two differences between bryophytes and pteridophytes.

Answer:

- 1. Bryophytes: Non-vascular plants 2; they lack true roots, stems, and leaves. Pteridophytes: Vascular plants 2 with true roots, stems, and leaves.
- 2. Bryophytes: Dominant phase is gametophyte **2**.

Pteridophytes: Dominant phase is sporophyte 2.

Q5: Write three examples of Subphylum Psilopsida.

Answer:

- 1. Psilotum nudum?
- 2. Tmesipteris
- 3. Psilotum flaccidum?

Q6: Write four differences between angiosperms and gymnosperms.

Answer:

1. Angiosperms: Seeds enclosed in fruits 2.

Gymnosperms: Seeds exposed or in cones 2.

2. Angiosperms: Flowering plants 2.

Gymnosperms: Non-flowering plants 2.

3. Angiosperms: Broad leaves 2.

Gymnosperms: Needle-like or scale-like leaves 2.

4. Angiosperms: Double fertilization occurs 2.

Gymnosperms: Single fertilization occurs 2.

Q7: What is the difference between microphyllous leaf and megaphyllous leaf?

Answer:

- Microphyllous Leaf 2: Small-sized leaves with a single vein, found in early vascular plants like lycophytes.

- Megaphyllous Leaf D: Larger leaves with a complex network of veins, found in ferns and seed plants.



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