NCERT Exemplar Solutions of Class 11 Biology – Chapter: 3 – Plant Kingdom

Multiple Type Question

1. Cyanobacteria are classified under

a. Protista

b. Plantae

c. Monera

d. Algae

Solution:

Option (c) is the answer.

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2. The fusion of two motile gametes which are dissimilar in size is termed as

a. Oogamy

b. Isogamy

c. Anisogamy

d. Zoogamy

Solution:

Option (c) is the answer.

Explanation: Anisogamy refers to the fusion of two motile gametes that differ in size. In contrast, isogamy involves fusion of similar-sized gametes, and oogamy involves fusion of a large non-motile egg with a small motile sperm.

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3. Holdfast, stipe and frond constitute the plant body in case of

a. Rhodophyceae

b. Chlorophyceae

c. Phaeophyceae

d. All of the above

Solution:

Option (c) is the answer.

Explanation: Phaeophyceae (brown algae) have a well-differentiated plant body consisting of holdfast (for attachment), stipe (stem-like structure), and frond (leaf-like structure).

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4. A plant shows thallus level of organization. It shows rhizoids and is haploid. It needs water to complete its life cycle because the male gametes are motile. Identify the group to which it belongs to

a. Pteridophytes

b. Gymnosperms

c. Monocots

d. Bryophytes

Solution:

Option (d) is the answer.

Explanation: Bryophytes show thallus level of organization, have rhizoids for anchorage, are predominantly haploid in their gametophytic phase, and require water for fertilization as their male gametes (antherozoids) are motile.

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5. A Prothallus is

a. A structure in pteridophytes formed before the thallus develops

b. A sporophytic free-living structure formed in pteridophytes

c. A gametophyte free-living structure formed in pteridophytes

d. A primitive structure formed after fertilization in pteridophytes

Solution:

Option (c) is the answer.

Explanation: Prothallus is the free-living, independent gametophytic phase in pteridophytes. It bears the sex organs (antheridia and archegonia) and is formed from spores through mitotic divisions.

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6. Plants of this group are diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. The group in reference is

a. Monocots

b. Dicots

c. Pteridophytes

d. Gymnosperms

Solution:

Option (d) is the answer.

Explanation: Gymnosperms are diploid plants well-adapted to extreme conditions. They produce sporophylls organized in compact structures called cones (strobili), which bear naked seeds.

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7. The embryo sac of an Angiosperm is made up of

a. 8 cells

b. 7 cells and 8 nuclei

c. 8 nuclei

d. 7 cells and 7 nuclei

Solution:

Option (b) is the answer.

Explanation: The mature embryo sac (female gametophyte) in angiosperms typically consists of 7 cells and 8 nuclei: 3 antipodal cells, 2 synergids, 1 egg cell, and 1 central cell with 2 polar nuclei.

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8. If the diploid number of a flowering plant is 36. What would be the chromosome number in its endosperm?

a. 36
b. 18
c. 54
d. 72

Solution:

Option (c) is the answer.

Explanation: Endosperm is formed by triple fusion involving one male gamete (n=18) and two polar nuclei (n=18 each). Therefore, endosperm is triploid (3n = 3×18 = 54).

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9. Protonema is

a. Haploid and is found in mosses
b. Diploid and is found in liverworts
c. Diploid and is found in pteridophytes
d. Haploid and is found in pteridophytes

Solution:

Option (a) is the answer.

Explanation: Protonema is the juvenile stage of the gametophyte in mosses. It is haploid and develops from spores, eventually giving rise to the mature gametophore.

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10. The giant Redwood tree (Sequoia sempervirens) is a/an

a. Angiosperm
b. Free fern
c. Pteridophyte
d. Gymnosperm

Solution:

Option (d) is the answer.

Explanation: Sequoia sempervirens (Coast Redwood) belongs to gymnosperms, specifically to the family Cupressaceae. It produces cones and has needle-like leaves.