Plant Kingdom

Assertion Reason Questions

Given below are two statements labelled as Assertion (A) and Reason (R). Select the most appropriate answer from the options given below:
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true and R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

1. Assertion (A): Sphagnum moss is hygroscopic and has the ability to store a lot of moisture.
Reason (R): Sphagnum moss is involved in fuel generation.

Ans. (b) Both A and R are true and R is not the correct explanation of A.
Explanation: Sphagnum moss is hygroscopic and has the ability to store a lot of moisture, and is also involved in fuel generation.

2. Assertion (A): Laminaria and Macrocystis are used in some countries as food, food supplements or fodder.
Reason (R): Both of these come under the group of brown algae.

Ans. (b) Both A and R are true and R is not the correct explanation of A.
Explanation: Both the Laminaria and Macrocystis are brown algae. These are used as food and also used in the form of fodder for cattle.

3. Assertion (A): sometimes Phaeophyceae produce pyriform structures.
Reason (R): Union of the pyriform structures leads to in sexual reproduction Phaeophyceae.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Pyriform are "pear-shaped" structures with two laterally attached flagella which are used as gametes by Phaeophyceae/ brown algae for the purpose of sexual reproduction.

4. Dried algin is likely unsafe when inserted into the cervix to induce labour, as it has been linked with serious adverse effects. Not enough is known about the use of algin

during pregnancy when taken by mouth or when used in any form during breast-feeding. Stay on the safe side and avoid use.

Assertion (A): Algin is obtained from red seaweed and carrageenan is extracted from the brown seaweed.

Reason (R): Algin is used to make medicine while carrageenan is used in preparation of emulsions.

Ans. (d) A is false but R is true.

Explanation: Algin and carrageenan are economically important products of algae. Algin is a type of carbohydrate obtained from brown seaweed and is used to make medicine for the treatment of high blood pressure and high cholesterol levels. Carrageenan is an extract from red seaweed and it is used in the preparation of emulsions of ice cream, jellies, sauces, etc.

5. Cycas Revoluta or the Sago Palm is a beautiful easy care houseplant with a mischievous twist that easily fools people in three ways. Firstly, despite its common name of "Sago Palm", it's not actually a palm because it's a Cycad (although the care requirements are similar).

Assertion (A): Cycas have small specialised roots called coralloid roots.
Reason (R): They are associated with nitrogen-fixing cyanobacteria.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Cycas possess small specialised roots called coralloid roots which are associated with N_2- fixing cyanobacteria that fixes atmospheric nitrogen into the soil.

6. Assertion (A): Gymnosperms have the ability to show polyembryony.
Reason (R): They have two or more archegonia.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Gymnosperms have the ability to show polyembryony as they have two or more archegonia.

7. Assertion (A): Gymnosperms are also known as flowering plants.
Reason (R): They produce naked seeds.

Ans. (d) A is false but R is true.
Explanation: Gymnosperms bear naked seeds, and lack the formation of fruits and flowers. Angiosperms are known as the flowering plants.

8. Assertion (A): Gymnosperms are hetero- sporous.
Reason (R): They produce hap- loid microspores and megaspores.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Gymnosperms produce two kinds of spores, i.e. haploid microspores and megaspores and therefore known as heterosporous.