

# Plant Kingdom

- Assertion (A):** Cyanobacteria that are also referred as blue green algae, now not involved in 'algae', a group of kingdom Plantae.

**Reason (R):** Plantae is the group of Eukaryotic multi-cellular organisms, while cyanobacteria are prokaryotes.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Natural classifications are more accurate than artificial classifications

**Reason (R):** They are based on natural affinities among organisms and consider only external feature not internal features.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** In numerical taxonomy each character is given equal importance.

**Reason (R):** It is quantitative arrangement based on computational and statistical analysis of number and codes of the characters.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Sexual reproduction of Spirogyra is isogamous type.

**Reason (R):** Both of the fusing gametes of Spirogyra are non-flagellated and similar in size.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Algae are of paramount importance in aquatic ecosystem.

**Reason (R):** Their photosynthetic ability is the basis of food cycle for all aquatic animals.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Algae can bridge the gap between demand and supply of proteinaceous diet, worldwide.

**Reason (R):** Chlorella and Spirulina are unicellular proteinaceous food supplement.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Algae are divided into three main classes, based on only cell wall composition.

**Reason (R):** Among members of algae composition of cell wall is extremely variable.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false
- Assertion (A):** Members of phaeophyceae or brown algae group show variation of color from olive green to various shades of brown color.

**Reason (R):** In phaeophycean member amount of xanthophyll and fucoxanthin is variable.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)  
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are false



9. **Assertion (A):** Water is essential for completion of life cycle of bryophytes.

**Reason (R):** Water helps in activation of enzymes to favour metabolism of cells.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

10. **Assertion (A):** Bryophytes are of great ecological importance.

**Reason (R):** Bryophytes help in colonization (succession) on bare rocks/soil.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

11. **Assertion (A):** Bryophytes play great role in providing ecological services.

**Reason (R):** Bryophytes help in making of soil and prevention of soil erosion as well.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

12. **Assertion (A):** Mosses are more advanced group of Bryophytes.

**Reason (R):** Gametophyte of mosses have rhizoids stem like and leaf like structure.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

13. **Assertion (A):** Pteridophytes are successful land plants.

**Reason (R):** Pteridophytes possess vascular tissue and roots.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

14. **Assertion (A):** Gametophyte of homosporous pteridophyte does not depend on sporophyte body.

**Reason (R):** In homosporous pteridophytes there is *ex situ* or exosporic spore germination.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

15. **Assertion (A):** Seed habit was originated in pteridophytes, which became an important step in evolution.

**Reason (R):** Heterospory was first time developed in pteridophytes.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

16. **Assertion (A):** In gymnosperms seeds are naked.

**Reason (R):** In gymnosperms embryo is not covered with their protective coverings

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false



17. **Assertion (A):** In gymnosperms the seeds that develop post fertilization are naked.

**Reason (R):** In gymnosperms ovules are not enclosed by any ovary wall.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

18. **Assertion (A):** Gymnosperms are first completely successful land plants.

**Reason (R):** In gymnosperms secondary growth is present.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

19. **Assertion (A):** Male gametophytic generation of gymnosperms is highly reduced.

**Reason (R):** In gymnosperms male gametophyte is to be travelled up to female gametophyte.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

20. **Assertion (A):** Unlike gymnosperms, in angiosperms seeds are not naked.

**Reason (R):** In angiosperms ovules are developed in specialized structures called flower.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

21. **Assertion (A):** Embryo sac of Angiosperms represents female gametophytic generation.

**Reason (R):** Embryo sac arise from megaspore and spore is the first cell of gametophytic generation.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

22. **Assertion (A):** Plants have ability for the formation of different plant bodies- haploid and diploid.

**Reason (R):** In plants both haploid and diploid cells can divide by mitosis.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

23. **Assertion (A):** Generally thallophytes show haplontic life cycle.

**Reason (R):** In thallophytes generally one phase that is haploid dominate.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

**24. Assertion (A):** All seed bearing plants follow diplontic life cycle.

**Reason (R):** In seed bearing plants both gametophytic and sporophytic generation dominate in form of well developed plant body.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**25. Assertion (A):** Unlike other algae, Fucus shows a diplontic life cycle.

**Reason (R):** In Fucus gametophytic generation is reduced and short living.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**26. Assertion (A):** Bryophyta are termed as amphibians of plant kingdom

**Reason (R):** Bryophyta are first land plants but depend on water for fertilization.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**27. Assertion (A):** Sporophyte of pteridophytes may be monoecious or dioecious

**Reason (R):** Sporophyte of pteridophytes bear sex organ.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**28. Assertion (A):** Flowering Plants have independent sporophytic generation which represents the main plant body.

**Reason (R):** Flowering plants perform meiosis during microspore and megaspore spore formation which gives rise to male and female gametophytes respectively.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**29. Assertion (A):** In Angiosperm, archegonia is present in embryosac.

**Reason (R):** One male gamete fertilize egg of embryosac & another fertilize antipodal nucleus.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**30. Assertion (A):** Conservative characters are more useful in classification.

**Reason (R):** These characters do not change rapidly during evolution. therefore, their similarities show relationships among organisms.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**31. Assertion (A):** Bryophytes are called amphibians of the plant kingdom.

**Reason (R):** Bryophytes play an important role in plant succession on bare rocks.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**32. Assertion (A):** Diatoms have left behind large amount of cell wall deposits in their habitat.

**Reason (R):** Diatoms are the chief 'producers' in the oceans.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**33. Assertion (A):** Mosses reduce the impact of falling rain and prevent soil erosion.

**Reason (R):** Mosses form dense mats on the soil.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**34. Assertion (A):** Peat moss is used as packing material for trans-shipment of living material.

**Reason (R):** Peat moss has a good capacity to hold water.

- (1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
- (2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
- (3) (A) is true but (R) is false
- (4) Both (A) and (R) are false

**Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as:

- (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- (c) If Assertion is true but Reason is false.
- (d) If both Assertion and Reason are false.

35. **Assertion :** Members of phaeophyceae vary in colour from olive green to various shades of brown

**Reason:** Phaeophyceae possess chlorophyll a, c, carotenoids and xanthophylls.

36. **Assertion:** Chlorella and Spirulina are used as a food supplement by space travellers.

**Reason:** These are unicellular alg

37. **Assertion:** Red algae contributes in producing coral reef.

**Reason:** Some red algae secrete and deposit calcium carbonate on their walls.

38. **Assertion:** The sex organs in bryophytes are jacketed.

**Reason:** Bryophytes are land plants.

39. **Assertion:** Bryophytes are known as the amphibians of plant kingdom.

**Reason:** They are found in swamps and the areas where land and water meet.

40. **Assertion:** Zygote produces a multicellular sporophyte in pteridophytes.

**Reason:** The dominant phase in life cycle of pteridophytes is sporophyte.

41. **Assertion:** Selaginella and Salvinia are homosporous.

**Reason:** In Selaginella and Salvinia, similar kind of spores are produced.

42. **Assertion :** Conifer trees produce a large quantity of wind borne pollen grains.

**Reason :** The pollen grains have wings.

43. **Assertion:** Gymnosperms do not produce fruit.

**Reason:** Ovules of gymnosperms are enclosed within the ovaries.

44. **Assertion:** Ovules form seeds upon fertilization.

**Reason:** Ripened ovary forms fruit.

45. **Assertion:** Only red algae are able to flourish at the great depths of sea.

**Reason:** Red algae has the pigments rphycoerythrin and r-phycoyanin.

46. **Assertion:** Mosses are of great ecological importance.

**Reason:** They prevent soil erosion by forming dense mat on the soil.

47. **Assertion :** Mosses are evolved from algae.

**Reason :** Protonema of mosses is similar to some green algae.

48. **Assertion:** In Funaria, gemmae formation occurs in unfavourable condition.

**Reason:** The gemmae form on the stem and leaves.

49. **Assertion:** Bryophyte has an independent embryo.

**Reason:** The zygote of thallophyte is dependent.

50. **Assertion:** Liverworts fail to spread to a new locality through fragmentation.

**Reason:** Gemmae are helpful in propagating liverworts in different locality.

51. **Assertion:** The female cones are same in number as the male cones.

**Reason:** Male and female cones appear alternately on the same branch of the Pinus.



### ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	1	3	1	1	1	1	4	1	2	1	1	1	1	1	2	3	1	2	1	1
Que.	21	22	23	24	25	26	27	28	29	30	31	32	33	34						
Ans.	1	1	1	3	1	1	4	2	4	1	2	2	1	1						

35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.
a	b	a	a	b	b	d	a	c	b	a	b	a	b	d	b	d