

Reproduction in Organisms and Sexual Reproduction in Flowering Plants

- Assertion (A):** In western countries a large number of pollen products in form of tablets and syrups are available.

Reason (R): Pollen grains are rich in nutrients and used as 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):** During embryo sac formation megaspore divides by incomplete mitotic division.

Reason (R): In these mitotic divisions karyokinesis is not immediately followed by cytokinesis.

(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):** Geitonogamy is functionally cross pollination and genetically self pollination.

Reason (R): It involves pollinating agent but pollen grains come from same plant.

(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):** All aquatic plants use water for pollination.

Reason (R): In aquatic habitat, water is the only medium for transfer of gametes.

(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):** Self incompatibility is one of the device to prevent inbreeding.

Reason (R): This is physiological process which prevents cross pollination.

(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):** Dynamic process pollen pistil interaction can help to overcome incompatibility barriers.

Reason (R): Knowledge gained in this area would help the plant breeders in manipulating pollen-pistil interaction.

(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):** Most zygotes divide only after certain amount of endosperm is formed.

Reason (R): This is an adaptation to provide assured nutrition to the developing embryo.

(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



8. **Assertion (A):** Strawberry and cashew are false fruits.

Reason (R): They arise before 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

9. **Assertion (A):** Seed is the basis of agriculture.

Reason (R): Due to dehydration and dormancy mature seed can be stored for next season.

- (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):** Active research is going on in many laboratories around the world to understand the genetics of apomixis.

Reason (R): If hybrids are made into apomictics, there is no segregation of 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

11. **Assertion (A):** Clone is formed by amphimixis.

Reason (R): In amphimixis, new plants are formed without fertilization and meiosis.

- (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):** Pollen tube shows apical growth.

Reason (R): Growth of pollen tube is controlled by generative 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

13. **Assertion (A):** In Angiosperms, sexual reproduction take place through the flower.

Reason (R): All the parts of the flower are modification of stem.

- (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):** With increase in population size, environmental resistance tends to increase.

Reason (R): This is a **nature's** way to check the expression of biotic potential.

- (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):** Nucellus plays important role for developing embryo sac.

Reason (R): Nucellus is nutritive tissue have abundant reserve food material.

- (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):** Pollen pistil interaction is a safety measure to ensure that illegitimate crossing do not occur.

Reason (R): Compatibility and incompatibility of pollen pistil is determined by special proteins.

- (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.

17. **Assertion :** Autogamy is a transfer of pollen grains from an anther to the stigma of the same flower on the same plant.

Reason : Xenogamy is pollination between two flowers on different plants.

18. **Assertion:** Insects visit flower to gather honey.

Reason : Attraction of flowers prevents the insects from damaging other parts of the plant.

19. **Assertion:** Pollen mother cells (PMCs) are the first male gametophytic cells.

Reason: Each PMC gives rise to two pollens.

20. **Assertion:** Exine of a pollen grain is made up of sporopollenins which are resistant to high temperatures, strong acids or alkali as well as enzymatic degradation.

Reason: Sporopollenins are absent in the region of germ pores.

21. **Assertion:** Although geitonogamy is functionally cross-pollination involving a pollinating agent, genetically it is similar to autogamy since the pollen grains come from the same parent.

Reason: In geitonogamy, pollen grains from the anthers of one flower are transferred to the stigma of another flower borne on the same plant.

22. **Assertion:** If pollen mother cells has 42 chromosomes, the pollen has only 21 chromosomes.

Reason: Pollens are formed after meiosis in pollen mother cell.

23. **Assertion:** Double fertilization is characteristic feature of angiosperms.

Reason : Double fertilization involves two fusions.

24. **Assertion:** The largest cell of the embryo sac is central cell.

Reason : It consists of a fused nuclei.

25. **Assertion :** Endosperm is a nutritive tissue and it is triploid.

Reason : Endosperm is formed by fusion of secondary nucleus to second male gamete. It is used by developing embryo.

26. **Assertion:** Megaspore mother cell undergoes meiotic division.

Reason: All four megaspores form female gametophyte.

27. **Assertion:** Non-albuminous seeds have no residual endosperm.

Reason: The endosperm is completely consumed during embryo development.

28. **Assertion:** Mango is a true fruit.

Reason: The thalamus also contributes to formation of fruit in false fruits.

29. **Assertion:** Pollen grains from male parent are mostly transferred to the stigma in the female parent by some external agency.

Reason: This is because the male flowers or male organs have no internal device to reach the female in another flower.

30. **Assertion:** The pollen sterility has been attributed to the malfunctioning of tapetum.

Reason: Premature degeneration of the tapetum deprives the developing spores of its nutrition.



ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ans.	1	1	1	4	3	1	1	3	1	1	4	3	3	1	1	1

17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.			
C	D	D	B	A	A	B	B	A	C	A	B	A	a			