



# CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-XII

Subject: Biology

Chapter Name : *Sexual Reproduction in Flowering Plants* (Chap : 1)

Total : 9 Marks (expected) [MCQ(2)-2 Marks, AR(1)-1 Mark, SA(1)-2 Marks, CBQ(1)-4 Marks]

**Level - 2** [Higher Order]

## MCQ Type :

1. A dicotyledonous plant bears flowers but never produces fruits and seeds. The most probable cause for this is :  
(A) plant is dioecious and bears only pistillate flowers  
(B) plant is dioecious and bears both pistillate & staminate flowers  
(C) plant is monoecious  
(D) plants is dioecious and bears only staminate flowers.

## Hint : flower types

2. During microsporogenesis, meiosis occurs in  
(A) endothecium (B) microspore mother cell (C) microspore tetrads (D) pollen grain

## Hint : microsporogenesis stages

3. From the statements given below, choose the option that is true for a typical female gametophyte of a flowering plant.  
(i) It is 8-nucleate and 7-celled at maturity.  
(ii) It is free nuclear during development  
(iii) It is situated inside the integument but outside the nucellus  
(iv) It has an egg apparatus situated at the chalazal end.  
(A) (i) and (iv) (B) (ii) and (iii) (C) (i) and (ii) (D) (ii) and (iv)

## Hint : Structure of embryo sac

4. Dioecy states  
(A) unisexuality of a flower (B) bisexuality of a flower  
(C) bisexuality of a plant (D) unisexuality of a plant
5. While planning for an artificial hybridization programme involving dioecious plants, which of the following steps would not be relevant ?  
(A) Bagging of female flower (B) Dusting of pollen on stigma  
(C) Emasculation (D) Collection of pollen

## Hint : Artificial hybridization.

6. In a flower, if the megaspore mother cell forms megaspores without undergoing meiosis and if one of the megaspores develops into an embryo sac, its nuclei would be  
(A) haploid (B) diploid  
(C) a few haploid and a few diploid (D) with varying ploidy

## Hint : Stages of megasporogenesis

7. Filiform apparatus performs the function of

- Ⓐ opening the pollen tube
- Ⓒ Guiding the pollen tube to egg

- Ⓑ entry of pollen tube into synergids
- Ⓓ prevents entry of more than one pollen tube

**Hint : Entry of pollen tube into embryo sac**

8. Autogamy can occur in chasmogamous flowers if

- Ⓐ pollens mature before maturity of ovules
- Ⓑ ovules mature before maturity of pollens
- Ⓒ both pollens and ovules mature simultaneously
- Ⓓ both anther and stigma are of equal length

**Hint : Characters favouring self pollination in open flowers.**

**Assertion and Reason :**

**Directions:** Read the following questions and choose any one of the following four responses.

- A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion.
- B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion.
- C: Assertion is correct but Reason is wrong.
- D: Assertion is wrong but Reason is correct.

9. **Assertion (A) :** The endosperm of angiosperms is generally triploid ( $3n$ )

**Reason (R) :** it develops from PEN, formed by fusion of haploid male gamete and diploid secondary nucleus.

- Ⓐ A
- Ⓑ B
- Ⓒ C
- Ⓓ D

**Hint : Development of endosperm, triple fusion.**

10. **Assertion (A) :** In coconut, water represents the free nuclear endosperm and the white kernel represents the cellular endosperm.

**Reason (R) :** PEN undergoes a number of free nuclear divisions, followed by wall formation.

- Ⓐ A
- Ⓑ B
- Ⓒ C
- Ⓓ D

**Hint : Formation of endosperm.**

11. **Assertion (A) :** In monosporic type of embryo development, megaspore is situated towards the micropylar end and remains functional.

**Reason (R) :** In monosporic development, the embryo sac develops from a single functional megaspore.

- Ⓐ A
- Ⓑ B
- Ⓒ C
- Ⓓ D

**Hint : Megasporogenesis.**

12. **Assertion (A) :** A given fig species is pollinated only by its partner wasp.

**Reason (R) :** The wasp pollinates the fig inflorescence while searching for suitable egg laying sites.

- Ⓐ A
- Ⓑ B
- Ⓒ C
- Ⓓ D

**Hint : Cleistogamy**

**Very Short Answer Type :**

13. What is an anatropous ovule?

**Hint : Types of ovule**

14. *Papaver* and *Michelia* both have multicarpellary ovaries. How do they differ from each other?

**Hint : Types of gynoecium**

15. How is it possible that in *Oxalis* and *Viola*, plants produce assured seed sets, even in the absence of pollinators?

**Hint : Cleistamous flowers.**

16. How many microspore mother cells would be required to produce 100 pollen grains in a pollen sac ? Why ?

**Hint : Microsporogenesis; meiosis**

17. Why do pea flowers produce assured seed sets?

**Hint : Cleistogamy**

18. An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Why ?

**Hint : Function of tapetum.**

**Short Answer Questions :**

19. Trace the development of a megaspore mother cell to the formation of mature embryo sac in a flowering plant.

**Hint : Stages of megasporogenesis.**

20. State the agents which helps in pollinating the following plants. Explain the adaptations in these plants to ensure pollination.

- (A) Corn                                      (B) Water hyacinth                      (C) *Vallisneria*

21. If the cells in the leaves of a maize plant contain 10 chromosomes each, write the number of chromosomes in its endosperm and zygote. Name and explain the process by which an endosperm and zygote are formed in maize.

**Hint : Double fertilization (in monocots)**

22. Draw a well labelled diagram of a sectional view of the male gametophyte/microspore of an angiosperm and write the functions of any two labelled parts.

**Hint : Structure of microspore ; microsporogenesis.**

23. a) Banana is a parthenocarpic fruit, whereas oranges show polyembryony. How are they different from each other with respect to seeds ?

b) Mention one advantage and one disadvantage of using apomictic seeds by farmers?

**Hint : Special mechanisms of reproduction.**

24. Explain why apple is a false fruit, mango is a true fruit and banana is a seedless fruit.

**Hint : Fruit types**

**Case Based Questions.**

25. Read the following passage and answer the given questions :

The pollen sac wall encloses a number of archesporial cells, that further forms microspore mother cells. In the beginning, microspore mother cells are polygonal and closely packed, but as the anther enlarges, the pollen sac becomes spacious and gets loosely arranged. A few microspore mother cells become non functional and are finally absorbed by the developing microspores.

- a) What is the name of the technique where plants are grown in liquid culture medium?  
b) What is the number of nuclei present in common embryo sac?  
c) What is perisperm? What is its function ?

OR

d) What is the role of archesporium in a flower?

**Hint : Microsporogenesis.**

26. Read the following passage and answers the given questions :

Primary sporogenous cells forms megaspore mother cell. The megaspore mother cell undergoes meiosis to form four haploid megaspores. This step is called megasporogenesis. Out of four megaspores in a linear tetrad, usually the upper three degenerate and the lowermost enlarges to become the functional megaspore. The functional megaspore forms the female gametophyte or embryo sac.

- (A) In an embryo sac, name the cells that degenerate after fertilization.  
(B) Name the haploid, diploid and triploid structures in an embryo sac.  
(C) Between castor and bean seeds, which one would you select to observe the endosperm and why?

OR

Ⓓ What are the ploidy of the following :

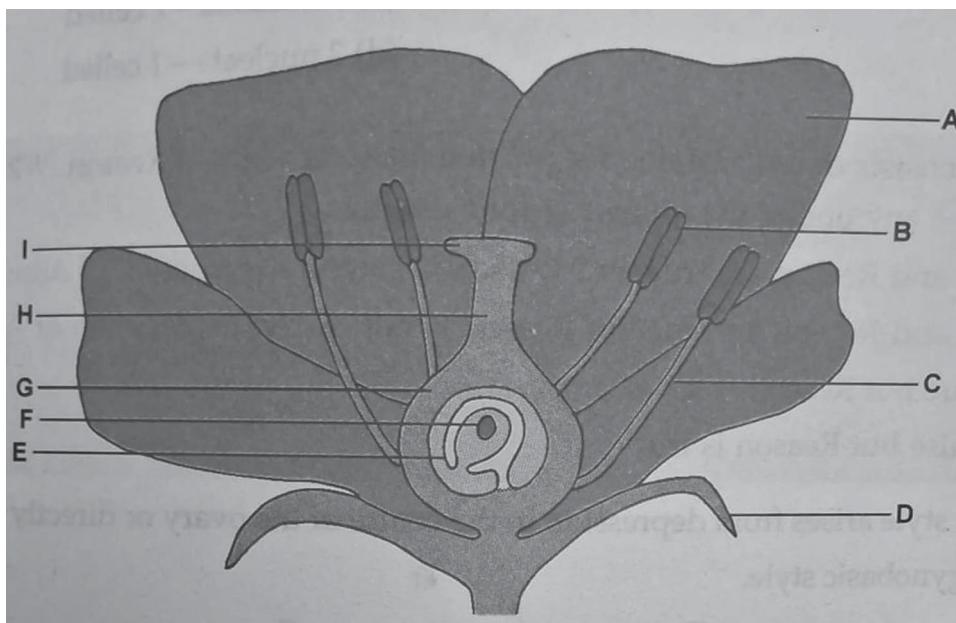
(i) Nucellus

(ii) Microspore mother cell

(iii) Functional megaspore

(iv) Female gametophyte

27. The diagram represents a flower. Label the parts and answer the following :



a) Give the letter of the structure which :

(i) becomes the fruit wall

(ii) becomes the testa

(iii) produces pollen grains.

b) Explain two ways by which this flower has adapted for self pollination.

c) Trace the development of the female gametophyte in a flowering plant.

28. Explain pollen pistil interaction with a neat sketch.

29. a) How does a farmer use the dormancy of seeds to his advantage ?

b) What advantages are provided by a seed to a plant ?

**Hint : Importance of storage of seeds.**

30. a) Is pollination and fertilization necessary in apomixis ? Give reasons.

b) Embryo sacs of some apomictic species appear normal but contain diploid cells. Suggest a suitable explanation for this condition.

**Hint : Meiosis at megaspore mother cell stage.**

## ANSWER

Biology\_(L-2)\_ 31.12.25 (Complete)

1. Ⓓ

2. Ⓑ

3. Ⓒ

4. Ⓓ

5. Ⓒ

6. Ⓑ

7. Ⓒ

8. Ⓒ

9. Ⓐ - Both A and R are true and R is the correct explanation of A

10. Ⓒ A is true, but R is false.

11. Ⓓ A is true, but R is false.

12. Ⓐ Both A and R are true and R is the correct explanation of A