



# 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 Mark, AR(1)-1, SA(1)-2, CBQ(1)-4 Marks]

Level - 1

## MCQ Type :

- Which of the following structures are haploid in nature?  
 A Nucellus and antipodals  
 B Microspore and antipodals  
 C Egg cell and antipodals  
 D Egg cell and central cell

## Hint : Structure of embryo sac

- From among the sets of terms given below, identify those that are associated with gynoecium  
 A Stigma, ovule, embryo sac, placenta  
 B Thalamus, pistil, style, ovule  
 C Ovule, ovary, embryo sac, tapetum  
 D Ovule, stamen, ovary, embryo sac

## Hint : Structure of gynoecium

- In a cereal grain, the single cotyledon in embryo is represented by:  
 A coleoptile  
 B coleorhiza  
 C scutellum  
 D hypocotyl

## Hint : Structure of monocot seed

- In angiosperms, male gametes are formed by the division of:  
 A microspore mother cell  
 B microspore  
 C generative cell  
 D vegetative cell

## Hint : Microsporogenesis

- Unisexuality of flowers prevent:  
 A geitonogamy  
 B autogamy  
 C xenogamy  
 D both A and C

## Hint : Types of Pollination

- The phenomenon observed in some plants, wherein parts of the sexual apparatus is used for forming embryos without fertilisation is called  
 A Parthenocarpy  
 B Apomixis  
 C Vegetative propagation  
 D Sexual reproduction

## Hint : Special mechanism of reproduction

### 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.

- Assertion (A):** Microspore is the first cell of the male gametophyte.

**Reason (R) :** It is diploid in nature.

A

B

C

D

### Hint : Structure of male gametophyte

8. **Assertion (A)**: A pollen grain can withstand harsh conditions.

**Reason (R)** : The exine of pollen grains is made up of sporopollenin.

Ⓐ A

Ⓑ B

Ⓒ C

Ⓓ D

### Hint : Structure of pollen grain

9. **Assertion (A)**: In plants, apomixis is a type of asexual reproduction that mimics sexual reproduction.

**Reason (R)** : In apomixis, seeds are produced without the fusion of gametes.

Ⓐ A

Ⓑ B

Ⓒ C

Ⓓ D

### Hint : Special mechanisms of reproduction.

10. **Assertion (A)**: Apple is a false fruit.

**Reason (R)** : Apple develops from the ovary.

Ⓐ A

Ⓑ B

Ⓒ C

Ⓓ D

### Hint : Fruit development

#### Very Short Answer Questions :

11. Draw a diagram of a mature microspore of an angiosperm and label its cellular components.

### Hint : Structure of microspore

12. State the function of filiform apparatus found in mature embryo sac of an angiosperm.

### Hint : Components of embryo sac

13. Why do pollen grains of some flowers trigger sneezing in some people ?

14. How do flowers of *Vallisneria* get pollinated ?

### Hint : Agents of pollination.

15. What is nucellus ?

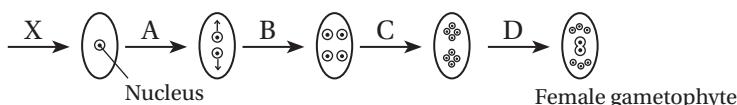
### Hint : Structure of ovule

16. Why do pea flowers produce assured seeds ?

### Hint : Cleistogamy

#### Short Answer Questions :

17. Fill in the following labels with the type of cell function.



### Hint : Development of embryo sac

18. State one advantage and one disadvantage of cleistogamy.

### Hint : Closed flowers.

19. What are the adaptive features a flower must possess to encourage entomophily.

### Hint : Insect pollination.

20. Seed is the final product of sexual reproduction. Why is seed development important ?

### Hint : Advantage of seeds.

21. List two steps that are essential for carrying out artificial hybridization in crop plants and why ?

### Hint : Selection of parents, emasculation, crossing over.

### Case Based Questions.

22. A flower of tomato plant, following the process of sexual reproduction, produce 240 viable seeds. On the basis of the given data, answer the following questions :

- What is the minimum number of pollen grains that must have been involved in the pollination of its pistil ?
- What would have been the minimum number of ovules present in the ovary ?
- How many megasporangium mother cells were involved ?
- What is the minimum number of microspore mother cells involved in the above case ?
- How many male gametes were involved in this case ?

**Hint : Fertilisation and gametogenesis.**

### 23. Read the given passage and answer the following questions :

Rani, during a lecture in her classroom, felt surprised as to how the pollen grains after reaching the stigma, enter inside the ovule and sooner or later, the seed and fruits start developing. She started discussing this with her friends and they correlated the things with the reproductive process that takes place in all organisms.

- The first step in pollen – pistil interaction is –
  - Recognition of anther
  - Recognition of pollen grain
  - Growth of pollen tube
  - Entry of pollen tube into ovule
- What happens to the plants that shed pollen in the 3-celled condition ?
- Explain the role of tapetum in the formation of pollen grain wall

OR

- How are pollen banks useful ?

**Hint : Structure of microspore, pollen-pistil interaction, pollen bank.**

24. Double fertilization in angiosperms triggers the transformation of the ovule into a structure, known as seed. The seeds are inside the fruits. A typical seed consists of a double layered structure, that is formed by the integuments, Based on the above passage, answer the following questions :

- What are albuminous seeds ?
- What is the function of micropyle ?
- Some fruits do not have seeds. How are such fruits formed ?

OR

- List any four post-fertilization events in angiosperms.

**Hint : Seed formation, apomixis.**

### Long Answer Type Questions :

25. (a) Draw a diagram of an enlarged view of TS of one microsporangium of an angiosperms and label the following parts :

i) Tapetum	ii) Middle layer
iii) Endothecium	iv) Microspore Mother Cell

(b) Mention the characteristic features of tapetum

(c) Explain the following giving reasons :  
i) Pollen grains are well preserved as fossils.                   ii) Pollen tablets are used by athletes.

**Hint : microsporangium, microsporogenesis.**

26. With a neat labelled diagram, describe the parts of a typical angiosperm ovule.

27. Explain the structure of a monocot seed with a neat labelled diagram.

28. a) Explain the characteristic features of wind-pollinated flowers.  
b) Make a list of any three outbreeding devices that flowering plants have developed and explain how they help to encourage cross pollination.

**Hint : Outbreeding devices**

29. a) Describe the endosperm development in coconut.  
b) Why is tender coconut considered a healthy source of nutrition ?  
c) How are pea seeds different from castor seeds, with respect to endosperm ?

30. a) With the help of a labelled diagram, show the different stages of embryo development in a dicot plant.  
b) Endosperm development precedes embryo development. Justify.

**ANSWER**

1. (C)  
2. (A)  
3. (C)  
4. (A)  
5. (B)  
6. (B)  
7. (C) A is true, but R is false  
8. (A) Both A and R are true and R is the correct explanation of A

9. (A) Both A and R are true and R is the correct explanation of A  
10. (A) A is true, but R is false.  
22. (A) 240 pollen grains.  
(B) 240 ovules  
(C) 240 MMC  
(D) 720 male gametes  
(E) 90 MMC