

Sexual reproduction in flowering plant

1. What is the name for the male reproductive part of a flower?

- A. Gynoecium
- B. Androecium
- C. Pistil
- D. Ovary

Correct Answer: B. Androecium

2. What is the name for the female reproductive part of a flower?

- A. Androecium
- B. Stamen
- C. Gynoecium
- D. Pollen grain

Correct Answer: C. Gynoecium

3. A pollen mother cell has $2n$ chromosomes. After microsporogenesis, how many chromosomes will each microspore have?

- A. $2n$
- B. n
- C. $3n$
- D. $4n$

Correct Answer: B. n

4. What is the process of forming microspores from a pollen mother cell called?

- A. Megasporogenesis
- B. Microsporogenesis
- C. Pollination
- D. Fertilization

Correct Answer: B. Microsporogenesis

5. What is the name of the male gametophyte in flowering plants?

- A. Zygote
- B. Ovule
- C. Pollen grain
- D. Embryo sac

Correct Answer: C. Pollen grain

6. What is the name of the protective outer layer of a pollen grain?

- A. Intine
- B. Nucellus
- C. Exine

D. Tapetum

Correct Answer: C. Exine

7. What is the name of the inner wall layer of a pollen grain?

A. Intine

B. Exine

C. Tapetum

D. Nucellus

Correct Answer: A. Intine

8. Which part of the flower is the long, slender stalk that holds up the anther?

A. Ovary

B. Stigma

C. Style

D. Filament

Correct Answer: D. Filament

9. What is the name of the tissue that nourishes developing pollen grains?

A. Tapetum

B. Epidermis

C. Endothecium

D. Middle layers

Correct Answer: A. Tapetum

10. What is the ploidy of the cells of a microspore tetrad?

A. Haploid (n)

B. Tetraploid ($4n$)

C. Diploid ($2n$)

D. Triploid ($3n$)

Correct Answer: A. Haploid (n)

11. What is the name of the stalk that attaches the ovule to the placenta?

A. Funicle

B. Chalaza

C. Micropyle

D. Hilum

Correct Answer: A. Funicle

12. Which part of the ovule is the small opening where integuments are absent?

A. Micropyle

B. Chalaza

C. Funicle

D. Hilum

Correct Answer: A. Micropyle

13. What is the name of the female gametophyte in flowering plants?

- A. Zygote
- B. Ovule
- C. Embryo sac
- D. Pollen grain

Correct Answer: C. Embryo sac

14. What is the process of forming megaspores from a megaspore mother cell called?

- A. Fertilization
- B. Pollination
- C. Megasporogenesis
- D. Microsporogenesis

Correct Answer: C. Megasporogenesis

15. Which part of a flower is the landing spot for pollen grains?

- A. Anther
- B. Stigma
- C. Ovary
- D. Filament

Correct Answer: B. Stigma

16. Which part of the flower contains the ovules?

- A. Filament
- B. Ovary
- C. Style
- D. Stigma

Correct Answer: B. Ovary

17. Why do wind-pollinated flowers often have large, feathery stigmas?

- A. To attract insects
- B. To produce more nectar
- C. To trap airborne pollen
- D. To protect the ovules

Correct Answer: C. To trap airborne pollen

18. What is the main difference between syngamy and triple fusion?

- A. Syngamy is in ovule, triple fusion is in pollen grain.
- B. Syngamy needs one male gamete, triple fusion needs two.
- C. Syngamy forms zygote, triple fusion forms endosperm.
- D. Syngamy forms endosperm, triple fusion forms embryo.

Correct Answer: C. Syngamy forms zygote, triple fusion forms endosperm.

19. A plant has a diploid zygote with $2n$ chromosomes. What is the ploidy of the endosperm that develops from the primary endosperm nucleus?

- A. n
- B. $2n$
- C. $4n$
- D. $3n$

Correct Answer: D. $3n$

20. A plant has a diploid zygote with $2n$ chromosomes. What is the ploidy of the embryo that develops from this zygote?

- A. n
- B. $4n$
- C. $2n$
- D. $3n$

Correct Answer: C. $2n$

21. What is the ploidy of the zygote after syngamy?

- A. Haploid (n)
- B. Diploid ($2n$)
- C. Tetraploid ($4n$)
- D. Triploid ($3n$)

Correct Answer: B. Diploid ($2n$)

22. What is the ploidy of the primary endosperm nucleus (PEN) after triple fusion?

- A. Haploid (n)
- B. Diploid ($2n$)
- C. Tetraploid ($4n$)
- D. Triploid ($3n$)

Correct Answer: D. Triploid ($3n$)

23. Why is double fertilization considered unique to flowering plants?

- A. It produces two seeds per ovule.
- B. It involves two pollen grains.
- C. It needs two different types of pollinators.
- D. It has two fusion events in one embryo sac.

Correct Answer: D. It has two fusion events in one embryo sac.

24. Which event happens first after double fertilization in flowering plants?

- A. Fruit formation
- B. Endosperm development
- C. Embryo development
- D. Seed maturation

Correct Answer: B. Endosperm development

25. A plant breeder wants to create a new hybrid. What technique should they use to prevent unwanted pollen from reaching the stigma?

- A. Germination
- B. Pollination
- C. Emasculation
- D. Fertilization

Correct Answer: C. Emasculation

26. What is the main function of the endosperm in a developing seed?

- A. To protect the embryo
- B. To help with seed dispersal
- C. To attract pollinators
- D. To provide food for the embryo

Correct Answer: D. To provide food for the embryo

27. A farmer wants to grow a crop that produces seeds without fertilization. Which phenomenon should they look for in the plant?

- A. Polyembryony
- B. Double fertilization
- C. Parthenocarpy
- D. Apomixis

Correct Answer: D. Apomixis

28. A seed contains more than one embryo. What is this phenomenon called?

- A. Polyembryony
- B. Parthenocarpy
- C. Apomixis
- D. Double fertilization

Correct Answer: A. Polyembryony

29. Why might a plant breeder want to transfer apomictic genes into hybrid varieties?

- A. To make hybrid seeds cheaper for farmers.
- B. To increase genetic variation in hybrids.
- C. To make hybrids need more water.
- D. To stop hybrids from producing fruit.

Correct Answer: A. To make hybrid seeds cheaper for farmers.