Sexual Reproduction in Flowering Plants CHAPTER-1

(b) 32 1. A plant which shows flowering at an interval (c) 16 of 12 years is-(d) 8 (a) Adansonia (b) Kygelia (c) (c) Strobilanthes kunthiana (d) Bambusa Tulda 7. During fertilization the embryo sac of a (C) typical dicotyledonous plant is-(a) 8-cellular 2. Identify the mismatched pairs-(b) 7-cellular (a) Microsporangium - anther (c) 6-cellular (b) megasporangia - nucellus tissue (d) 5-cellular (c) pollen - male gamete - female gametophyte (d) embryo sac **(B)**

3. Which of the following plants is not a waterpollinated plant?

(a) Zostera

- (b) Vallisneria
- (c) Hydrilla
- (d) Cannabis

(d)

(c)

4. _____of the pollen grain divides to form two male gametes.

- (a) vegetative cell
- (b) reproductive cell
- (c) Microspore mother cell
- (d) none of the above
- (B)

5. The part of the gynoecium which determines the compatibility of the pollen grain is-(a) stigma 8. Discovery of double fertilization in Fritillaria and Lilium plants.
The scientists who did this were(a) Navaschin (1898)
(b) Strasbourger (1898)
(c) Amici (1898)
(d) Mendel (1898)

(a)

(b) synergid(c) ovary

pollen grains?

(a) 64

(a)

(d) supporting cells

6. 64 (Sixty four) How many microspore

mother cells will participate in meiosis to form

9. Endotrophic seeds are found in(a) Castor (Ricinus communis)
(b) Barley (Hordeum vulgare)
(c) Coconut (Cocos nucifera)
(d) all of the above
(d)

10. Permanent nucellus tissue is called_____ and it is present in____-

- (a) Endosperm, black pepper
- (b) Bhuranosh, Coconut
- (c) Endosperm, coconut
- (d) endosperm, black pepper
- (a)

11. If there are 24 chromosomes in the endosperm cell of an angiosperm plant, then the number of chromosomes in each cell of the root of the same plant will be-

- (a) 4
- (b) 8
- (c) 16
- (d) 24

(c)

- 12. The father of Indian plant embryology is-
- (a) P. Maheshwari
- (b) Swaminathan
- (c) C.J. butler
- (d) Professor R.Mishra

(a)

13. A large shield-shaped cotyledon is found in monocotyledon seeds, which is called-

(a) aleurone layer

- (b) scutellum
- (c) radicle
- (d) Hylum

(b)

- 14. Polyembryony is generally found in-
- (a) Banana
- (b) tomato
- (c) Potato
- (d) Citrus

(d)

15. The specialty of pollen grains of wind pollinated flowers is(a) small in size
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(b) light in weight(c) surface dry(d) all of the above

(d)

Fill In The Blanks:-

1.A substance called <u>sporopollenin</u> is found in the outer wall of the pollen grain which is nonbiodegradable and highly resistant.

2. <u>Three (3)</u> nuclei are present in a mature male gametophyte.

3. During fertilization, the pollen tube enters the ovary from the <u>nucellus</u> end.

4. Removing the anthers of the stamens located in the flower before maturity is called <u>emasculation.</u>

5. On the basis of the number of <u>chromosomes</u>, angiosperm endosperm is triploid

6. The innermost layer of the microsporangium is the <u>tapetum</u>.

7. The process of fruit formation without fertilization is called <u>parthenogenesis.</u>

8. Apple is a <u>virtual/real</u> fruit.

9. Reaching of pollen grains to the stigma is called <u>pollination</u>.

10. Flowers of plants that show <u>bat</u> pollination are fragrant, generally white and bloom at night.

Very short answer questions -

1. What is called polyploidy?

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Answer: Generally, only one embryo develops in a seed, but sometimes more than one embryo develops, then it is called polyploidy.

• Leuven Hawk (in orange)

2. Give two examples of plants which have only one ovule in their ovary?

Answer (i) Wheat - Triticum aestivum

(ii) Mango- Mangifera indica

3. Name the cell through which endosperm develops in coconut.

Answer: Primary endosperm cell (3n)

- Nuclear endosperm is found in coconut.
- 4. What is meant by Herkogamy?

Answer: An adaptation found in plants that show cross-pollination.

Under which a specific natural structural barrier is found between the anther and the gynoecium. As-

• Pollen in Aak - in the form of polynya.

5. What is inelasticity? Give examples.

Answer: This is an adaptation for selfpollination, in which the genital organs (gynoecium) of the flower are always covered by petals.

Example – Viola, Juncus.

6. What is meant by multitubular pollen grain?

Answer: During the germination of pollen grain, the exine bursts and the endosperm comes out in the form of a pollen tube. If more than one pollen tube develops, it is called multitubular pollen. Example: Plant members of the Malvaceae family.

7. By which substance are the walls of the four microspores connected together in the microspore tetrad?

Answer: callose

8. Define embryogenesis.

Answer: The process of development of embryo from zygote is called genesis.

9. What is sacking?

Answer: Covering the flower with a bag made of cellulose after castration under the desired pollination process is sacking.

10. What is the mitogenesis of the endosperm in flowering plants?

Answer: haploid (n)

11. Explain the cellular arrangement in Polygonum embryo sac.

Answer: Polygonum embryo sac is haploid, 7 celled and 8 nucleated structure.

department + center + nucellus

Cellular arrangement =3+1+3

12. Which layer of microsporangium wall is responsible for the dehiscence of pollen sacs?

Answer: endothecium

13. What do you mean by parthenogenesis?

Answer: The development of an embryo from an unfertilized egg cell is called parthenogenesis. Haploid offspring are produced by parthenogenesis.

Short answer questions (only Questions)

- 1. Pollen particles show harmful effects. How?
- 2. Write the types and functions of the nutrient layer of microsporangium.
- 3. Explain double fertilization triple fusion.
- 4. Write different types and examples of endosperm.
- 5. What is floriculture? Draw a labeled diagram of a typical stamen.
- List the events before fertilization. Draw a labeled diagram of the structure of a polygonal embryo sac.
- Show the various stages of dicotyledon embryo development using diagrams only.
- 8. Write the difference between semipollinated and semi-pollinated flowers.
- 9. Define pollination. Write the importance of pollination.
- 10. Show the essential and auxiliary cycles of a typical bisexual flower with a diagram.
- 11. Show the germinated pollen grain with a diagram.

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